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Report on the technical review of the eighth national communication and the technical review of the fifth biennial report of Cyprus

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

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

The review of these submissions took place in Nicosia, Cyprus, from 15 to 19 May 2023.



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Abbreviations and acronyms

AEA	annual emission allocation
Annex II Party	Party included in Annex II to the Convention
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BR	biennial report
CARE-C	Climate and Atmosphere Research Centre at the Cyprus Institute
CCS	carbon dioxide capture and storage
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
CTF	common tabular format
EMME	Eastern Mediterranean and Middle East
ERT	expert review team
ESD	European Union effort-sharing decision
ESR	European Union effort-sharing regulation
EU	European Union
EU ETS	European Union Emissions Trading System
F-gas	fluorinated gas
GDP	gross domestic product
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
ICAO	International Civil Aviation Organization
IE	included elsewhere
IMO	International Maritime Organization
IPPU	industrial processes and product use
LNG	liquefied natural gas
LT-LEDS	long-term low-emission development strategy(ies)
LULUCF	land use, land-use change and forestry
MARDE	Ministry of Agriculture, Rural Development and Environment of Cyprus
N ₂ O	nitrous oxide
NA	not applicable
NC	national communication
NE	not estimated
NECP	Cyprus's Integrated National Energy and Climate Plan for 2021–2030
NF ₃	nitrogen trifluoride
NGO	non-governmental organization
NO	not occurring
PaMs	policies and measures
PFC	perfluorocarbon
PV	photovoltaic
reporting guidelines for supplementary information	“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol. Part II: Reporting of supplementary information under Article 7, paragraph 2”
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”
UNECE	United Nations Economic Commission for Europe
WAM	‘with additional measures’
WEM	‘with measures’
WOM	‘without measures’

I. Introduction and summary

A. Introduction

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

2. In accordance with decision 13/CP.20, a draft version of this report was transmitted to the Government of Cyprus, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

3. The review was conducted from 15 to 19 May 2023 in Nicosia, Cyprus, by the following team of nominated experts from the UNFCCC roster of experts: Zuelclady MF Araujo-Gutierrez (Mexico), Adjossi Fleur Eunice Dossa (Benin), Esther Mertens (Belgium), Orlando Ernesto Rey Santos (Cuba) and Yasna Rojas Ponce (Chile). Esther Mertens and Orlando Ernesto Rey Santos were the lead reviewers. The review was coordinated by Ruta Bubniene and Sevdalina Todorova (secretariat).

B. Summary

4. The ERT conducted a technical review of the information reported in the NC8 of Cyprus in accordance with the UNFCCC reporting guidelines on NCs,¹ the reporting guidelines for supplementary information, in particular the supplementary information required under Article 7, paragraph 2, and on the minimization of adverse impacts under Article 3, paragraph 14, of the Kyoto Protocol² and of the information reported in the BR5 of Cyprus in accordance with the UNFCCC reporting guidelines on BRs.³

1. Timeliness

5. The NC8 was submitted on 30 December 2022, before the deadline of 31 December 2022 mandated by decision 6/CP.25. The NC8 was resubmitted on 1 and 7 June 2023 to address issues raised during the review. The two resubmissions (different only in values in one table) included changes in all chapters of the NC, including revised information on national circumstances, GHG inventories, projections, PaMs, vulnerability and adaptation, research and systematic observation, and education and public awareness. Detailed information on improvements related to the resubmissions is provided in paragraph 11 below. Unless otherwise specified, the information and values from the latest submission are used in this report.

6. The BR5 was submitted on 30 December 2022, before the deadline of 31 December 2022 mandated by decision 6/CP.25. The CTF tables were submitted on 3 January 2023. The BR5 and the CTF tables were resubmitted on 7 June 2023 to address issues raised during the review. The resubmission of the BR5 included additional information on historical and projected emissions covered by the EU ETS and the ESD. The resubmitted CTF tables did not provide new data on GHG inventories and excluded CTF table 4(a)II, but included changes to the PaMs reported in CTF table 3 and revisions to the data linked to the projections in CTF tables 5 and 6(a–c). Detailed information on improvements related to the

¹ Decision 6/CP.25, annex.

² Decision 15/CMP.1, annex, and decision 3/CMP.11, annex III.

³ Decision 2/CP.17, annex.

resubmissions is provided in paragraph 11 below. Unless otherwise specified, the information and values from the latest submission are used in this report.

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

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

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

(a) The timeliness of its reporting by submitting its NC8 on time;

(b) The transparency of the information reported on national circumstances relevant to GHG emissions and removals by including clear information on how the national circumstances and their changes affect GHG emissions and removals, in particular by amending the information with regard to the energy and LULUCF sectors;

(c) The completeness of the GHG inventory information reported by improving the information on the national system by defining the roles and responsibilities of the various agencies and entities involved in the inventory development process;

(d) The completeness of the information reported on the national registry, including by providing information on all mandatory reporting elements set out in decision 15/CMP.1, annex, paragraph 32;

(e) The completeness of the information reported on PaMs by providing information on which GHGs are affected by each policy or measure and reporting on policies or practices which encourage activities that lead to greater levels of anthropogenic GHG emissions than would otherwise occur;

(f) The transparency of the information reported on PaMs by providing a description of the way in which progress with PaMs to mitigate GHG emissions is monitored and evaluated over time;

(g) The transparency of the information on projections and the total effects of PaMs by providing more information on the methods used and information on the factors and activities underlying projected emission trends across the time series for each sector;

(h) The completeness of the information reported on vulnerability assessment, climate change impacts and adaptation measures by providing information on action taken to implement Article 4, paragraph 1(e), of the Convention, regarding adaptation;

(i) The completeness of the information reported on research and systematic observation by providing information on capacity-building related to research and systematic observation in developing countries and on opportunities for and barriers to free and open international exchange of data;

(j) The transparency of the information reported on research and systematic observation by improving the structure of the NC and including a section on systematic observation;

(k) The completeness of the supplementary information related to the Kyoto Protocol reported by providing information on the provisions of the Kyoto Protocol, in particular further information on the national system; the national registry; domestic and regional programmes and/or legislative arrangements; the steps it has taken to promote and/or implement decisions by ICAO and IMO to limit GHGs not controlled by the Montreal Protocol from aviation and marine bunker fuels; national legislative arrangements and administrative procedures that also contribute to the conservation of biodiversity and sustainable use of natural resources; and how it strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects on other Parties.

Table 1
Assessment of completeness and transparency of mandatory information reported by Cyprus in its eighth national communication

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

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

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

Table 2
Assessment of completeness and transparency of mandatory supplementary information under the Kyoto Protocol reported by Cyprus in its eighth national communication

<i>Supplementary information under the Kyoto Protocol</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of finding(s)</i>
National system	Complete	Transparent	
National registry	Complete	Transparent	
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Complete	Transparent	
PaMs in accordance with Article 2	Complete	Transparent	
Domestic and regional programmes and/or arrangements and procedures	Complete	Transparent	
Information under Article 10 ^a	NA	NA	NA
Financial resources ^b	NA	NA	NA
Minimization of adverse impacts in accordance with Article 3, paragraph 14	Complete	Transparent	

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

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

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

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

reporting guidelines on BRs. The ERT notes that issue 1 in table II.4 has been identified in three or more successive reviews.

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

(a) The timeliness of its reporting by submitting its BR5 on time;

(b) The completeness of the information reported on its quantified economy-wide emission reduction target and related assumptions, conditions and methodologies by providing information on the domestic arrangements established for the process of self-assessment of compliance with emission reductions against emission reduction commitments;

(c) The transparency of the information reported on progress in achievement of quantified economy-wide emission reduction targets and relevant information by clearly identifying which PaMs it has implemented or plans to implement to achieve its economy-wide emission reduction target; correcting the status of implementation for some PaMs and clearly indicating the names of the implementing entities in CTF table 3; and reporting, to the extent possible, mitigation actions by sector (energy, IPPU, agriculture, LULUCF, waste and other) and by gas (CO₂, CH₄, N₂O, HFCs, PFCs and SF₆), as well as reporting in a more consistent manner between the BR5 and CTF table 3;

(d) The completeness of the information reported on projections by providing, to the extent possible, emission projections for the LULUCF sector;

(e) The transparency of the information reported on projections by providing further information on the models and approaches used for projections for all sectors and gases and their changes since the most recent NC; historical data on key underlying assumptions and values of variables such as GDP growth, population growth and international fuel prices; and relevant information on factors and activities underlying projected emission trends across the time series for each sector.

Table 3

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

<i>Section of BR</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of finding(s)</i>
GHG emissions and removals	Complete	Transparent	
Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies	Complete	Mostly transparent	Issue 1 in table II.1
Progress in achievement of targets	Mostly complete	Mostly transparent	Issues 1–2 in table II.2 Issue 1 in table II.3 Issues 1–2 in table II.4
Provision of support to developing country Parties ^a	NA	NA	NA

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

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

11. The NC8, BR5 and CTF table resubmissions made during the review improved:

(a) The information reported on national circumstances relevant to GHG emissions and removals by including clear information on how the national circumstances and their changes affect GHG emissions and removals, particularly with regard to the energy and LULUCF sectors;

(b) The GHG inventory information reported by improving the description of both GHG emissions trends by sector and the legal framework and institutional arrangements for GHG inventory preparation;

(c) The information reported on the Party's quantified economy-wide emission reduction target and related assumptions, conditions and methodologies by including information on the domestic arrangements established for the process of self-assessment of compliance with emission reductions against emission reduction commitments;

(d) The information reported on PaMs by including information on policies and practices identified that lead to greater levels of anthropogenic GHG emissions than would otherwise occur; information on the absence of policies and practices related to the mitigation of emissions from international transport; improved information on individual PaMs in the NC8 and CTF tables (e.g. sector, implementation year and status of implementation in CTF table 3), as well as by including table 5.3 in the NC8; and a description of the way in which progress with PaMs to mitigate GHG emissions is monitored and evaluated over time;

(e) The information reported on projections and the total effects of PaMs by including all GHGs when presenting projected emissions in the tables of the NC8; information on indirect GHG emissions; an enhanced description of the methodologies used for projecting emissions (including references to documents containing detailed information on models and approaches) and of the differences in the methodologies, assumptions and results between projections reported in the NC8 and those reported in previous NCs; information on historical data for key underlying assumptions, as well as values for underlying assumptions and for variables (e.g. GDP, population growth) used to develop the emission projections; and improved information on the factors and activities underlying projected emission trends across the time series for each sector;

(f) The information reported on vulnerability assessment, climate change impacts and adaptation measures by including a comment on action taken to implement Article 4, paragraph 1(e), of the Convention; up-to-date information on methodologies and guidance for assessing climate change impacts, vulnerability and adaptation measures; updated information on the progress of implementation of the National Adaptation Strategy; specific examples related to climate change impacts and domestic adaptation policies and strategies; and information on the monitoring and evaluation framework and the progress and outcomes of adaptation action;

(g) The information reported on research and systematic observation by including information on opportunities for and barriers to free and open international exchange of data and on action taken to overcome such barriers; improved information on research and systematic observation activities in the area of climate change, including by providing details on domestic and international activities in which the Party is involved and on action taken to support related capacity-building activities in developing countries; updated information on climate process and climate system studies (including paleoclimatic studies), research on the impacts of climate change, socioeconomic analysis (of both the impacts of climate change and response options), research and development of mitigation and adaptation approaches (including technologies); and how the Party supports developing countries in establishing and maintaining observing systems and related data and monitoring systems;

(h) The information reported on education, training and public awareness by including information on public participation in the preparation of NCs;

(i) The supplementary information related to the Kyoto Protocol reported by including information on the steps to promote and/or implement any decisions by ICAO and IMO to limit GHGs not controlled by the Montreal Protocol from aviation and marine bunker fuels; how the Party strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects on other Parties; and national legislative arrangements and administrative procedures that also contribute to the conservation of biodiversity and sustainable use of natural resources.

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

A. National circumstances relevant to greenhouse gas emissions and removals

1. Technical assessment of the reported information

12. The NC8 contains key data on legislation, population trends, geography and land use, climate and climate change, economic developments, energy, transport, the buildings sector, industry, trade, the services sector, agriculture, forestry, resource efficiency and wastewater. During 1990–2020, the population of Cyprus increased by 56.9 per cent and the GDP by 140.6 per cent. While GDP per capita increased by 56.4 per cent over this period, GHG emissions per capita remained relatively stable (at about 7 t CO₂ eq excluding LULUCF) and GHG emissions per GDP unit decreased by 33.9 per cent, indicating a decoupling of economic growth from GHG emissions.

13. The changes in the carbon intensity of the GDP are linked to the economy restructuring in line with Cyprus's evolution to an international tourist, business and services centre from the 1980s onward. Since 1990, there has been notable growth in the tertiary sector (services), the biggest contributor to the GDP (above 70 per cent), accompanied by a decline in the primary and secondary sectors. Increasing energy consumption in the tertiary sector has been the primary driver behind the rise in emissions in recent years, while the impact of primary sectors such as agriculture and fishing is continuously shrinking. The total utilized agricultural land decreased by 24 per cent between 2003 and 2010.

14. Cyprus faces unique challenges in its climate-related policies owing to its geographical location, high vulnerability to climate change and heavy reliance on external sources of energy. As an expanding economy with ambitious energy and climate goals, the country has trade-offs to consider between its energy and climate agenda and its development plans.

15. Of all the EU member States, Cyprus has witnessed the most significant increase in energy demand since 1990; final energy consumption rose by approximately 38 per cent in 1990–2020. The services sector has experienced a surge in energy consumption of 358 per cent since 1990. Both freight and passenger transport continue to grow steadily and the heating and cooling of buildings constitutes a significant portion of the country's overall energy consumption.

16. Despite the technical limitations affecting the penetration of RES (e.g. lack of interconnection with the trans-European electricity networks and lack of centralized storage capacity), their use has increased remarkably. Consumption levels have increased nearly tenfold since 1990 and by 2020, the share of RES in gross final energy consumption had reached 16.9 per cent. The increase can be attributed largely to the widespread use of solar water heaters, the installation of PV systems, the establishment of wind farms, the use of biomass or biogas units, and the adoption of biofuels in the transport sector. However, the consumption of electricity generated from conventional fuels also increased in 1990–2020 (by 170 per cent), having a significant impact on GHG emissions.

17. Cyprus is actively exploring ways to reduce its dependence on imported oil and decrease its GHG emissions. A crucial step towards achieving these goals is the exploitation of the newly constructed LNG import terminal in Vasilikos, which is scheduled to commence operations in July 2023. Through the construction of this installation, Cyprus aims to diversify its energy sources and make a valuable contribution to its energy security. Seeking to address the technical constraints arising from the island's isolated electricity system, Cyprus is working on the EuroAsia Interconnector project with Greece and Israel. Slated for commissioning in 2028, this grid interconnection will play a pivotal role in enhancing Cyprus's energy supply security and reducing its CO₂ emissions. By facilitating the integration of RES for electricity generation, the interconnection will enable other countries in the region to further embrace clean energy solutions.

2. Assessment of adherence to the reporting guidelines

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

B. Greenhouse gas inventory information⁴

1. Technical assessment of the reported information

19. Cyprus reported information in its BR5 and NC8 on its historical GHG emissions and inventory arrangements. Total GHG emissions⁵ excluding emissions and removals from LULUCF increased by 52.6 per cent between 1990 and 2020, while total GHG emissions including net emissions or removals from LULUCF increased by 51.4 per cent over the same period. Emissions peaked in 2008, decreased until 2013 owing to an increase in electricity prices and the effects of the global financial crisis, and since 2013 have shown an increasing trend without reaching the 2008 level. A slight dip attributable to the coronavirus disease 2019 pandemic could be seen in 2020. The changes in total emissions were driven mainly by factors such as substantial economic growth, particularly in the tourism sector, an increase in electricity demand due to improved living conditions, population growth, an increase in the number of privately owned vehicles, an increase in the use of F-gases as substitutes for ozone-depleting substances, fluctuations in animal population, and an increase in solid waste production per capita. Emissions excluding emissions and removals from LULUCF in 2021 increased by 2.0 per cent compared with the 2020 level. The energy sector continues to be the largest contributor to total national GHG emissions, with 6,172.40 kt CO₂ eq (71.2 per cent of total emissions without LULUCF) in 2021.

20. Table 4 illustrates the emission trends by sector and by gas for Cyprus. The emissions reported in the 2023 annual submission differ from the data reported in CTF table 1 in that they were affected by recalculations for the time series 1990–2020 (e.g. recalculations made owing to the revision of the activity data used for manufacturing industries and construction). The May 2023 annual submission reports slightly higher emissions compared with the April 2023 annual submission owing to the use of revised N₂O emission factors for agricultural soils.

Table 4

Greenhouse gas emissions by sector and by gas for Cyprus for 1990–2021

	GHG emissions (kt CO ₂ eq)					Change (%)		Share (%)	
	1990	2000	2010	2020	2021	1990–2020	2020–2021	1990	2021
<i>Sector</i>									
1. Energy	3 954.35	6 357.63	7 546.70	6 047.95	6 172.40	52.9	2.1	71.3	71.2
A1. Energy industries	1 767.15	2 964.25	3 880.21	3 032.83	3 087.56	71.6	1.8	31.7	35.6
A2. Manufacturing industries and construction	504.83	802.46	699.92	561.49	530.62	11.2	–5.5	9.2	6.1
A3. Transport	1 236.79	1 837.70	2 375.42	1 916.34	2 051.16	54.9	7.0	22.4	23.7
A4. and A5. Other	445.12	752.39	591.15	537.29	503.06	20.7	–6.4	8.0	5.8
B. Fugitive emissions from fuels	0.45	0.84	NO, NE	NO, NE	NO, NE	NA	NA	0.0	NA
C. CO ₂ transport and storage	NO	NO	NO	NO	NO	NA	NA	NA	NA
2. IPPU	727.93	883.08	810.82	1 267.49	1 277.81	74.1	0.8	13.0	14.7
3. Agriculture	454.27	542.49	514.43	531.32	557.25	17.0	4.9	8.6	6.4

⁴ GHG emission data in this section are based on Cyprus's 2023 annual submission, version 6 (10 May 2023). All emission data in subsequent chapters are based on Cyprus's BR5 CTF tables unless otherwise noted.

⁵ In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of CO₂ eq excluding LULUCF, unless otherwise specified.

	GHG emissions (kt CO ₂ eq)					Change (%)		Share (%)		
	1990	2000	2010	2020	2021	1990–2020	2020–2021	1990	2021	
	4. LULUCF	–153.07	–142.51	–265.04	–298.54	–235.33	95.0	–21.2	NA	–2.7
5. Waste	435.18	523.24	583.92	656.09	662.56	50.8	1.0	7.1	7.6	
6. Other ^a	–	–	–	–	–	NA	NA	NA	NA	
<i>Gas^b</i>										
CO ₂	4 644.86	7 104.60	8 101.12	6 910.91	7 029.36	48.8	1.7	83.4	81.1	
CH ₄	776.45	938.34	973.73	1 064.83	1 097.40	37.1	3.1	12.1	12.7	
N ₂ O	147.69	191.95	169.33	172.70	173.53	16.9	0.5	4.4	2.0	
HFCs	NO, NE	62.44	198.99	335.68	353.49	NA	5.3	NA	4.1	
PFCs	NO	NO	NO	NO	NO	NA	NA	NA	NA	
SF ₆	2.73	9.13	12.70	18.74	16.24	586.1	–13.3	0.0	0.2	
NF ₃	NO	NO	NO	NO	NO	NA	NA	NA	NA	
Total GHG emissions excluding LULUCF	5 571.73	8 306.44	9 455.87	8 502.86	8 670.02	52.6	2.0	100.0	100.0	
Total GHG emissions including LULUCF	5 418.66	8 163.94	9 190.83	8 204.31	8 434.69	51.4	2.8	NA	NA	
Total GHG emissions excluding LULUCF, including indirect CO₂	5 576.94	8 314.05	9 469.00	8 508.02	8 675.23	52.6	2.0	NA	NA	
Total GHG emissions including LULUCF, including indirect CO₂	5 423.87	8 171.54	9 203.97	8 209.47	8 439.90	51.4	2.8	NA	NA	

Source: GHG emission data: Cyprus's 2023 annual submission, version 6.

^a Cyprus does not report emissions under the sector other.

^b Emissions by gas without LULUCF and including indirect CO₂.

21. In brief, Cyprus's national inventory arrangements were established in accordance with the 2017 Council of Ministers decision "Structure and operation of the national greenhouse gases inventory system: roles and responsibilities". The decision includes a description of the responsibilities of each entity involved in inventory preparation, data provision or other tasks. The Department of Environment under MARDE has been designated as the national entity responsible for overseeing the national inventory. Since preparation of the 2020 annual submission, technical and scientific responsibility for compiling the annual inventory has been entrusted to an external contractor, the Cyprus Institute. Various government ministries and agencies, as well as NGOs, provide data for the inventory. There have been no changes in these arrangements since the BR4 and the main change since the NC7 is the outsourcing of the preparation of the LULUCF inventory.

2. Assessment of adherence to the reporting guidelines

22. The ERT assessed the information reported in the NC8 and BR5 of Cyprus and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BRs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

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

(a) Technical assessment of the reported information

23. Cyprus provided in the NC8 a description of how its national system for the estimation of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol is performing the general and specific functions defined in the annex to decision 19/CMP.1 in conjunction with decisions 3/CMP.11 and 4/CMP.11. The description includes most of the elements mandated by paragraph 30 of the annex to decision

15/CMP.1. The NC8 also contains a reference to the description of the national system provided in the national inventory reports.

(b) Assessment of adherence to the reporting guidelines

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

4. National registry

(a) Technical assessment of the reported information

25. In its NC8 Cyprus provided information on how its national registry performs the functions in accordance with the annex to decision 13/CMP.1 in conjunction with decision 3/CMP.11 and the annex to decision 5/CMP.1 and complies with the requirements of the technical standards for data exchange between registry systems. The ERT noted that the connection with the international transaction log has been recently established.

(b) Assessment of adherence to the reporting guidelines

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

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

1. Technical assessment of the reported information

27. Cyprus reported information on its economy-wide emission reduction target in its BR5. For Cyprus, the Convention entered into force on 13 January 1998. The Party became a Party included in Annex I to the Convention on 1 January 2013. Under the Convention Cyprus committed to contributing to the achievement of the joint EU economy-wide emission reduction target of 20 per cent below the 1990 level by 2020.

28. The target for the EU and its member States is formalized in the EU 2020 climate and energy package. The legislative package regulates emissions of CO₂, CH₄, N₂O, HFCs, PFCs and SF₆ using GWP values from the AR4 to aggregate the GHG emissions of the EU until 2020. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention.

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

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

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

32. Cyprus has a national target of reducing its emissions to 5 per cent below the 2005 level by 2020 for ESD sectors. This target has been translated into binding quantified AEAs for 2013–2020. Cyprus’s AEAs change following a path from 393.81 kt CO₂ eq in 2013 to 330.89 kt CO₂ eq in 2020.⁶ Under the ESR, Cyprus has a national target of reducing emissions from covered sectors to 32 per cent below the 2005 level by 2030.

33. Cyprus also reported on its longer-term target to reduce GHG emissions, with the goal being to become climate-neutral by 2050, as set out in its LT-LEDS (2022 update), which is complementary to and presupposes the achievement of the objectives of the NECP. The LT-LEDS constitutes a road map to achieving Cyprus’s targets in compliance with the EU objective referred to in paragraph 31 above.

34. Cyprus reported that its renewable energy target was to achieve a share of RES in gross final energy consumption of 13 per cent in 2020, in line with the EU directive on renewable energy (directive 2009/28/EC). The Party has updated the national renewable energy target to reach a 23 per cent share of RES by 2030 and a 51 per cent share by 2050. In addition, the Party’s energy efficiency target was to achieve 242 ktoe cumulative energy savings between 2014 and 2020, in accordance with the EU directive on energy efficiency (directive 2012/27/EU). Cyprus has now committed to a national target of achieving cumulative end-use energy savings of 243.04 ktoe in 2021–2030. Cyprus’s contribution to the EU 2030 energy efficiency target involves a 17 per cent reduction in primary energy consumption and a 13 per cent reduction in final energy consumption.

2. Assessment of adherence to the reporting guidelines

35. The ERT assessed the information reported in the BR5 of Cyprus and identified an issue relating to transparency, and thus adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table II.1.

D. Information on policies and measures

1. Technical assessment of the reported information

36. Cyprus provided in its NC8 and BR5 information on its PaMs⁷ implemented, adopted and planned to fulfil its commitments under the Convention. Cyprus’s set of PaMs is similar to that previously reported, with a few updates; for example, the measure on energy efficiency of electricity infrastructure was reported as planned in the BR4 and as under implementation in the NC8 and BR5. No PaMs were reported in the NC8 as having been discontinued since the NC7. The Party reported on successful PaMs that were adopted in the past and still receive funding for their continued implementation.

37. Cyprus 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. The Party also indicated that there have been no major changes to its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of progress towards its target. As noted by the BR4, a domestic framework for climate and energy governance for implementing the EU regulation on the governance of the Energy Union and climate action

⁶ According to the EU transaction log.

⁷ The UNFCCC reporting guidelines on BRs use the term “mitigation actions”, whereas the UNFCCC reporting guidelines on NCs use the term “policies and measures”. The terms are used interchangeably in this report to refer to the relevant information in either the NC or BR.

(regulation 2018/1999/EU) was established in order to ensure achievement of the EU 2030 long-term objectives and targets in line with the Paris Agreement, which supported the preparation of the NECP, its implementation and monitoring, and proposals for revisions.

38. An interministerial committee (consisting of the Ministry of Finance, Ministry of Transport, Communications and Works, Ministry of Energy, Commerce, Industry and Tourism and the Department of Environment) within the framework referred to in paragraph 37 above had the final responsibility for preparing Cyprus's NECP, which was then adopted by the Council of Ministers. The interministerial committee is advised by a technical committee of the permanent secretaries of the same ministries, which, in turn, is advised by seven working groups (on decarbonization; energy efficiency; energy security; internal energy market; research, innovation and competitiveness; renewable energy; and transport). This structure evolved after the publication of the European Green Deal and following a 2020 Council of Ministers decision (90.370), more working groups were added. Via the working groups, the committee manages policymaking, policy implementation, and reporting on progress to ensure Cyprus's compliance with its various policy commitments. The decarbonization working group, which is coordinated by the Department of Environment under MARDE, is pivotal in planning, implementing, monitoring and reporting on national activities addressing climate change, including proposals for PaMs under the different projection scenarios and their revisions and updates. During the review, the Party clarified that the working groups meet on an ad hoc basis, depending on need in the context of delivering on EU commitments.

39. No overarching legislative framework under which PaMs are planned and implemented and projections are prepared is in place yet, but there are ongoing developments in formalizing existing institutional arrangements into a holistic legislative climate framework under which work towards all national commitments can be regulated. The ERT noted that more stringent legislative arrangements, that is, a climate change law, could support the continuity of implementation of climate change mitigation actions.

40. An assessment of the social and economic consequences of the Party's response measures was conducted for the NECP, but it was not included in the NC8. This assessment includes an analysis of the effects of planned and implemented PaMs on economic output (volumes) and employment. The economic impacts were evaluated to be relatively small, with the highest impact shown for job loss and creation, linked to the shift from fossil fuels to RES (e.g. solar PV installations). The social consequences assessed include the impacts of price increases on households with different income levels and the positive impacts (in terms of damage cost reduction) of reduced air pollutant concentrations towards 2030 on health.

41. Cyprus reported that its actions to identify and review its own policies and practices that may lead to greater levels of emissions, such as the construction and operation of a natural gas pipeline, are taken on the basis of ad hoc requests from the interministerial committee to the Department of Environment and constitute the assessment of the GHG impacts of a specific proposal, policy, measure or activity. No analysis of the various parameters involved in the gas pipeline construction and operation has been carried out yet.

42. In its reporting on PaMs, Cyprus provided the estimated emission reduction impacts for some of its PaMs. Cyprus used the same accounting methods for estimating the impacts of its PaMs as those used for its latest submitted national GHG inventory for all sectors, with the exception of the energy sector. The Party explained that because of the complexity of the models used in the energy sector (OSeMOSYS-Cyprus and final energy demand projection model) (see para. 75 below), it is not possible to provide the impacts for each individual policy or measure for the sector.

43. The key overarching related cross-sectoral policy in the EU is the 2020 climate and energy package, adopted in 2009, which includes the revised EU ETS and the ESD. The package is supplemented by renewable energy and energy efficiency legislation and legislative proposals on the 2020 targets for CO₂ emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7th Environment Action Programme and the clean air policy package. The 2021 European Climate Law, which forms part of the European Green Deal, made climate neutrality by 2050 legally binding and raised the EU-wide 2030 emissions reduction target

to at least 55 per cent compared with the 1990 level. In 2023, the European Parliament adopted a series of legislative proposals, collectively referred to as Fit for 55, intended to help achieve the new 2030 target. These new regulations strengthened both the ESR and EU ETS 2030 targets, extended the EU ETS to include maritime shipping in 2024 and established the Social Climate Fund to address equitability of mitigation impacts. The regulations also created the EU ETS 2 to cover at the point of distribution most fuel used in sectors not covered by the EU ETS, beginning in 2027.

44. The 2021–2030 EU-wide policies are operationalized through the national energy and climate plans of EU member States, which should set out national objectives for each of the five dimensions of the Energy Union, namely energy security; the internal energy market; energy efficiency; decarbonization; and research, innovation and competitiveness. The national energy and climate plans are periodically updated to reflect changes to EU policy, such as the implementation of the European Green Deal.

45. Cyprus's NECP specifies the Party's main commitments (initially a 24 per cent reduction in emissions in 2030 compared with the 2005 level) and actions towards their achievement, including to invest in natural gas as an intermediate carbonization solution, to increase the country's renewable energy share, to increase energy efficiency, and to decrease emissions from some sectors covered by the ESD, namely transport, agriculture and waste. Cyprus's NECP was submitted in 2020 and updated in 2022. The next update of the NECP is under preparation with a view to it being adopted in June 2024.

46. Cyprus introduced national-level policies to achieve its targets under the ESD and domestic emission reduction targets. The key policies reported are the shift to RES and the further promotion of energy efficiency. The mitigation effects of these two policies are the most significant. Another policy that has delivered and continues to deliver significant emission reductions is the recovery of F-gases from old equipment under the IPPU sector. The Party indicated in the NC8 that most of the PaMs reported were introduced with a view to achieving the national emission reduction target for 2030 presented in the NECP (2020). The country does not have regions, and local-level PaMs present challenges as not all cities and communities have the capacity to design, implement or monitor them. The Energy Agency actively supports the establishment of linkages and interactions at the local level to facilitate the implementation of mitigation actions. Local-level initiatives include developing local adaptation plans, heating and cooling strategies, and education strategies.

47. Cyprus highlighted the domestic mitigation actions that are under development, such as those being revised to align with the more ambitious 2030 target of the EU to reduce domestic emissions by at least 55 per cent compared with the 1990 level. The LT-LEDS (2022) guides Cyprus's transition to a low-emission economy and the deployment of technologies and instruments – such as a carbon tax, introduction of CCS for EU ETS installations (targets of 20 per cent by 2040 and 70 per cent by 2050) and interconnection of the electricity grid to neighbouring countries to increase the use of RES – in 2030–2040 to lead the country to climate neutrality in 2050. Among the mitigation actions that provide a foundation for significant additional mitigation impact are the shift to less carbon-intensive fuels (e.g. via increased use of natural gas); the shift to less energy-intensive modes of transport (in line with the EU Sustainable Urban Mobility Plans concept and the national strategy for the transition to a more sustainable public transport system); and the further promotion of anaerobic digestion of animal waste and increased biogas recovery in the waste sector. Table 5 provides a summary of the reported information on the PaMs of Cyprus for the WEM and WAM scenarios, where available.

48. The projections show that existing PaMs will not be sufficient for Cyprus to reach its 2030 and 2050 targets. Therefore, alongside increasing the ambition of existing PaMs and ensuring their effective implementation, the Party is working to identify new PaMs as well as to address the challenges posed by ensuring finance for any new PaMs and allowing for the time needed to establish the institutional agreements under which they will be implemented. While focusing on emission reduction measures, Cyprus is also considering measures for carbon sequestration, such as CCS and activities to increase removals in the LULUCF sector.

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

<i>Sector</i>	<i>Key PaMs</i>	<i>Estimated mitigation impact in 2020 (kt CO₂ eq)</i>	<i>Estimated mitigation impact in 2030 (kt CO₂ eq)</i>
Energy ^a			
Energy supply and renewable energy	Promotion of natural gas and RES for electricity	NE	314/545
	Support scheme for the installation or replacement of solar water heaters in households	NE	NE
	Support schemes through the National Fund for Renewable Energy and Energy Efficiency for promoting energy efficiency investments in the residential and public sectors and energy audits in small and medium-sized enterprises	NE	NE
Transport	Self-consumption of electricity from RES	NE	NE
	Shift of modal share from car journeys to sustainable modes of transport (implementation of Sustainable Urban Mobility Plans)	NE	NE
IPPU	Use of buses and cars with low or zero emissions	NE	NE
	Development of a proper recovery system for F-gases in equipment	NE	20.0/125
Agriculture	Promotion of anaerobic digestion for the treatment of animal waste	NE	0.07/9.48
LULUCF	Tree planting along urban and intercity roads	NE	NE
Waste	Sorting of municipal solid waste at source	NE	-4.1/-4.1
	Anaerobic digestion at biogas facilities	NE	-0.04/-0.04
	Biogas recovery from solid waste disposal sites (deep unmanaged and managed)	NE	107/160
	Increased number of households connected to central systems for wastewater treatment and discharge	NE	24/24
	Increase in anaerobic treatment, and an annual increase in biogas recovery of 1 per cent from 2025	NE	0.06/2.1

Sources: The values for the estimated mitigation impact in 2030 are from the NC8 (table 4.6); no such impacts are reported in CTF table 3. The list of priority measures includes information from the BR5.

Note: The estimated mitigation impacts are estimates of emissions of CO₂ eq avoided in a given year as a result of the implementation of mitigation actions under the WEM and WAM scenarios.

^a The impacts of PaMs for the energy sector are provided in aggregate in the NC8 (table 4.6).

49. In the energy sector, supply-side measures are highly dependent on infrastructure projects for energy interconnectivity and storage. These measures include expanding natural gas use in the internal market for electricity production through the newly constructed LNG import terminal; further promoting RES through, for example, support schemes for the installation of PV and solar thermal heating systems and a mandatory obligation for a 25 per cent share of RES in energy consumption of new houses; and promoting biomass and alternative fuels in industry. The ERT identified the LNG import terminal measure as being of particular interest. This measure is considered crucial by Cyprus in transitioning to a low-carbon energy system, and its short-term positive impacts on the economy and the environment are evident in the WEM and WOM scenario projections. However, the Party is mindful of the long-term implications of establishing a liquefaction facility considering the energy requirements of its operation, which will have an impact on GHG emissions.

50. The installation of solar water heaters stands out as a notable success story in Cyprus, with a share of 92 per cent of households and over 50 per cent of hotels equipped with this sustainable technology. Anaerobic digestion and, more broadly, the conversion of waste into energy (biogas and biofuel) is being explored as an innovative measure for district heating, including for heating of hotels. The use of biofuels in aviation, for which EU funding is available via a green fuel funding initiative, are also being considered.

51. On the demand side, Cyprus has been actively promoting energy efficiency in buildings through support schemes for investments in energy efficiency measures since 2006. The measure has proven to be effective since its implementation. The Government of Cyprus continues to allocate an annual budget for these support schemes. Recently implemented measures in energy efficiency have focused on reducing distribution losses within electricity infrastructure. Efforts have also been made to promote the installation of more efficient technologies for water distribution, cleaning, pumping and desalination.

52. Cyprus reported its plans for decarbonizing the transport sector with estimated sectoral mitigation impacts under the WEM and WAM scenarios of 1,653.00 and 1,531.45 kt CO₂ eq respectively in 2030 and 126.00 and 28.69 kt CO₂ eq respectively in 2050 compared with the level of emissions of 1,916.34 kt CO₂ eq in 2020. The measures in the transport sector are strongly focused on the electrification of the car and bus fleet and the shift to greener modes of transport such as public transport, cycling and walking. These measures are supported by financial incentives (for electric vehicles) and taxes (in the form of registration fees and annual circulation taxes). According to the projections for the sector, by 2030, 11 per cent of passenger cars will be electric and 9 per cent hybrid, and 7 per cent of buses will be electric. However, an impact assessment of transport PaMs reflects uncertainty in the feasibility of electrification, in part because of the uncertainty related to the capacity of the national grid to support this transition.

53. The Sustainable Urban Mobility Plans of Limassol and Larnaca include costed PaMs for promoting the modal shift from passenger cars, which constituted 90 per cent of the vehicle fleet in 2020, to sustainable modes of transport. Based on the plans for these two cities, which were expanded to cover the national level, it is assumed that a modal shift to 75 per cent cars, 13 per cent public transport, and 12 per cent walking or cycling can be achieved by 2030.

54. The waste sector has been identified as having the second largest mitigation potential, after the energy sector. The latest national Municipal Waste Management Plan (for 2022–2028) and the strategy for municipal solid waste management contain quantitative and qualitative targets and specific measures and actions to achieve them, such as the promotion of anaerobic digestion and composting for organic waste. Cyprus also aims to improve waste management techniques (using sorting, recycling (e.g. at least 55, 60 and 65 per cent of municipal waste by weight recycled by 2025, 2030 and 2035 respectively) and biogas recovery) and to reduce the amount of landfilled waste. Emissions from wastewater treatment and discharge decreased by 44 per cent between 1990 and 2020 mainly owing to the shift from using septic tanks to centralized aerobic treatment systems for the treatment of domestic wastewater, a shift which is projected to continue, which aside from reducing the GHG emissions has a positive impact on the well-being of the population.

55. The only measure for the IPPU sector is linked to F-gas recovery from equipment. The measure is based on the EU F-gas regulation, which has been translated by Cyprus into a 5 and 10 per cent recovery under the WEM and WAM scenarios respectively by 2030. The promotion of anaerobic digestion for the treatment of animal waste will support the country in developing clean energy sources (which is an overarching, cross-sectoral measure for Cyprus) and reducing GHG emissions from agriculture. The Party also intends to increase its carbon sinks through promoting afforestation. The I Plant for Climate campaign implemented by the Department of Forests (under MARDE) has the aim of planting about 70,000 trees in 2020 and building on that number to reach 300,000 trees planted per year in 2030.

2. Assessment of adherence to the reporting guidelines

56. The ERT assessed the information reported in the NC8 and BR5 of Cyprus and identified issues related to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BRs. The findings are described in tables I.1 and II.2.

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

(a) Technical assessment of the reported information

57. In its NC8, Cyprus reported that the implementation of the Kyoto Protocol is underpinned by its commitments as an EU member State. The overall responsibility for climate change policymaking lies with MARDE, and a number of national institutions are involved in policymaking, as well as policy implementation, such as the Ministry of Energy, Commerce, Industry and Tourism, the Ministry of Transport, Communications and Works and the Ministry of Finance.

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

59. The Party has arrangements and enforcement procedures to meet its commitments under the Kyoto Protocol, including procedures for addressing non-compliance. These are outlined in the national policies, strategies and plans. The national governance system (see para. 38 above) has the responsibility of proposing, adopting and implementing measures related to energy and climate change, along with taking corrective action if any of the measures are not implemented in a timely and efficient manner.

60. Cyprus has provisions in place to make information on legislative arrangements and administrative procedures related to compliance and enforcement publicly accessible, such as on the websites of the Department of Environment (e.g. national GHG inventories, legislation, EU ETS) and Ministry of Energy, Commerce, Industry and Tourism (e.g. national strategy and policies for renewable energy). Information on GHG emissions (inventory, projections, measures to reduce them) is also available on relevant websites. Information on Cyprus's commitment under the Kyoto Protocol and PaMs implemented to attain this commitment is publicly available in relevant EU reports and the NCs and BRs.

61. Cyprus has national legislative arrangements and administrative procedures in place that seek to ensure that the implementation of activities under Article 3, paragraph 3, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contributes to the conservation of biodiversity and the sustainable use of natural resources. The main legal instrument for the protection of biodiversity and ecosystems is the Nature and Wildlife Protection and Management Law, which includes provisions on habitat and species conservation and non-deterioration obligations. This law is supported by other documents, such as the National Biodiversity Strategy and the Forest Law.

(b) Assessment of adherence to the reporting guidelines

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

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

(a) Technical assessment of the reported information

63. In the NC8 Cyprus reported information on how it strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts on other Parties, especially developing country Parties. Cyprus noted that as a small island country that is economically dependent on services, its PaMs have no serious adverse effects on other Parties.

64. The NC8 includes information on how Cyprus promotes and implements the decisions of ICAO and IMO to limit emissions from aviation and marine bunker fuels. Cyprus, together with all other EU member States, participated in the voluntary pilot phase of global Carbon

Offsetting and Reduction Scheme for International Aviation. Cyprus also supports the ambitious targets of the EU for reducing CO₂ emissions in the maritime sector.

65. Further information on how Cyprus strives to implement its commitments under Article 3, paragraph 14, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties was reported in the 2023 annual submission (chap. 13). Cyprus reported on activities under the EU framework for assessing impacts on third countries. The Party reported information on what it prioritized in implementing its commitments under Article 3, paragraph 14, including the progressive reduction or phase-out of market imperfections, fiscal incentives, tax and duty exemptions, and subsidies that run counter to the objective of the Convention and the application of market instruments.

(b) Assessment of adherence to the reporting guidelines

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

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

1. Technical assessment of the reported information

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

Table 6

Summary of information on emissions covered by the European Union effort-sharing decision annual emission allocation and use of units from market-based mechanisms by Cyprus

(kt CO₂ eq)

<i>Year</i>	<i>ESD emissions</i>	<i>AEA</i>	<i>Use of units from market-based mechanisms</i>	<i>AEAs transferred to (-) or from (+) other Parties</i>	<i>Annual AEA surplus/deficit</i>	<i>Cumulative AEA surplus/deficit</i>
2013	3 938.12	5 919.07	NA	NA	1 980.95	1 980.95
2014	3 924.86	5 922.56	NA	NA	1 997.70	3 978.65
2015	4 060.62	5 926.04	NA	NA	1 865.42	5 844.07
2016	4 111.44	5 929.52	NA	NA	1 818.08	7 662.15
2017	4 270.89	4 196.63	NA	NA	-74.26	7 587.89
2018	4 162.76	4 122.84	NA	NA	-39.92	7 547.97
2019	4 377.56	4 049.04	NA	NA	-328.52	7 219.45
2020	4 243.16	3 975.25	NA	NA	-267.91	6 951.54

Sources: Cyprus's BR5 and BR5 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 that annual or cumulative ESD emissions were higher than the corresponding AEA or cumulative AEAs.

2. Assessment of adherence to the reporting guidelines

68. The ERT assessed the information reported in the BR5 of Cyprus and identified an issue relating to transparency, and thus adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table II.3.

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

69. In assessing the Party's contribution towards achievement of the 2020 joint EU target on the basis of the information reported in its BR5, the ERT noted that, under the EU 2020 climate and energy package, Cyprus committed to reducing its emissions under the ESD to 5 per cent below the 2005 level by 2020 (see para. 32 above). This target has been translated into binding quantified AEAs for 2013–2020. In 2020 Cyprus's ESD emissions were 9.3 per cent (267.91 kt CO₂ eq) above the AEA. Cyprus has had emissions above the respective AEAs since 2017 and a cumulative surplus of 6,951.54 kt CO₂ eq with respect to its AEAs between 2013 and 2020. The ERT noted that the Party did not make use of units from market-based mechanisms in 2020.

70. The ERT noted that the Party reported that the total GHG emissions excluding LULUCF of the EU and including the use of units from market-based mechanisms do not exceed the emission level corresponding to the target in 2020, and thus that the EU has achieved its joint target. Therefore, the ERT concluded that, on the basis of the information reported in the BR5 and provided during the review, Cyprus has met its 2020 commitment under the Convention through its contribution to achieving the joint EU target. The ERT noted that the Party's ESD emissions in 2020 exceed the AEA for 2020. The ERT noted that, to achieve its target under the ESD, Cyprus used its surplus AEAs from prior years.

71. The ERT noted that Cyprus overachieved its RES target for 2020, with a share of RES of 16.8 per cent in gross final energy consumption (the target was 13 per cent). Cyprus also overachieved its energy efficiency target for 2020, achieving 135 per cent cumulative energy savings.

F. Projections

1. Projections overview, methodology and results

(a) Technical assessment of the reported information

72. Cyprus reported in its BR5 and NC8 updated projections for 2030–2050 relative to actual inventory data for 2020 under the WEM scenario. The WEM scenario reported by Cyprus includes PaMs implemented and adopted until 2021.

73. In addition to the WEM scenario, Cyprus reported the WAM and WOM scenarios. The WAM scenario includes planned PaMs, while the WOM scenario excludes all PaMs implemented, adopted or planned after 2021 and assumes a slower implementation of existing PaMs than the WEM scenario. Cyprus provided a definition of its scenarios, explaining that it used 2021 as the base year for all scenarios reported in the NC8 and BR5 (the base year is adjusted for every submission to the date of the latest inventory submission). Any activities implemented before 2021 are included in the WOM scenario. These activities and all measures with status adopted or expected to be implemented after 2021 are also included in the WEM scenario. All measures with status planned after 2021 are included in the WAM scenario. The definitions indicate that the scenarios were prepared in accordance with the UNFCCC reporting guidelines on BRs. A complete list of the measures included under the WEM and WAM scenarios is provided in the NC8 (table 4.3).

74. 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 CO₂, CH₄, N₂O, PFCs, HFCs and SF₆ (treating PFCs and HFCs collectively in each case) for 2025, 2030, 2035, 2040, 2045 and 2050. The projections are also provided in an aggregated format for each sector and for a Party total using GWP values from the AR4. Cyprus reported on factors and activities affecting emissions for each sector.

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

75. The methodology used for the preparation of the projections is identical to that used for the preparation of the emission projections for the NC7, except for the energy sector, for which a different methodology was used. Cyprus provided information on changes since the submission of its NC7 in the assumptions, methodologies, models and approaches used for the projection scenarios. The Party provided details on the two new models used for the energy sector projections: a macroeconomic model for projecting final energy demand and a cost-optimization model (OSeMOSYS-Cyprus) for estimating the technology and energy mix needed to satisfy the projected demand. GHG emissions for the sectors other than energy continued to be projected using spreadsheet models that calculate emissions on the basis of projected activity data, emission factors and sector-specific assumptions.

76. To prepare its projections, Cyprus relied on key underlying assumptions relating to population, GDP, international fuel prices and the EU ETS carbon price, among others. Detailed information about the key variables and assumptions used in the preparation of the projection scenarios was provided by the Directorate on Economic Policy and European Affairs of the Ministry of Finance. The assumptions were updated on the basis of the most recent economic development known at the time of the preparation of the projections. The updated assumptions have not experienced the same evolution, some assumptions such as economic growth have been revised downward and others such as the price of fuels have been revised upward. Updates made since the NC7 reflect the changes arising from the coronavirus disease 2019 pandemic, the war in Ukraine, the EU commitment set out in the Fit for 55 package and the increased competitiveness of RES. The Party also provided assumptions for sector-level activity data, such as fuel use per sector and waste composition (waste sector). Sensitivity analyses were not conducted for any assumptions.

(c) Results of projections

77. The projected emission levels under different scenarios and information on the quantified economy-wide emission reduction target are presented in table 7 and figure 1.

Table 7
Summary of greenhouse gas emission projections for Cyprus

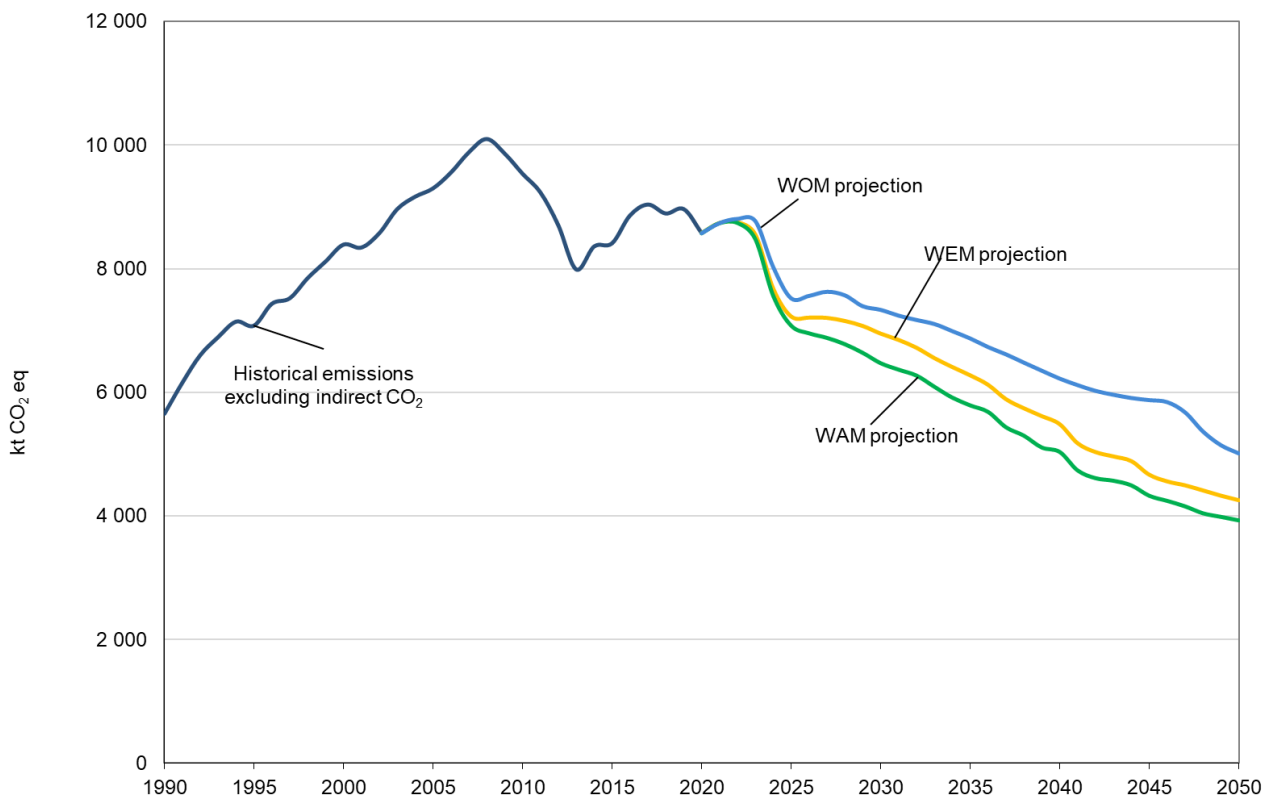
	<i>GHG emissions (kt CO₂ eq/year)</i>	<i>Change in relation to 1990 level (%)</i>	<i>Change in relation to 2020 level (%)</i>
Inventory data 1990 ^a	5 647.45	NA	NA
Inventory data 2020 ^a	8 574.70	NA	NA
WOM projections for 2030	7 335.58	29.9	-14.5
WEM projections for 2030	6 948.49	23.0	-19.0
WAM projections for 2030	6 472.70	14.6	-24.5
WOM projections for 2050	5 012.59	-11.2	-41.5
WEM projections for 2050	4 253.21	-24.7	-50.4
WAM projections for 2050	3 928.64	-30.4	-54.2

Sources: Cyprus's NC8 and BR5 CTF table 6. Updated projections were provided by Cyprus during the review.

Note: The projections are of GHG emissions excluding LULUCF and excluding indirect CO₂ emissions.

^a Data are from the April 2023 annual submission, as reported by the Party in its NC8 and BR5 and during the review. The values do not match the values reported in table 4 above, which come from the May 2023 annual submission.

Figure 1
Greenhouse gas emission projections reported by Cyprus



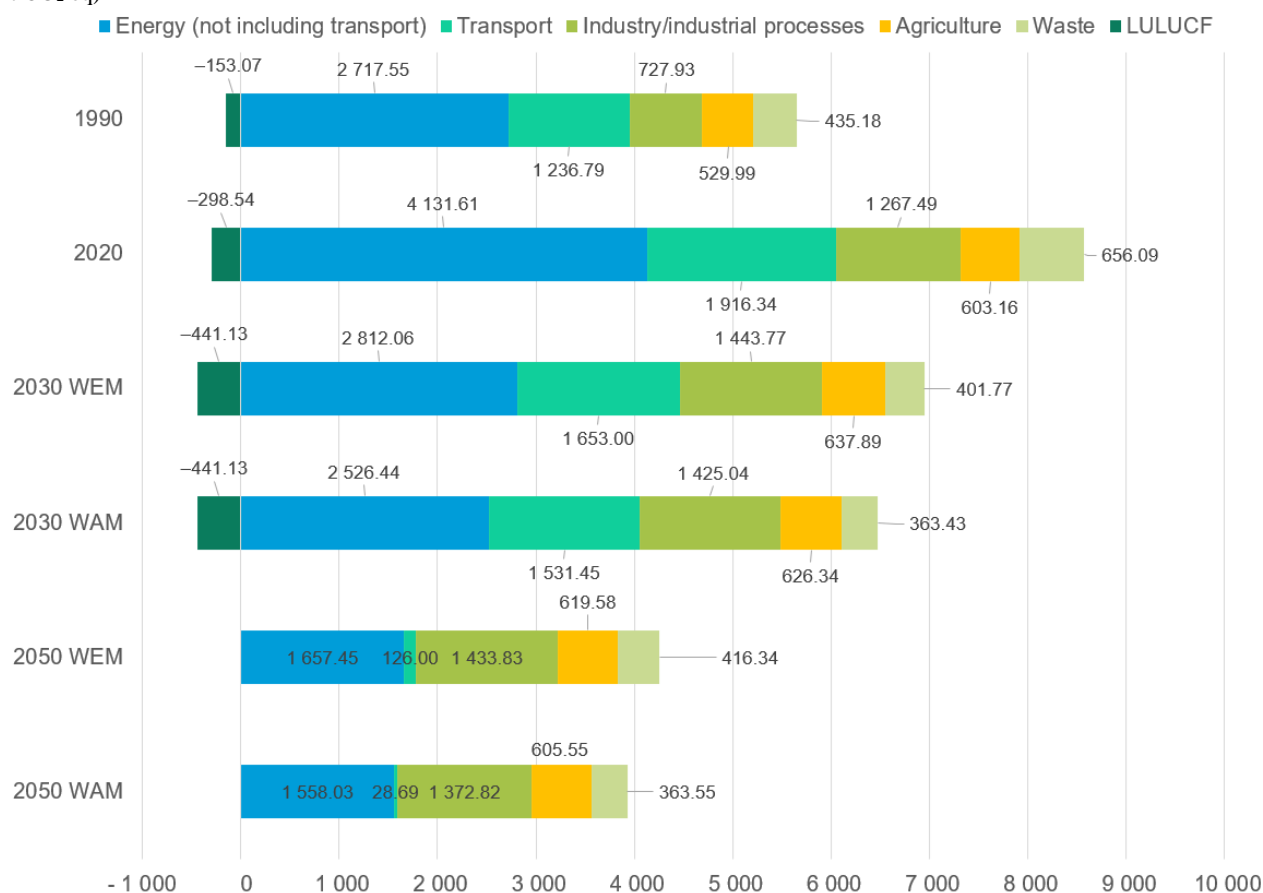
Sources: Cyprus's NC8 and BR5 CTF table 6 (total GHG emissions excluding LULUCF). Updated projections were provided by Cyprus during the review.

78. Cyprus's total GHG emissions excluding LULUCF are projected under the WEM scenario to increase by 23.0 per cent compared with the 1990 level and decrease by 19.0 per cent compared with the 2020 level in 2030. In 2050, under the same scenario, emissions excluding LULUCF are projected to decrease by 24.7 and 50.4 per cent respectively compared with the 1990 and 2020 levels. When including LULUCF, total GHG emissions are projected under the WEM scenario to increase by 18.4 per cent and decrease by 35.1 per cent compared with the 1990 level in 2030 and 2050 respectively. Under the WAM scenario, emissions excluding LULUCF are projected to increase by 14.6 per cent compared with the 1990 level and decrease by 24.5 per cent compared with the 2020 level in 2030. In 2050, under the same scenario, emissions are projected to decrease by 30.4 and 54.2 per cent respectively compared with the 1990 and 2020 levels. The sudden drop in 2024 illustrated in figure 1 across both scenarios is attributable to the introduction of natural gas.

79. Cyprus presented the WEM and WAM scenarios by sector for 2030 and 2050, as summarized in figure 2 and table 8.

Figure 2

Greenhouse gas emission projections for Cyprus presented by sector

 (kt CO₂ eq)


Source: Cyprus's BR5 CTF table 6. Updated projections were provided by Cyprus during the review.

Table 8

Summary of greenhouse gas emission projections for Cyprus presented by sector

Sector	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	1990	2030		2050		1990–2030		1990–2050	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
Energy (not including transport)	2 717.55	2 812.06	2 526.44	1 657.45	1 558.03	3.5	-7.0	-39.0	-42.7
Transport	1 236.79	1 653.00	1 531.45	126.00	28.69	33.7	23.8	-89.8	-97.7
Industry/industrial processes	727.93	1 443.77	1 425.04	1 433.83	1 372.82	98.3	95.8	97.0	88.6
Agriculture	529.99	637.89	626.34	619.58	605.55	20.4	18.2	16.9	14.3
LULUCF	-153.07	-441.13	-441.13	-689.60	-945.65	188.2	188.2	350.5	517.8
Waste	435.18	401.77	363.43	416.34	363.55	-7.7	-16.5	-4.3	-16.5
Other	-	-	-	-	-	-	-	-	-
Total GHG emissions excluding LULUCF	5 647.45	6 948.49	6 472.70	4 253.21	3 928.64	23.0	14.6	-24.7	-30.4

Source: Cyprus's BR5 CTF table 6. Updated projections were provided by Cyprus during the review.

80. According to the projections reported for 2030 under the WEM scenario, emissions are expected to increase in most sectors between 1990 and 2030, with the most significant increases occurring in the IPPU (98.3 per cent) and transport (33.7 per cent) sectors. The only

decrease in emissions is expected for the waste sector (7.7 per cent). The pattern of projected emissions reported for 2050 under the same scenario is different. Increases are still expected in the IPPU (97.0 per cent) and agriculture (16.9 per cent) sectors, but there are significant decreases in the transport (89.8 per cent) and energy (39.0 per cent) sectors.

81. If additional measures are considered (i.e. under the WAM scenario), the patterns of emissions by 2030 by sector are similar to those for the WEM scenario. Reductions are expected to occur between 1990 and 2030 in the waste (16.5 per cent) and the energy (not including transport) (7.0 per cent) sectors, whereas increases are expected in the IPPU (95.8 per cent), transport (23.8 per cent) and agriculture (18.2 per cent) sectors. The patterns of projected emissions by sector reported for 2050 for the WAM scenario are the same as those reported for the WEM scenario. However, a more significant declining trend in emissions is observed in the transport (97.7 per cent), energy (not including transport) (42.7 per cent) and waste (16.5 per cent) sectors between 2021 and 2050 under the WAM scenario as a result of planned measures.

82. Cyprus presented the WEM and WAM scenarios by gas for 2030 and 2050, as summarized in table 9.

Table 9

Summary of greenhouse gas emission projections for Cyprus presented by gas

Gas ^a	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	1990	2030		2050		1990–2030		1990–2050	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
CO ₂	4 644.86	5 477.18	5 077.18	2 843.17	2 655.17	17.9	9.3	–38.8	–42.8
CH ₄	775.92	802.00	751.00	776.00	709.00	3.4	–3.2	0.0	–8.6
N ₂ O	223.94	313.60	307.50	287.20	278.90	40.0	37.3	28.2	24.5
HFCs	NO, NE	339.00	321.00	330.00	271.00	NA	NA	NA	NA
PFCs	NO	NO	NO	NO	NO	NA	NA	NA	NA
SF ₆	2.73	16.59	16.00	16.12	13.00	507.5	485.9	490.3	376.0
NF ₃	NO	NO	NO	NO	NO	NA	NA	NA	NA
Total GHG emissions without LULUCF^b	5 647.45	6 948.37	6 472.68	4 252.49	3 927.07	23.0	14.6	–24.7	–30.5

Source: Cyprus's BR5 CTF table 6. Updated projections were provided by Cyprus during the review.

^a Cyprus did not include indirect CO₂ emissions in its projections.

^b There are minor differences between the total values when calculated as a sum per sector and per gas.

83. Under the WEM scenario, significant increases are projected in emissions of CO₂ (17.9 per cent) and N₂O (40.0 per cent) and a small increase in CH₄ emissions (3.4 per cent) between 1990 and 2030. Under the same scenario for 2050, CO₂ emissions decrease (38.8 per cent), CH₄ emissions stay the same (0 per cent) and N₂O emissions increase (28.2 per cent).

84. If additional measures are considered (i.e. under the WAM scenario), the patterns of emissions by 2030 by gas are similar to those for the WEM scenario, with increases in emissions of CO₂ (9.3 per cent) and N₂O (37.3 per cent) compared with the 1990 level. CH₄ emissions are expected to decrease by 2030 by 3.2 per cent. Under the same scenario for 2050, CO₂ emissions decrease (42.8 per cent), CH₄ emissions decrease (8.6 per cent) and N₂O emissions increase (24.5 per cent).

85. The ERT noted that according to the latest projections provided during the review the Party will be not able to meet its target of a 32 per cent reduction in emissions by 2030 under either the WEM scenario or the WAM scenario (e.g. under the WAM scenario a 30.4 per cent reduction in total emissions in 2030 is projected compared with the 2005 level with only a 15.7 per cent reduction in emissions for sectors covered under the ESR). New PaMs will need to be considered, and are indeed being planned as part of the revision of the NECP for 2024.

(d) Assessment of adherence to the reporting guidelines

86. The ERT assessed the information reported in the NC8 and BR5 of Cyprus and identified issues relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BRs. The findings are in tables I.2 and II.4.

2. Assessment of the total effect of policies and measures**(a) Technical assessment of the reported information**

87. In its NC8 Cyprus presented the estimated and expected total effect of implemented and adopted PaMs and an estimate of the total effect of its PaMs, in accordance with the WEM scenario, compared with a situation without such PaMs. Information is presented in terms of GHG emissions avoided or sequestered, by gas (on a CO₂ eq basis), in 2025, 2030, 2035, 2040, 2045 and 2050. It also presented relevant information on factors and activities for each sector for 1990–2050.

88. Cyprus reported in its NC8 the total estimated effect of its implemented and adopted PaMs for 2025, 2030, 2035, 2040, 2045 and 2050. The estimated effect was provided separately for sectors covered by the EU ETS and those covered by the ESR. The total estimated effect of adopted and implemented PaMs is 387.09 kt CO₂ eq in 2030 and 759.38 kt CO₂ eq in 2050. The total estimated effect of planned PaMs is 475.79 kt CO₂ eq in 2030 and 324.57 kt CO₂ eq in 2050. According to the information reported in its NC8 and the source Excel file provided during the review, PaMs implemented in the energy sector will deliver the largest emission reductions. Table 10 provides an overview of the total effect of PaMs as reported by Cyprus.

Table 10

Projected effects of Cyprus's planned, implemented and adopted policies and measures in 2030 and 2050(kt CO₂ eq)

Sector	2030		2050	
	Effect of implemented and adopted measures	Effect of planned measures	Effect of implemented and adopted measures	Effect of planned measures
Energy (without transport)	245.40	285.62	528.28	99.42
Transport	0.61	121.55	5.14	97.31
Industry/industrial processes	44.22	18.73	88.69	61.01
Agriculture	0.84	11.55	9.19	14.03
Land-use change and forestry	0.00	0.00	106.07	256.06
Waste management	96.02	38.34	128.09	52.79
Total	387.09	475.79	759.38	324.57

Source: Cyprus's BR5 CTF table 6. Updated projections were provided by Cyprus during the review.

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

(b) Assessment of adherence to the reporting guidelines

89. The ERT assessed the information reported in the NC8 of Cyprus and identified issues relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table I.2.

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

(a) Technical assessment of the reported information

90. In the NC8 Cyprus provided information on how its use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action. The ERT noted that Cyprus did not use market-based mechanisms to meet its Kyoto Protocol target.

(b) Assessment of adherence to the reporting guidelines

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

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

92. Cyprus 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, Cyprus provided information in its NC8 and BR5 and during the review on its provision of support to developing country Parties. For example, Cyprus provided information on the EMME Climate Change Initiative, the aim of which was to develop a Regional Climate Action Plan to address the specific needs and challenges EMME countries face and to advance mitigation actions in accordance with the Paris Agreement. The Regional Climate Action Plan is being developed to be easily adaptable by governments and other stakeholders of the region and used as a guide for the countries of the EMME region to develop their own national climate action plans. The Regional Climate Action Plan was discussed and finalized at a Ministerial Summit hosted by Cyprus on 7 June 2022 and was approved by the Heads of State of the countries involved at a regional summit held on the margins of the United Nations Climate Change Conference in Sharm el-Sheikh, Egypt, in November 2022.

93. The ERT commends Cyprus for reporting on its support to developing country Parties and suggests that it continue to do so in future NCs.

H. Vulnerability assessment, climate change impacts and adaptation measures

1. Technical assessment of the reported information

94. In its NC8 Cyprus provided information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and an outline of the action taken to implement Article 4, paragraph 1(b), of the Convention with regard to adaptation. Cyprus provided a description of climate change vulnerability and impacts on biodiversity, infrastructure, energy, human health, forestry, agriculture, water resources and tourism and highlighted the adaptation response actions taken and planned at different levels of government. The vulnerability assessment conducted for the NC8 is similar to the one conducted for the NC7, however, Cyprus included updated information about observed patterns up until 2021 for the main climatic variables (temperature, precipitation) and for the frequency and duration of extreme weather events. In addition, CARE-C, the dedicated research centre for climate change for the EMME region, founded in January 2020, developed updated projections for the main climatic variables for the region and Cyprus. The Party examined the predictions of future climate change in two periods: near future (2021–2050) and distant future (2071–2100). The period 2021–2050 was examined in detail to respond to the needs of policymakers and other stakeholders in their assessments of impacts and vulnerability and planning of adaptation and mitigation measures.

95. A peculiarity of Cyprus in the context of climate change is its location in one of the most sensitive hotspots in the world. It experiences extreme climatic conditions such as high temperature and low precipitation, leading to frequent droughts. The increase over the last 100 years in the mean annual air temperature of the atmosphere – about 1.8 °C in Nicosia and 2.9 °C in Limassol – is higher than the rise in the global mean surface temperature. The vulnerability assessment presented in the NC8 indicates that regional climate models consistently predict the overall warming and drying of the country, which will have significant impacts on human health, energy use and water resources, as well as on socioeconomic factors.

96. Cyprus has addressed adaptation matters through the adoption of the National Adaptation Strategy and Action Plan in May 2017, which provided direction to government agencies on enhancing preparedness for climate change. MARDE is the central body coordinating the adaptation policymaking process and it led the preparation and adoption of the National Adaptation Strategy and Action Plan. During the review, the Party informed the ERT that a revision of the Strategy has been initiated, which will include a new vulnerability assessment.

97. Since 2017, Cyprus has been implementing some of the 60 measures prescribed in the National Adaptation Strategy. Among the most significant are strengthening efficient water use in buildings, agriculture and industry; reinforcing wildfire prevention measures; and protecting, preserving and managing natural wetlands. A monitoring strategy was developed to complement the National Adaptation Strategy. The monitoring of the progress of implementation of adaptation measures is coordinated by the Department of Environment but involves all relevant stakeholders. Monitoring reports on progress of implementation have been produced every year since 2018 and they are made publicly available. The reports include examples of successfully implemented measures, such as the introduction of technology-driven solutions (drones) in fire protection and the installation and monitoring of water supply meters.

98. Some adaptation actions are being undertaken at the sectoral level, for example by the Agricultural Research Institute and the Department of Forests. There are also a number of instances of cooperation of local and municipal authorities, community groups and private local enterprises on adaptation action.

99. Table 11 summarizes the information on vulnerability and adaptation to climate change presented in the NC8 of Cyprus.

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

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Agriculture and food security	<p>Vulnerability: Reduction in crop yields and crop production, decline in soil fertility, damage to crops from extreme weather events, reduction in livestock productivity, increase in pests and diseases, and increase in costs of livestock farming.</p> <p>Adaptation: Increasing water availability for irrigation from government waterworks and by applying on-farm practices; destroying weeds by mechanical rather than chemical means; improving animal welfare under adverse weather conditions by increasing the amount of shade available; promoting the cultivation and farming of indigenous and locally adapted plants and animals; and improving outdoor and indoor conditions for livestock through financial support provided by the EU Rural Development Programme for Cyprus.</p>
Biodiversity and natural ecosystems	<p>Vulnerability: Biodiversity loss due to projected changes in climate combined with land-use change and the spread of exotic or alien species likely limiting the capability of some species to migrate, in turn leading to impacts on the biodiversity of terrestrial, marine and freshwater ecosystems.</p> <p>Adaptation: Implementing research activities on assessing the impacts of climate change on flora, fauna and habitat types in the country; developing adaptation plans for habitats and species in protected areas, primarily areas of the Natura 2000 protected areas network; conserving and restoring highly vulnerable habitats such as wetlands and dunes; developing agri-environmental measures to address climate change impacts; and re-evaluating forestry measures.</p>

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Forests	<p>Vulnerability: Damage to forests caused by fires as well as by insect attacks and diseases leading to the dieback of tree species.</p> <p>Adaptation: Implementing the already formulated forest policy and National Forest Programme; updating forest-related legislation with a focus on environmental services and recreation rather than wood production; and implementing measures to eliminate forest fires that focus on prevention, pre-suppression, detection and suppression.</p>
Human health	<p>Vulnerability: Direct impacts on public health such as deaths and health problems related to heatwaves and high temperatures and deaths and injuries from floods, landslides and fires; and indirect impacts on public health such as vector-borne, rodent-borne, waterborne and food-borne diseases, climate-related effects on nutrition, and diseases related to air pollution.</p> <p>Adaptation: Forecasting, issuing warnings for and providing advice for self-protection against heatwaves; preventing the occurrence of flooding events by developing and expanding separate drainage systems for stormwater collection; conducting information campaigns on fire prevention and protection; mapping fire danger; and installing fire protection systems in areas where large numbers of people concentrate.</p>
Infrastructure and economy	<p>Vulnerability: Vulnerability of infrastructure to urban and coastal flooding, with coastal flooding being caused by storm surges or sea level rise and affecting mainly the highly developed coastal infrastructure.</p> <p>Adaptation: Reducing the impact of floods by implementing flood protection measures, for example hard coastal defence works, fishing shelters and artificial reefs for coastal flood protection, and dams and sustainable urban drainage systems for urban flood protection.</p>
Water resources	<p>Vulnerability: Reduced water availability for domestic water supply and irrigation in mountain areas, and water stress leading to problems in meeting water demand for drinking water supply and other purposes, such as agriculture, tourism and industry.</p> <p>Adaptation: Implementing measures to increase freshwater supply; diversifying water resources; decreasing water consumption; introducing economic and legal instruments such as subsidies, water pricing and overconsumption penalties; and implementing improved forecasting, as well as monitoring, information and warning systems.</p>

100. Cyprus provided a detailed description of international adaptation activities, including information on cooperation with developing countries on adaptation under the EMME Climate Change Initiative (see paras. 92 and 94 above), which has clear scientific and intergovernmental cooperation components. Furthermore, the Maritime Regions Cooperation for the Mediterranean project on adaptation in coastal areas through an integrated Mediterranean maritime policy saw the Larnaca District Development Agency partnering with representatives of 14 regions of five countries (Cyprus, France, Greece, Italy and Spain). The project focuses on those constituents of maritime policy that have a strong transnational dimension, namely integrated coastal zone management, pollution (including small- and medium-scale accidental coastal pollution), adaptation to climate change in coastal areas, fisheries and coastal and maritime data management.

2. Assessment of adherence to the reporting guidelines

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

I. Research and systematic observation

1. Technical assessment of the reported information

102. In its NC8 Cyprus provided information on its general policy and funding relating to research and systematic observation and both domestic and international activities. Cyprus also provided information on the identification of opportunities for and barriers to free and

open international exchange of data and information and on action taken to overcome such barriers.

103. Cyprus has implemented and planned international and domestic policies and programmes on climate change research, systematic observation and climate modelling that aim to advance capabilities to predict and observe the physical, chemical, biological and human components of the Earth's system over space and time. The main policy document in the area of research and innovation is the Smart Specialisation Strategy for Cyprus, which was approved by the Council of Ministers in March 2015. The main tool for implementing the Strategy's Action Plan for 2015–2022, which included measures amounting to EUR 144 million, was the National Framework Programme for Research and Innovation RESTART 2016–2020, implemented by the Research and Innovation Foundation. RESTART programmes offered ample opportunities to all local stakeholders, including universities and research organizations, to establish consortiums for implementing projects, thus nurturing closer links among these stakeholders. During the review, Cyprus provided information on 32 projects funded through RESTART, focused mainly in the energy sector. The Party also provided information on CARE-C, which is conducting research on topics such as sea level rise in Cyprus and is collaborating with EU member States on projects related to maritime transport and drivers of climate warming.

104. In terms of activities related to systematic observation, Cyprus reported on national plans, programmes and support for ground- and space-based climate observing systems, including satellite and non-satellite climate observation. The Party provided information on atmospheric, ocean and terrestrial observations. Cyprus also reported on challenges related to the maintenance of a consistent and comprehensive observation system. Since the NC7, CARE-C has further developed its comprehensive atmospheric network, which complements the networks operated by the Department of Meteorology for monitoring meteorological parameters and the Department of Labour Inspection for monitoring air quality. With the atmospheric network, CARE-C aims to establish the first ever open access long-term observations of key climate forcers in the EMME region in order to better analyse emissions of GHGs and air pollutants and thus better support the development of regional air quality models that enable accurate prediction and, therefore, better mitigation and adaptation strategies. CARE-C is expected to take advantage of its scientific network to extend the observations of climate forcers in the region with the support of the ministries of environment of Greece, Jordan and Lebanon.

105. The NC8 reflects actions taken to support capacity-building and the establishment and maintenance of observation systems and related data and monitoring systems in developing countries. Cyprus, through CARE-C, aims to develop a comprehensive regional collaboration network; it already supports capacity-building in the EMME region through active collaborations and memorandums of understanding with Egypt, Greece, Israel, Jordan, Kuwait, Lebanon, Qatar and the United Arab Emirates.

2. Assessment of adherence to the reporting guidelines

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

J. Education, training and public awareness

1. Technical assessment of the reported information

107. In its NC8 Cyprus provided information on its actions relating to education, training and public awareness at the domestic and international level. The Party provided information on the general policy on education, training and public awareness; primary, secondary and higher education; public information campaigns; training programmes; education materials; resource or information centres; the involvement of the public and NGOs; and its participation in international activities. Cyprus has included climate change as an intrinsic part of its National Action Plan for Environmental Education, which is considered to be the

most important policy document on environmental education and education for sustainable development in the country. Cyprus is one of the few countries in the world with established curricula and criteria for education on sustainable development.

108. The National Strategy on Education for Sustainable Development is under revision; with it, Cyprus aims to cover 2022–2030 and emphasize the green transition and incorporate the Sustainable Development Goals into formal and informal education. The permanent unit for environmental education for sustainable development is the body responsible for implementing and monitoring the implementation of, as well as revising, the Strategy. The unit works in collaboration with all interested stakeholders and places an emphasis on teachers' professional development in climate change education by offering a series of courses (obligatory and optional) thereon.

109. Since the NC7, Cyprus has advanced in various areas of education. It has developed online lessons, courses and workshops on climate change using digital educational materials and tools for schools, families and communities. Youth empowerment for climate action is highlighted by promoting student programmes on greening school infrastructure (e.g. schoolyards), using renewable sources of energy, supporting local products and strengthening sustainable mobility, among others. An innovative project funded by the EU Horizon 2020 programme and the EU Recovery and Resilience Facility is aiming to transform 55 schools from all educational levels to almost zero energy schools by 2028.

110. One of the notable success stories in Cyprus is the establishment of a national network of environmental education centres by the Ministry of Education, Sport and Youth. These centres are located in areas with different ecosystems that together are representative of the entire country. The network is the most extensive initiative for informal education on the environment and sustainability in Cyprus and the centres are visited by 30,000 students, teachers, professionals and special interest groups annually. Education at the centres goes beyond the traditional classroom setting and actively involves local communities and fosters intergenerational communication.

111. In Cyprus, universities, research centres and NGOs are involved in climate action, including in implementing projects and developing PaMs and national action plans. However, the Party noted during the review that the potential of NGOs in implementing and monitoring the progress of PaMs is still not fully utilized.

112. The Cypriot public has access to environmental information on the websites of relevant ministries and government agencies. Furthermore, the Department of Environment runs information and awareness-raising campaigns on environmental issues; for example, under the annual European Mobility Week campaign it organizes a cycling tour of Nicosia that provides it with the opportunity to present sustainable urban mobility options to local residents.

113. Cyprus is a leading country in education for sustainable development at the international level. The Party chairs the Steering Committee on Education for Sustainable Development and had an intrinsic role in the preparation of the framework for the implementation of the UNECE Strategy for Education for Sustainable Development from 2021 to 2030. Youth empowerment on climate action is considered as a key horizontal priority area of the Strategy. Cyprus also chairs the Mediterranean Committee on Education for Sustainable Development. The country hosted the 9th Environment for Europe Ministerial Conference in 2022, which focused on education for sustainable development and the urgent need for regional cooperation on climate action. Furthermore, the Ministry of Education, Sport and Youth, through bilateral and trilateral collaborations with EMME countries, is developing joint programmes that empower teachers, students and educational institutions in the region to be more active in climate change initiatives.

2. Assessment of adherence to the reporting guidelines

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

III. Conclusions and recommendations

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

116. The information provided in the NC8 includes all elements of the supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. Cyprus reported on the national system, the national registry, supplementarily relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol, PaMs in accordance with Article 2 of the Kyoto Protocol, and domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures. Supplementary information under Article 7, paragraph 1, of the Kyoto Protocol on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol was provided by Cyprus in its 2023 annual submission.

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

118. In its NC8 Cyprus reported on its key national circumstances related to GHG emissions and removals, including legal framework, population trends, and geographical and economical profile. Cyprus's GDP has seen an increasing trend in recent decades, while GHG emissions per capita remained relatively stable, indicating a decoupling of economic growth from GHG emissions. Increasing energy consumption in the tertiary sector has been the primary driver behind the rise in emissions in recent years. At the same time, Cyprus is very vulnerable to climate change and is heavily reliant on external sources of energy. As an expanding economy with ambitious energy and climate goals, the country has trade-offs to consider between its energy and climate agenda and its development plans. Several challenges related to the increase in energy demand and the existing limitation for penetration of RES were highlighted. Cyprus is actively exploring ways to reduce its dependence on imported oil and decrease its GHG emissions.

119. Cyprus's total GHG emissions excluding LULUCF were estimated to be 52.6 per cent above its 1990 level. Emissions peaked in 2008, decreased until 2013 owing to an increase in electricity prices and the effects of the global financial crisis, and since 2013 have shown an increasing trend, aside from a slight dip in 2020 attributable to the coronavirus disease 2019 pandemic. Emissions increased by 2.0 per cent between 2020 and 2021. The changes in total emissions were driven mainly by factors such as economic growth, particularly in the tourism sector, population growth and improved living conditions and related increases in electricity demand, the number of privately owned vehicles, the use of F-gases as substitutes for ozone-depleting substances and waste production per capita. Energy, with emissions of 6,172.40 Gg CO₂ eq (71.2 per cent of total emissions without LULUCF) in 2021, continues to be the largest contributor to total national GHG emissions.

120. As reported in the BR5, under the Convention Cyprus 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 CO₂, CH₄, N₂O, HFCs, PFCs and SF₆, expressed using GWP values from the AR4. Emissions and removals from the LULUCF sector are not included. Under the ESD Cyprus has a target of reducing its emissions by 5 per cent below the 2005 level by 2020.

121. The EU has a joint 2030 emission reduction target of at least 55 per cent below the 1990 level. This will be primarily implemented through the EU ETS and ESR, which have targets to reduce emissions by 2030 by 62 and 40 per cent respectively compared with the 2005 level. Cyprus has longer-term targets of a 32 per cent reduction in emissions in 2030 compared with the 2005 level and carbon neutrality by 2050.

122. The ERT noted that the total GHG emissions of the EU excluding LULUCF and including the use of units from market-based mechanisms do not exceed the emission level corresponding to the target in 2020, and thus that the EU has achieved its joint target. The ERT therefore concluded that Cyprus has met its 2020 commitment under the Convention through its contribution to achieving the joint target of the EU. The ERT noted that the Party met its 2020 ESD target by using the flexibility allowed under the ESD to cover its AEA deficit by using its surplus AEAs from prior years.

123. The GHG emission projections provided by Cyprus in its NC8 and BR5 correspond to the WEM, WOM and WAM scenarios. Under the WEM scenario, emissions in 2030 are projected to be 23.0 per cent above the 1990 level and 19.0 per cent below the 2020 level. In 2050, under the same scenario, emissions excluding LULUCF are projected to decrease by 24.7 and 50.4 per cent respectively below the 1990 and 2020 level. Under the WAM scenario, emissions in 2030 are projected to be 14.6 per cent above the 1990 level and 24.5 per cent below the 2020 level. In 2050, emissions are projected to decrease by 30.4 and 54.2 per cent respectively below the 1990 and 2020 level.

124. Cyprus's main policy framework relating to energy and climate change is the NECP (2020), supplemented by the LT-LEDS (2022). The Party described the mitigation actions that it has implemented to help it achieve its 2020 and longer-term targets, which include promoting a shift in the fuel mix to include a greater share of natural gas and RES, investing in energy efficiency initiatives, supporting a modal shift in transport (to a more efficient bus network and services and use of low- and zero-emission cars), promoting anaerobic digestion of animal and municipal waste, and improving waste management practices. Most of the mitigation measures planned, adopted and implemented by Cyprus focus on the energy sector, in line with its status as the main emitting sector in the country. The projections show that existing PaMs will not be sufficient for Cyprus to reach its 2030 and 2050 targets; therefore, increasing the ambition of existing PaMs and developing additional PaMs are strategies under consideration.

125. Cyprus is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paragraphs 3–5, of the Convention. However, it provided information in its BR5 and NC8 on its provision of support under the EMME Climate Change Initiative, the aim of which was to develop a Regional Climate Action Plan to address the specific needs and challenges EMME countries face and to advance adaptation and mitigation actions in accordance with the Paris Agreement.

126. In its NC8 Cyprus provided information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and an outline of the action taken to implement Article 4, paragraph 1(b), of the Convention with regard to adaptation. Cyprus included in its vulnerability assessment updated projections for temperature, precipitation, and frequency and duration of extreme weather events such as heatwaves and droughts. The main areas impacted by climate change are water resources, biodiversity, agriculture and forests. Cyprus adopted its National Adaptation Strategy and Action Plan in 2017 and progress in implementing adaptation measures has been monitored annually since 2018. A revision of the Strategy, which is to include a new vulnerability assessment, was initiated in 2023.

127. In its NC8 Cyprus provided information on its activities relating to research and systematic observation. The main policy document in the area of research and innovation is the Smart Specialisation Strategy for Cyprus and the main tool for implementing the Strategy's Action Plan for 2015–2022 was the RESTART 2016–2020 programme. Through RESTART, Cyprus funded research projects on climate change mitigation and adaptation. Cyprus has a dedicated research centre for climate change, CARE-C, which has developed a comprehensive atmospheric network that complements the country's networks for monitoring meteorological parameters and air quality. With the atmospheric network, CARE-C aims to establish the first ever open access long-term observations of key climate forcers in the EMME region. In addition, Cyprus collaborates in bilateral and multilateral climate change initiatives, mainly with countries in the EMME region.

128. In its NC8 Cyprus provided information on its actions relating to education, training and public awareness. Cyprus has integrated climate change into all educational levels and

disciplines. Climate change is an intrinsic part of the National Action Plan for Environmental Education, which is considered to be the most important policy document on environmental education and education for sustainable development in Cyprus. The country has made advances in various areas of formal and informal environmental education. A national network of environmental education centres was established by the Ministry of Education, Sport and Youth as an informal education initiative that addresses climate change through innovative approaches involving local communities and promoting intergenerational communication. Cyprus is a leading country in the region and internationally on issues related to education for sustainable development, including climate change.

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

- (a) To improve the completeness of its reporting by:
 - (i) Providing, as appropriate, a quantitative estimate of the impact of individual or collective PaMs along with a brief description of the estimation methods used (see issue 7 in table I.1);
 - (ii) Providing information on how it believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals (see issue 9 in table I.1);
 - (iii) Providing information on emission projections related to fuel sold to ships and aircraft engaged in international transport (see issue 1 in table I.2);
- (b) To improve the transparency of its reporting by:
 - (i) Including a detailed textual description of and information in tabular format on the significant PaMs per sector in accordance with the UNFCCC reporting guidelines on NCs, and listing all gases affected by each policy or measure in the energy sector when preparing the estimates and reporting projections (see issue 3 in table I.1);
 - (ii) Providing a thorough description of the PaMs reported (using a consistent naming convention, clearly aggregating and allocating PaMs by projection scenario, including a complete list of gases affected, and providing the specific year of implementation (i.e. when the policy or measure started the implementation process)) and an estimate of the mitigation impact for each policy or measure (for a particular year, not cumulative, in kt CO₂ eq) (see issue 5 in table I.1);
 - (iii) Providing consistent data when reporting projections across the NC tables, figures and textual descriptions (see issue 2 in table I.2).

130. In the course of the review of Cyprus's BR5, the ERT noted the following findings relating to adherence to the UNFCCC reporting guidelines on BRs:

- (a) Issues with the completeness of its reporting relating to:
 - (i) Providing either quantitative estimates of the impacts for individual PaMs or a clear explanation as to why they cannot be estimated (see issue 2 in table II.2);
 - (ii) Providing information on emission projections related to fuel sold to ships and aircraft engaged in international transport (see issue 1 in table II.4);
- (b) Issues with the transparency of its reporting relating to:
 - (i) Providing information consistent with the EU quantified economy-wide emission reduction target across the CTF tables (see issue 1 in table II.1);
 - (ii) Clearly identifying which PaMs it has implemented or plans to implement to achieve its quantified economy-wide emission reduction target and indicating any changes in PaMs since its last NC or BR (see issue 1 in table II.2);
 - (iii) Providing in the text and tables clear information on the use of market-based mechanisms under the ESD and EU ETS (see issue 1 in table II.3);
 - (iv) Providing consistent data when reporting projections within and across CTF tables, as well as in figures and textual descriptions (see issue 2 in table II.4).

Annex I

Assessment of adherence to the reporting guidelines for the eighth national communication of Cyprus

Tables I.1–I.3 summarize the ERT assessment of adherence to the UNFCCC reporting guidelines on NCs for Cyprus’s NC8.

Table I.1

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

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 10 Issue type: completeness Assessment: encouragement	Cyprus did not report in its NC8 information on whether any of the reported PaMs are innovative and/or effectively replicable by other Parties. During the review, the Party explained that the innovation and replicability of the PaMs will be taken into account in its current revision of the NECP. The country, as part of its decarbonization commitments, is developing innovative, synergistic measures for the waste, energy and transport sectors. The ERT reiterates the encouragement from the previous review report for Cyprus to improve the completeness of its reporting by indicating in its next NC those PaMs that are innovative and/or effectively replicable by other Parties.
2	Reporting requirement specified in paragraph 13 Issue type: completeness Assessment: encouragement	Cyprus did not report in its NC8 information on the social and economic consequences of its response measures, although it mentioned that a goal of its PaMs is to ensure social justice in the context of just transition. During the review, the Party shared its latest assessment of the social and economic consequences of its response measures, which was prepared for the NECP. The assessment noted that lower income households spend more (as a fraction of their income) on electricity and less on transport fuels than higher income households and concluded that PaMs focusing on electricity consumption have a major impact on GHG emissions. All the social and economic impacts were evaluated as being relatively minor for all sectors in Cyprus. The assessment concluded that RES measures will have the greatest social and economic impacts (e.g. job creation for PV solar installations and to a lesser extend wind installations) given the large number of RES-related PaMs included under both the WEM and the WAM scenarios. The ERT encourages Cyprus to improve the completeness of its reporting by providing in its next NC, to the extent possible, detailed information on the assessment of the economic and social consequences of its response measures.
3	Reporting requirement specified in paragraph 14 Issue type: transparency Assessment: recommendation	Cyprus reported in its NC8 information on its PaMs, by sector, including a description, GHGs affected, type of policy or instrument, and entity responsible for implementation. However, neither table 4.4 nor the boxes presenting key information on significant PaMs include the start year of implementation or the estimated impact of the measures. The ERT noted that information on the start year was provided in CTF table 3; however, there was no cross reference to CTF table 3 in the NC8. In addition, Cyprus indicated in its NC8 that the PaMs implemented in the energy sector affect only CO ₂ emissions. The ERT noted that emissions of other gases, such as CH ₄ and N ₂ O, could also be affected by energy sector PaMs. During the review, the Party explained that all of the required information on PaMs is provided in the NECP, including information on their status, progress of implementation and estimated impact. The Party further clarified that during an internal EU review, it was recommended that Cyprus report only the most relevant gas, which for the energy sector is CO ₂ . The ERT recommends that Cyprus include in its next NC a detailed textual description of and information in tabular format on the significant PaMs per sector, in accordance with the UNFCCC reporting guidelines on NCs, as well as indicate all gases affected by each policy or measure in the energy sector when preparing the estimates of the impact of its PaMs and reporting projections.

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
4	<p>Reporting requirement specified in paragraph 15</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>Cyprus reported in its NC8 PaMs that were also reported in its NC7 (tables 5.7 and 5.11). The descriptions of those previously reported PaMs provided in the NC8 do not focus on explaining the changes to their status since the NC7.</p> <p>During the review, the Party prepared a table that provides all the changes in status of PaMs, together with information on newly planned PaMs, since the NC7.</p> <p>The ERT reiterates the encouragement from the previous review report for Cyprus to improve the transparency of its reporting by providing in its next NC references to PaMs already reported and focusing on any changes to the PaMs or their effects.</p>
5	<p>Reporting requirement specified in paragraph 19</p> <p>Issue type: transparency</p> <p>Assessment: recommendation</p>	<p>Cyprus reported in its NC8 information on its PaMs (e.g. name of the policy or measure, sector and GHG affected, objective, type of instrument, status of implementation, description of the measure, implementing entity) but it did not report the estimated mitigation impact for all PaMs at the individual policy or measure level in the text of the NC or in CTF table 3. The ERT noted that the description of the measures was not completely clear because of the different ways in which the PaMs were aggregated and the inconsistencies in reported status and start year of PaMs and given that the sector affected was not always clear because the institutional sector in charge of the measure and not the GHG emission sector affected was reported (e.g. reference to the transport but not the LULUCF sector for tree planting along roads). The NC8 states that the impact of the measures was assessed for the NECP.</p> <p>During the review, the Party explained its aggregation of PaMs; clarified the status of implementation of PaMs; provided information on the working groups responsible for implementation in specific sectors; and informed the ERT that more detailed information on each policy or measure can be found in the NECP.</p> <p>The ERT recommends that Cyprus improve the transparency of its reporting by providing in its next NC a thorough description of the PaMs reported (i.e. using a consistent naming convention; clearly aggregating and allocating PaMs by projection scenario; providing the specific year of implementation (i.e. when the policy or measure started the implementation process); and providing an estimate of the mitigation impact for each policy or measure (for a particular year, not cumulative, in kt CO₂ eq)).</p>
6	<p>Reporting requirement specified in paragraph 19</p> <p>Issue type: completeness</p> <p>Assessment: encouragement</p>	<p>Cyprus reported in its NC8 information on its PaMs, including their status (planned, adopted or implemented). The ERT noted that for adopted and implemented PaMs, Parties may include additional information on the funds already provided, the future budget allocated and the time frame for implementation, but such information was not included in the NC8.</p> <p>During the review, the Party explained that the costs and non-GHG mitigation benefits of PaMs were assessed during the preparation of the NECP, which includes the PaMs presented in the NC8 and BR5. Cyprus mentioned that the NECP is currently being revised and will include additional PaMs that will contribute to the achievement of the new national target of a 32 per cent (raised in 2023 from the 24 per cent that was reported in the NECP) reduction in emissions compared with the 2005 level by 2030.</p> <p>The ERT encourages Cyprus to improve the completeness of its reporting on efforts towards achieving its emission reduction targets by including in its next NC information on adopted and implemented PaMs in terms of the funds already provided, the future budget allocated and the time frame for implementation.</p>
7	<p>Reporting requirement specified in paragraph 20</p> <p>Issue type: completeness</p> <p>Assessment: recommendation</p>	<p>Cyprus included in its NC8 quantitative estimates of the impact of some individual and collective PaMs but did not provide a brief description of the estimation methods used for determining these estimates.</p> <p>During the review, the Party clarified that for each category of PaMs reported in the NC8, the quantitative estimation of the impact was made by comparing the emission projections under the WOM, WEM and WAM scenarios. For energy and transport PaMs, energy models were used. Owing to the nature of the models, it was not possible to provide the estimated impact for every policy or measure, so some aggregation was necessary. For the measure on F-gases, it was assumed that recovery of F-gases would start in 2021 and increase linearly to reach the respective targets under the WEM and WAM scenarios and that there would be no recovery under the WOM scenario.</p>

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
		The ERT reiterates the recommendation from the previous review report for Cyprus to provide in its next NC a brief description of the methods used to estimate changes in activity levels and/or emissions for the reported PaMs in each sector.
8	Reporting requirement specified in paragraph 21 Issue type: completeness Assessment: encouragement	Cyprus reported in its NC8 information on the benefits of its PaMs and their interaction with other national policies. However, information on the costs of implementation of the PaMs was not included, other than a reference to relevant information in the NECP. During the review, the Party clarified that information for its PaMs on implementation costs, implementing entities, non-GHG mitigation benefits and interaction with other policies is available in the NECP and currently under revision. The ERT reiterates the encouragement from the previous review report for the Party to include in its next NC specific information related to the costs of implementation of the PaMs.
9	Reporting requirement specified in paragraph 22 Issue type: completeness Assessment: recommendation	Cyprus did not report in its NC8 information on how it believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals consistent with the objective of the Convention. During the review, the Party explained that the longer-term impacts of its PaMs were assessed when preparing its LT-LEDS (2022). However, the ERT notes that the NC8 and the LT-LEDS do not provide specific examples of the assessed impact of a policy or measure in the longer term. The ERT reiterates the recommendation from the previous review report for Cyprus to improve the completeness of its reporting by providing in its next NC information on how it believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals.

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

Table I.2

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

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 33 Issue type: completeness Assessment: recommendation	Cyprus did not provide in its NC8 information about emission projections related to fuel sold to ships and aircraft engaged in international transport. During the review, the Party clarified that the data needed to estimate projections for these emissions are not available. The ERT reiterates the recommendation from the previous review report that Cyprus in its next NC estimate and report separately, to the extent possible, the emission projections related to fuel sold to ships and aircraft engaged in international transport.
2	Reporting requirement specified in paragraph 34 Issue type: transparency Assessment: recommendation	Cyprus presented its projections and information on historical emissions and removals in tabular and graphical format in the NC8. However, the ERT noted that there are inconsistencies in the data provided between the NC tables and graphs (e.g. for 2050) and also with the values in CTF table 6 (e.g. 8,575 kt CO ₂ eq versus 7,415 kt CO ₂ eq for the WOM scenario in 2030). Inconsistency also occurs in the total reported by gas versus the total by sector for some years (e.g. 8,576 versus 8,574 kt CO ₂ eq for the WOM scenario in 2030). In all cases, indirect CO ₂ emissions are not included in the projected emissions. During the review, the Party acknowledged the inconsistencies detected by the ERT and provided the source Excel file used in the Party’s calculation. The file was used by the ERT as a main source of projection data for the purposes of this report. The ERT recommends that Cyprus provide consistent data when reporting projections across the NC (tables, figures and textual descriptions).
3	Reporting requirement specified in paragraph 38 Issue type: transparency	Cyprus stated in its NC8 that the aggregate impact of PaMs is not equal to the sum of the reductions achieved by each policy or measure, as when combined, they produce different results. However, the NC8 lacks a description of the methodological approach

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
	Assessment: encouragement	used to estimate the total effect of the PaMs included in the WEM and WAM scenarios and of the underlying assumptions. During the review, the Party explained that the total effect of PaMs equals the difference between the WOM projections, which include measures that have been implemented up until the latest inventory year (2021), and the WEM and WAM projections, which include adopted and implemented measures and planned measures respectively since 2021. The ERT encourages Cyprus to improve the transparency of its reporting by describing in its next NC the methodology used to estimate the total effect of PaMs under the WEM scenario and stating clearly from which year onward it is assumed that PaMs were implemented or not implemented when calculating the estimates.
4	Reporting requirement specified in paragraph 43 Issue type: completeness Assessment: encouragement	Cyprus did not provide in its NC8 a quantitative or qualitative sensitivity analysis. However, the Party specified in the NC8 that the data required for a sensitivity analysis were not available. During the review, the Party clarified that a sensitivity analysis was not performed because there was no mitigation impact assessment of individual PaMs for the energy sector owing to the type of modelling used for that sector. The energy sector accounts for more than half of the total national GHG emissions, therefore, if a sensitivity analysis was carried out, it would generate the result that the projections are most sensitive to changes in the energy sector. The ERT reiterates the encouragement from the previous review report for Cyprus to discuss in its next NC qualitatively and, where possible, quantitatively the sensitivity of the projections to underlying assumptions.

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

Table I.3

Findings on education, training and public awareness from the review of the eighth national communication of Cyprus

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 69 Issue type: completeness Assessment: encouragement	Cyprus did not report in its NC8 information on the involvement of the public and NGOs in education, training and public awareness. During the review, the Party explained that the public and NGOs are involved in education, training and public awareness programmes. The Unit of Education for the Environment and Sustainable Development has involved local communities and NGOs in the implementation, monitoring and updating of the actions under the National Strategy on Education for Sustainable Development. The ERT reiterates the encouragement from the previous review report for Cyprus to include in its next NC information on the involvement of the public and NGOs in education, training and public awareness.

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

Annex II

Assessment of adherence to the reporting guidelines for the fifth biennial report of Cyprus

The BR5 of Cyprus is the final BR under the measurement, reporting and verification system established under the Convention.¹ Nevertheless, ERTs continue to provide recommendations and encouragements to the Parties on completeness, transparency and adherence to the UNFCCC reporting guidelines on BRs. Parties may find these recommendations and encouragements relevant, as appropriate, when preparing their initial biennial transparency report under the enhanced transparency framework of the Paris Agreement. Tables II.1–II.4 summarize the ERT assessment of adherence to the UNFCCC reporting guidelines on BRs for Cyprus’s BR5.

Table II.1

Findings on the quantified economy-wide emission reduction target from the review of the fifth biennial report of Cyprus

No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 5 Issue type: transparency Assessment: recommendation	<p>The ERT noted inconsistencies regarding the way in which the information on the quantified economy-wide emission reduction target was presented in the CTF tables, as follows: (1) the base year in CTF table 2(b) is not set to 1990 for all gases in line with the reporting of the EU target; (2) in CTF table 2(b–c), NF₃ is reported although it is not covered by the EU target; and (3) the use of market-based mechanisms is possible under the EU target, but the cells in CTF table 2(e) are left blank.</p> <p>During the review, the Party explained that NF₃ was included in the target specified in CTF table 2(b–c) in error and that market-based mechanisms are not used.</p> <p>The ERT recommends that Cyprus improve the transparency of its reporting on its quantified economy-wide emission reduction target by providing information consistent with the EU quantified economy-wide emission reduction target across the CTF tables. The ERT notes that the transparency of the reporting in the CTF tables could be improved by using notation keys and footnotes.</p>

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

Table II.2

Findings on mitigation actions and their effects from the review of the fifth biennial report of Cyprus

No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 6 Issue type: transparency Assessment: recommendation	<p>Cyprus did not report clearly in its BR5 on the changes in the PaMs reported in CTF table 3 that were included in both the BR4 and the BR5. In addition, the ERT noted inconsistencies in the reporting of PaMs between the textual part of the BR5 and CTF table 3, as a different naming convention was used.</p> <p>During the review, the Party clarified the changes in status of particular PaMs, provided the reasons for some of the changes in PaMs between the BR4 and the BR5, and explained the approach used to aggregate PaMs.</p> <p>The ERT reiterates the recommendation from the previous review report for Cyprus to improve the transparency of its reporting by clearly identifying which PaMs it has implemented or plans to implement to achieve its quantified economy-wide emission reduction target and indicating any changes in PaMs since its last NC or BR. The ERT</p>

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

No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
		notes that for its reporting on PaMs the Party should maintain consistency in the status, year and sector reported in the BR and CTF table 3, and update and explain the information on PaMs it has implemented or new PaMs it plans to implement, adopted PaMs that have not been implemented as expected, and any PaMs that have been discontinued since its previous annual submission.
2	Reporting requirement specified in CTF table 3 Issue type: completeness Assessment: recommendation	The ERT noted that a quantified estimate of the impact was not reported for any individual mitigation policy or measure in CTF table 3; the cells were left empty, without an explanation in the custom footnote. During the review, the Party explained that estimates of mitigation potential are included in the NECP, which was updated after the submission of the BR5. The ERT recommends that Cyprus improve the completeness of its reporting by providing either quantitative estimates of the impacts for individual PaMs or a clear explanation (in the CTF table 3 custom footnotes) as to why they cannot be estimated. The ERT notes that the notation keys “IE”, “NE” and/or “NA” could be used when aggregated impact is provided elsewhere, estimates are not made, or the impacts could not be estimated as the actions were not in place at the time the estimates were made.

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

Table II.3

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 fifth biennial report of Cyprus

No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 10 Issue type: transparency Assessment: recommendation	Cyprus reported “NA” for its use of market-based mechanisms in CTF table 4. However, no further information was provided in a footnote to the table, the text of the BR5 or the referenced section of the NC8. During the review, the Party confirmed that no market-based mechanisms were used. The ERT recommends that Cyprus improve the transparency of its reporting by providing clear information on the use of market-based mechanisms under the ESD and EU ETS in the relevant tables and report text. The ERT notes that the transparency of the Party’s reporting could be improved by using relevant footnotes and explaining the notation keys used in the CTF tables.

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

Table II.4

Findings on projections reported in the fifth biennial report of Cyprus

No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
1	Reporting requirement ^a specified in paragraph 33 Issue type: completeness Assessment: recommendation	Cyprus did not provide information about emission projections related to fuel sold to ships and aircraft engaged in international transport. During the review, the Party clarified that the data needed to estimate projections for these emissions are not available. The ERT reiterates the recommendation from the previous review report that Cyprus estimate and report separately, to the extent possible, the emission projections related to fuel sold to ships and aircraft engaged in international transport.
2	Reporting requirement specified in paragraph 34 Issue type: transparency	Cyprus presented its projections and information on historical emissions and removals in tabular format both in the textual part of the submission and in CTF table 6(a–c). However, the ERT noted that there are inconsistencies in the data provided between these locations, for example for 2030. In addition, for the historical years, the totals in CTF table 6(a) do not match the totals in CTF table 6(b–c). Inconsistency also occurs in the total reported by gas versus the total by sector for some years (e.g. 7,347.22 versus

No.	<i>Reporting requirement and issue type</i>	<i>Description of the finding with recommendation or encouragement</i>
	Assessment: recommendation	7,415.62 kt CO ₂ eq for the WOM scenario in 2030). In all cases, indirect CO ₂ emissions are not included in the projected emissions. During the review, the Party acknowledged the inconsistencies detected by the ERT and provided the source Excel file used in the Party's calculation. The file was used by the ERT as a main source of projection data for the purposes of this report. The ERT recommends that Cyprus provide consistent data when reporting projections within and across CTF tables, as well as in figures and textual descriptions.
3	Reporting requirement specified in paragraph 43 Issue type: completeness Assessment: encouragement	Cyprus did not provide in its BR5 a quantitative or qualitative sensitivity analysis. However, the Party specified in the BR5 that the data required for a sensitivity analysis were not available. During the review, the Party clarified that a sensitivity analysis was not performed because there was no mitigation impact assessment of individual PaMs for the energy sector owing to the type of modelling used for that sector. The energy sector accounts for more than half of the total national GHG emissions, therefore, if a sensitivity exercise was carried out, it would generate the result that the projections are most sensitive to changes in the energy sector. The ERT reiterates the encouragement from the previous review report for Cyprus to discuss qualitatively and, where possible, quantitatively the sensitivity of the projections to underlying assumptions.

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

^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.

Annex III

Documents and information used during the review

A. Reference documents

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

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B. Additional information provided by the Party

Responses to questions during the review were received from Nicoletta Kythreotou and Marios Papanicolaou (MARDE), including additional material. The following references were provided by Cyprus and may not conform to UNFCCC editorial style as some have been reproduced as received:

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