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Climate Change

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Report on the individual review of the annual submission of Cyprus submitted in 2020*

Note by the expert review team

Summary

Each Party included in Annex I to the Convention must submit an annual inventory of emissions and removals of greenhouse gases for all years from the base year (or period) to two years before the inventory due date (decision 24/CP.19). Parties included in Annex I to the Convention that are Parties to the Kyoto Protocol are also required to report supplementary information under Article 7, paragraph 1, of the Kyoto Protocol with the inventory submission due under the Convention. This report presents the results of the individual review of the 2020 annual submission of Cyprus, conducted by an expert review team in accordance with the “Guidelines for review under Article 8 of the Kyoto Protocol”. The review took place from 2 to 7 November 2020 remotely.

* In the symbol for this document, 2020 refers to the year in which the inventory was submitted, not to the year of publication.



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Abbreviations and acronyms

AAU	assigned amount unit
AD	activity data
Annex A source	source category included in Annex A to the Kyoto Protocol
AR	afforestation and reforestation
Article 8 review guidelines	“Guidelines for review under Article 8 of the Kyoto Protocol”
C	carbon
CER	certified emission reduction
CH ₄	methane
CM	cropland management
Convention reporting adherence	adherence to the “Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”
COPERT	software tool for calculating road transport emissions
CORINE	Coordination of Information on the Environment (programme)
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
CPR	commitment period reserve
CRF	common reporting format
EF	emission factor
ERT	expert review team
ERU	emission reduction unit
EU ETS	European Union Emissions Trading System
FM	forest management
FMRL	forest management reference level
Frac _{BURN}	fraction of agricultural crop residues burned on site
GHG	greenhouse gas
GM	grazing land management
HFC	hydrofluorocarbon
IE	included elsewhere
IEA	International Energy Agency
IEF	implied emission factor
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
KP-LULUCF	activities under Article 3, paragraphs 3–4, of the Kyoto Protocol
KP reporting adherence	adherence to the reporting guidelines under Article 7, paragraph 1, of the Kyoto Protocol
Kyoto Protocol Supplement	<i>2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol</i>
LPG	liquefied petroleum gas
LULUCF	land use, land-use change and forestry
NA	not applicable
NE	not estimated
NF ₃	nitrogen trifluoride
NIR	national inventory report
NO	not occurring
N ₂ O	nitrous oxide
PFC	perfluorocarbon

QA/QC	quality assurance/quality control
RMU	removal unit
RV	revegetation
SEF	standard electronic format
SF ₆	sulfur hexafluoride
UNFCCC Annex I inventory reporting guidelines	“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”
UNFCCC review guidelines	“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”
WDR	wetland drainage and rewetting
Wetlands Supplement	<i>2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands</i>
2006 IPCC Guidelines	<i>2006 IPCC Guidelines for National Greenhouse Gas Inventories</i>

I. Introduction

1. This report covers the review of the 2020 annual submission of Cyprus, organized by the secretariat in accordance with the Article 8 review guidelines (adopted by decision 22/CMP.1 and revised by decision 4/CMP.11). In accordance with the Article 8 review guidelines, this review process also encompasses the review under the Convention as described in the UNFCCC review guidelines, particularly in part III thereof, namely the “UNFCCC guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention” (annex to decision 13/CP.20). The review took place from 2 to 7 November 2020 remotely¹ and was coordinated by Jongikhaya Witi, Tomoyuki Aizawa and Javier Figueroa Hanna (secretariat). Table 1 provides information on the composition of the ERT that conducted the review for Cyprus.

Table 1

Composition of the expert review team that conducted the review for Cyprus

<i>Area of expertise</i>	<i>Name</i>	<i>Party</i>
Generalist	Mikhail Gitarskiy	Russian Federation
Energy	Kendal Blanco-Salas	Costa Rica
	Audace Ndayizeye	Burundi
	Songli Zhu	China
IPPU	Roman Kazakov	Russian Federation
	Ils Moorkens	Belgium
Agriculture	Yu’e Li	China
	Batima Punsalmaa	Mongolia
	Juan José Rincón Cristóbal	Spain
LULUCF and KP-LULUCF	Erik Karlton	Sweden
	Timothy Paul Liersch	Australia
	Yusuf Serengil	Turkey
Waste	Maryna Bereznytska	Ukraine
	Violeta Hristova	Bulgaria
	Hiroyuki Ueda	Japan
Lead reviewers	Mikhail Gitarskiy	
	Songli Zhu	

2. The basis of the findings in this report is the assessment by the ERT of the Party’s 2020 annual submission in accordance with the UNFCCC review guidelines and the Article 8 review guidelines.

3. The ERT has made recommendations that Cyprus resolve identified findings, including issues² designated as problems.³ Other findings, and, if applicable, the encouragements of the ERT to Cyprus to resolve related issues, are also included.

4. A draft version of this report was communicated to the Government of Cyprus, which provided no comments.

5. Annex I presents the annual GHG emissions of Cyprus, including totals excluding and including LULUCF, indirect CO₂ emissions, and emissions by gas and by sector, and

¹ Owing to the circumstances related to the coronavirus disease 2019, the review had to be conducted remotely.

² Issues are defined in decision 13/CP.20, annex, para. 81.

³ Problems are defined in decision 22/CMP.1, annex, paras. 68–69, as revised by decision 4/CMP.11.

contains background data on emissions and removals from KP-LULUCF, if elected by the Party, by gas, sector and activity.

6. Information to be included in the compilation and accounting database can be found in annex II.

II. Summary and general assessment of the Party’s 2020 annual submission

7. Table 2 provides the assessment by the ERT of the Party’s 2020 annual submission with respect to the tasks undertaken during the review. Further information on the issues identified, as well as additional findings, may be found in tables 3 and 5.

Table 2

Summary of review results and general assessment of the 2020 annual submission of Cyprus

Assessment		Issue/problem ID#(s) in table 3 or 5 ^a	
Dates of submission	Original submission: NIR, 26 May 2020; CRF tables (version 5), 26 May 2020; SEF tables, 8 April 2020		
Review format	Centralized review conducted remotely		
Application of the requirements of the UNFCCC Annex I inventory reporting guidelines and the Wetlands Supplement (if applicable)	Have any issues been identified in the following areas:		
	(a) Identification of key categories?	No	
	(b) Selection and use of methodologies and assumptions?	Yes	I.7, I.8, I.15, I.17, L.14, L.16, L.17
	(c) Development and selection of EFs?	Yes	E.12, E.13
	(d) Collection and selection of AD?	Yes	E.9, E.19, E.20, L.2, L.11, W.6, W.7, KL.1
	(e) Reporting of recalculations?	No	
	(f) Reporting of a consistent time series?	No	
	(g) Reporting of uncertainties, including methodologies?	Yes	G.8, G.9, G.16
	(h) QA/QC?		QA/QC procedures were assessed in the context of the national system (see supplementary information under the Kyoto Protocol below)
	(i) Missing categories, or completeness? ^b	Yes	E.14, L.4, L.9, W.4, W.5
	(j) Application of corrections to the inventory?	No	
Significance threshold	For categories reported as insignificant, has the Party provided sufficient information showing that the likely level of emissions meets the criteria in paragraph 37(b) of the UNFCCC Annex I inventory reporting guidelines?	No	I.4
Description of trends	Did the ERT conclude that the description in the NIR of the trends for the different gases and sectors is reasonable?	Yes	
Supplementary information under the Kyoto Protocol	Have any issues been identified related to the following aspects of the national system:		
	(a) Overall organization of the national system, including the effectiveness and reliability of the institutional, procedural and legal arrangements?	Yes	G.5, G.9
	(b) Performance of the national system functions?	Yes	G.6
	Have any issues been identified related to the national registry:		

<i>Assessment</i>	<i>Issue/problem ID#(s) in table 3 or 5^a</i>		
	(a) Overall functioning of the national registry?	Yes	G.10, G.12
	(b) Performance of the functions of the national registry and the adherence to technical standards for data exchange?	Yes	G.11
	Have any issues been identified related to the reporting of information on AAUs, CERs, ERUs and RMUs and on discrepancies in accordance with decision 15/CMP.1, annex, chapter I.E, in conjunction with decision 3/CMP.11, taking into consideration any findings or recommendations contained in the standard independent assessment report?	No	
	Have any issues been identified in matters related to Article 3, paragraph 14, of the Kyoto Protocol, specifically problems related to the transparency, completeness or timeliness of the reporting on the Party's activities related to the priority actions listed in decision 15/CMP.1, annex, paragraph 24, in conjunction with decision 3/CMP.11, including any changes since the previous annual submission?	Yes	G.14
	Have any issues been identified related to the following reporting requirements for KP-LULUCF:		
	(a) Reporting requirements of decision 2/CMP.8, annex II, paragraphs 1–5?	Yes	KL.8
	(b) Demonstration of methodological consistency between the reference level and reporting on FM in accordance with decision 2/CMP.7, annex, paragraph 14?	Yes	KL.5
	(c) Reporting requirements of decision 6/CMP.9?	No	
	(d) Country-specific information to support provisions for natural disturbances in accordance with decision 2/CMP.7, annex, paragraphs 33–34?	Yes	KL.4
CPR	Was the CPR reported in accordance with decision 18/CP.7, annex; decision 11/CMP.1, annex; and decision 1/CMP.8, paragraph 18?	No	G.12
Adjustments	Has the ERT applied any adjustments under Article 5, paragraph 2, of the Kyoto Protocol?	No	
	Has the Party submitted a revised estimate to replace a previously applied adjustment?	NA	Cyprus does not have a previously applied adjustment
Response from the Party during the review	Has the Party provided the ERT with responses to the questions raised, including the data and information necessary for assessing conformity with the UNFCCC Annex I inventory reporting guidelines and any further guidance adopted by the Conference of the Parties?	Yes	
Recommendation for an exceptional in-country review	On the basis of the issues identified, does the ERT recommend that the next review be conducted as an in-country review?	No	
Question of implementation	Did the ERT list any questions of implementation?	No	

^a Further information on the issues identified, as well as additional findings, may be found in tables 3 and 5.

^b Missing categories for which methods are provided in the 2006 IPCC Guidelines may affect completeness and are listed in annex III.

III. Status of implementation of recommendations included in the previous review report

8. Table 3 compiles the recommendations from previous review reports that were included in the most recent previous review report, published on 11 December 2019,⁴ and had not been resolved by the time of publication of the review report of the Party's 2019 annual submission. The ERT has specified whether it believes the Party had resolved, was addressing or had not resolved each issue or problem by the time of publication of this review report and has provided the rationale for its determination, which takes into consideration the publication date of the most recent previous review report and national circumstances.

Table 3
Status of implementation of recommendations included in the previous review report for Cyprus

<i>ID#</i>	<i>Issue/problem classification^a</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
General			
G.1	Archiving (G.2, 2019) (G.17, 2017) (G.18, 2016) (G.18, 2015) Convention reporting adherence	Enhance the security and performance of the data archiving and storage system.	Resolved. The NIR (section 1.2.1.1, pp.31–34) states that the Department of Environment of Cyprus maintains a centralized archive of inventory information, which, according to the NIR (section 1.2.2, pp.34–36), includes electronic and hard copies of data inputs, calculation spreadsheets, records of QA/QC procedures, copies of inventory submissions (NIRs and CRF tables) and public and expert review reports. During the review, the Party explained that data are now version controlled for incremental changes and archived separately for each completed submission. The archive is continuously backed up both on and off site and is subject to appropriate security and access control restrictions.
G.2	CRF tables (G.8, 2019) (G.5, 2017) (G.8, 2016) (G.8, 2015) (table 4, 2013) Convention reporting adherence	Provide relevant explanations in CRF table 9, specifically for all cases of the notation key “NE” being reported and for sources reported as “IE” (e.g. indirect emissions from agricultural soils).	Addressing. Cyprus partially explained the reporting of “NE” and “IE” in CRF table 9. It revised incorrect explanations for the reporting of the notation keys as a result of internal QC procedures. However, “NE” was still reported in the CRF tables for categories in the energy (1.B.2), IPPU (2.G) and LULUCF (4.B–4.F) sectors without any explanation being provided in CRF table 9 or the NIR. Furthermore, no explanation was provided in CRF table 9 for the reporting of “IE”. The information reported in the “Explanation” column should have been reported in the column “Allocation used by the Party”. During the review, the Party stated that it will provide complete explanations for the reporting of those notation keys in future submissions.
G.3	Key category analysis (G.9, 2019) (G.21, 2017) Convention reporting adherence	Correct the cut-off criterion to use a 95 per cent threshold, and disaggregate emissions in the energy sector and in the agricultural soils categories in the key category analysis.	Resolved. The key category analysis reported in annex 1 to the NIR included the correct threshold of 95 per cent for identifying key categories, as per the 2006 IPCC Guidelines (vol. 1, chap. 4). The emissions for the energy sector and agricultural soils categories in the analysis were disaggregated by fuel, subcategory and gas, as appropriate.

⁴ FCCC/ARR/2019/CYP.

<i>ID#</i>	<i>Issue/problem classification^a</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
G.4	Methods (G.11, 2019) (G.10, 2017) (G.15, 2016) (G.15, 2015) Accuracy	Ensure that appropriate methods are used to estimate emissions for key categories.	Not resolved. According to the NIR (table 1.3, pp.43–46) and CRF summary table 3, the Party used the default methods from the 2006 IPCC Guidelines for most of the sectors identified as key in the GHG inventory – in particular for estimating CO ₂ , CH ₄ and N ₂ O emissions for categories 1.A.1–1.A.4 in the energy sector, CO ₂ emissions for category 2.A.1 in the IPPU sector, N ₂ O emissions for categories 3.B and 3.D in the agriculture sector and CO ₂ emissions in the LULUCF sector. During the review, the Party explained that this issue will be addressed in future submissions, as and when the applicable data become available.
G.5	National system (G.15, 2019) (G.7, 2017) (G.9, 2016) (G.9, 2015) KP reporting adherence	Report on the progress of implementation of the workplan that includes the description of legal, institutional and procedural arrangements for performing the functions of the national system, and explain the activities in place for continuous and sustainable reporting, including enhancing the capacity to report supplementary information under the Kyoto Protocol, in particular on the LULUCF sector.	Addressing. The Party has progressed towards implementing the recommendation. As reported in the NIR (chap. 1.2, pp.29–42), decision 83.710 of the Council of Ministers of Cyprus of 15 November 2017 enhanced the legal, institutional and procedural arrangements for inventory preparation, including provision of AD, compilation of inventories, performance of QA/QC procedures, archiving and storage. The ERT noted that the Party had contracted an expert team from the Cyprus Institute to enable sustainable inventory preparation from 2020 onward. However, it also noted that Cyprus had yet to provide a description of the activities in place for continuous and sustainable reporting, including the provision of supplementary information under the Kyoto Protocol. In particular, the Party did not provide the supplementary information on LULUCF required under paragraphs 2(b)(ii), 2(g)(iii–vi) and 5(c), (e) and (f) of annex II to decision 2/CMP.8. Whereas Cyprus stated that it considered the matter resolved, the ERT is of the view that this recommendation has yet to be fully implemented.
G.6	National system (G.16, 2019) (G.22, 2017) KP reporting adherence	Implement the workplan in accordance with the listed tasks and deadlines and update the text in the NIR accordingly to describe any changes to the national system.	Addressing. Cyprus has progressed in implementing the workplan, as reported in the NIR (annex 7, table A7.1, pp.370–371). In particular, it has enhanced certain aspects of the national system and increased efforts to meet inventory submission deadlines. However, the NIR has not yet been updated to include a description of the changes to the national system and was lacking some supplementary information required under decision 2/CMP.8 (see ID#s G.5 above and G.16 in table 5). During the review, the Party explained that this information will be included in the next submission. Noting the Party’s limited capacities, the ERT is of a view that Cyprus should enhance its institutional inventory arrangements and the technical competence of its staff to ensure timely and efficient inventory preparation.
G.7	Notation keys (G.23, 2019) Completeness	Assess the significance of emissions and removals when reporting them as “NE” and indicate in both the NIR and the CRF completeness table (CRF table 9) why such emissions or removals have not been estimated, in accordance with paragraph 37(b)	Not resolved. Cyprus continued to report “NE” in CRF table 2(II).B-H (sheet 2) for HFC emissions from mobile air conditioning (category 2.F.1.e) for 1990–1991, and reported “NO” for N ₂ O emissions from diesel consumption by light-duty trucks (category 1.A.3.b.ii) and HFC emissions from manufacturing of industrial and commercial refrigerators (category 2.F.1), as noted in ID#s E.14, I.4 and I.5 below. In addition, Cyprus has not yet reported all mandatory pools in

<i>ID#</i>	<i>Issue/problem classification^a</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
		of the UNFCCC Annex I inventory reporting guidelines.	the LULUCF sector (see ID# L.4 below). During the review, Cyprus stated that it plans to address this issue for future annual submissions.
G.8	Uncertainty analysis (G.20, 2019) (G.14, 2017) (G.6, 2016) (G.6, 2015) Convention reporting adherence	Conduct an uncertainty analysis for LULUCF after the LULUCF reporting has been completed.	Not resolved. In the NIR (section 1.5, p.52, and annex 2, pp.307–318), Cyprus provided information on the uncertainty analysis for the national GHG inventory excluding the LULUCF sector. The NIR does not include uncertainty estimates for the LULUCF sector or the specific categories reported. Cyprus stated that it plans to address this issue for future annual submissions.
G.9	Uncertainty analysis (G.24, 2019) Transparency	Provide the sources of expert judgment used to quantitatively assess the uncertainty of source or sink categories for AD or EFs in annex 2 to the NIR, consistently with the 2006 IPCC Guidelines (vol. 1, section 3.5).	Not resolved. Cyprus did not provide the sources of expert judgment used to derive the uncertainty of AD and EFs in the NIR (annex 2, table A.2.1). It stated that the identification of those sources is ongoing.
G.10	National registry (G.13, 2019) (G.18, 2017) (G.19, 2016) (G.19, 2015) KP reporting adherence	Include in the NIR information on the national registry in accordance with decision 5/CMP.1 and the annex to decision 13/CMP.1 in conjunction with decision 3/CMP.11 and other relevant provisions and standards (including contact information for the designated organization and registry administrator, and a description of the standardized electronic database applied for registry performance and publicly accessible information).	Addressing. In the NIR (chap. 14, pp.283–285), Cyprus provided limited information on how its national registry performs the functions defined in the annex to decision 5/CMP.1 and the annex to decision 13/CMP.1 in conjunction with decision 3/CMP.11, as required by the annex to decision 15/CMP.1. The information provided included the contact details of the designated organization for registry management, the registry administrator and other persons involved in operating the registry. However, the Party did not provide a description of the standardized electronic database applied for registry performance and publicly accessible information.
G.11	National registry (G.14, 2019) (G.23, 2017) KP reporting adherence	Report any change to the national registry (since the previous annual submission) in the NIR in accordance with decision 15/CMP.1, annex, paragraph 22.	Not resolved. Cyprus did not report whether or not there were any changes to the national registry in the NIR (chap. 14, pp.283–285). The ERT noted that Parties included in Annex I (as defined in Article 1, para. 7, of the Kyoto Protocol) are obliged to report any changes to their national registry in accordance with paragraph 22 of the annex to decision 15/CMP.1. During the review, Cyprus clarified that no changes had been made to the national registry. However, the ERT considers that the Party has yet to address this recommendation because this was not stated in the NIR.
G.12	Kyoto Protocol units (G.12, 2019) (G.24, 2017) KP reporting adherence	Report in the NIR information in accordance with decision 15/CMP.1, annex, paragraphs 12–18, in conjunction with decision 3/CMP.11, including on information reported in the SEF tables; discrepancies and notification; publicly accessible registry information; and the calculation of the CPR.	Addressing. Cyprus reported in the NIR (chap. 12, p.281) that the information referred to in paragraphs 12–18 of the annex to decision 15/CMP.1, in conjunction with decision 3/CMP.11, was submitted electronically (in the SEF tables) together with the 2020 annual submission. However, the Party did not report on the calculation of its CPR in the NIR as required by paragraph 18 of the annex to decision 15/CMP.1. During the review, Cyprus clarified that its CPR (42,705,115 t CO ₂ eq) had not changed insofar as it was based on its assigned amount for the second commitment period of the Kyoto Protocol, which was lower than eight times 100 per cent of the total emissions excluding LULUCF

<i>ID#</i>	<i>Issue/problem classification^a</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
			reported in the most recently reviewed national GHG inventory. However, as the requirement for reporting on the CPR was not met in the 2020 annual submission, the ERT considers that the Party has yet to fully address this recommendation.
Energy			
E.1	1. General (energy sector) – all fuels – CO ₂ , CH ₄ and N ₂ O (E.1, 2019) (E.1, 2017) (E.1, 2016) (E.1, 2015) (18, 2013) Transparency	Provide information on how emissions are estimated by including information on efforts to reconcile energy balance and EU ETS data, as well as additional information on the use of EU ETS data and an explanation of how the time-series consistency of the emission estimates is ensured.	Addressing. The Party reported in its NIR (p.34) that QC of AD includes a comparison of the same or similar data from alternative data sources, which includes EU ETS and energy balance data and time-series consistency assessments, to help to identify and explain changes in the NIR. During the review, the Party clarified that the results of the ongoing QC exercise will be included in the next submission. The ERT considers that the recommendation has not yet been fully addressed because the NIR did not include the results of the QC exercise or information on efforts to ensure time-series consistency of estimates derived from EU ETS and energy balance data.
E.2	1. General (energy sector) – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.2, 2019) (E.13, 2017) Convention reporting adherence	Complete the cell comments section in CRF Reporter when entering data for all instances of “IE” so that the information appears in CRF table 9.	Resolved. The Party provided all necessary explanations for the reporting of “IE” in CRF table 9.
E.3	1.A.1.c Manufacture of solid fuels and other energy industries – biomass – CO ₂ , CH ₄ and N ₂ O (E.19, 2019) Convention reporting adherence	Correct NIR table 3.3 by reporting emissions from the manufacture of solid fuels in order to ensure consistency between the NIR and CRF table 1.A(a).	Resolved. The Party reported emissions for category 1.A.1.c (manufacture of solid fuels) in the NIR (table 3.3, p.66) instead of reporting “NO”, thus ensuring consistency between the NIR and CRF table 1.A(a).
E.4	1.A.2.b Non-ferrous metals – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.8, 2019) (E.17, 2017) Transparency	Describe in the NIR the rationale for reporting “NO” for liquid fuel consumption for 2013 and 2014, along with any supporting information, to enhance transparency.	Resolved. The Party reported in its NIR (p.77) that AD for non-ferrous metals were reported as “NO” for 2013 and 2014 since non-ferrous metal facilities had been powered by electricity from the national grid instead of liquid fuels in those years.
E.5	1.A.2.c Chemicals – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.9, 2019) (E.18, 2017) Transparency	Correct the AD for 2013 (i.e. report liquid fuel consumption as “NO”) and explain the inter-annual variation in the AD and CO ₂ , CH ₄ and N ₂ O emissions in the NIR.	Addressing. The Party continued to report the value “0” in the NIR (table 3.10) for the consumption of liquid fuels under subcategory 1.A.2.c and correctly reported “NO” in CRF table 1.A(a) (sheet 2). However, no explanation was provided in the NIR for the inter-annual variation in the AD and CO ₂ , CH ₄ and

<i>ID#</i>	<i>Issue/problem classification^a</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
			N ₂ O emissions. During the review, the Party stated that it will include in the next submission an explanation of the inter-annual variation in the AD and emissions.
E.6	1.A.2.c Chemicals – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.20, 2019) Completeness	Estimate CO ₂ , CH ₄ and N ₂ O emissions from LPG consumption under chemicals (1.A.2.c) and report the emissions in the NIR and CRF table 1.A(a) (sheet 2).	Resolved. The Party reported estimates of CO ₂ , CH ₄ and N ₂ O emissions from LPG consumption under subcategory 1.A.2.c (chemicals) in CRF table 1.A(a) (sheet 2).
E.7	1.A.2.d Pulp, paper and print – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.21, 2019) Comparability	Allocate emissions from LPG consumption reported under paper, pulp and printing in the national energy balance to category 1.A.2.d in both the NIR (table 3.10) and CRF table 1.A(a) (sheet 2).	Resolved. The Party reported emissions from LPG consumption under subcategory 1.A.2.d in the NIR (table 3.10) and in CRF table 1.A(a) (sheet 2) for the years in which the consumption occurred (2017–2018).
E.8	1.A.2.f Non-metallic minerals – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.22, 2019) Accuracy	Correct the reporting for 2017 of the CO ₂ emissions for liquid fuels for non-metallic minerals in CRF table 1.A(a) (sheet 2).	Resolved. The Party reported the correct CO ₂ emissions for 2017 for liquid fuels for non-metallic minerals in CRF table 1.A(a) (sheet 2). The ERT observed that most liquid fuel consumption for subcategory 1.A.2.f (non-metallic minerals) was accounted for by petroleum coke, whose default CO ₂ EF of 97.5 t CO ₂ /TJ in the 2006 IPCC Guidelines (vol. 2, chap. 2) explains the high CO ₂ IEF for this subcategory.
E.9	1.A.2.g Other (manufacturing industries and construction) – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.23, 2019) Comparability	Correct the reporting by allocating the LPG consumption reported in the energy balance under other sector – not specified elsewhere and the corresponding emissions to the category other stationary (1.A.5a) in both the NIR (tables 3.24–3.25) and CRF table 1.A(a).	Not resolved. The Party continued to report LPG consumption of 60 TJ in the energy balance under category 1.A.2.m in the NIR (table 3.10, p.75) and under subcategory 1.A.2.g other (manufacturing industries and construction) in CRF table 1.A(a) (sheet 2), instead of under subcategory 1.A.5.a stationary (other). During the review, the Party stated that LPG consumption will be correctly reported in the next submission.
E.10	1.A.3.b Road transportation – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.14, 2019) (E.7, 2017) (E.22, 2016) (E.22, 2015) Transparency	Provide in the NIR a description of the composition of the biofuels used under category 1.A.3.b, that is the composition of the biodiesel being mixed with the diesel (in per cent), and information explaining if all diesel is mixed with biodiesel and if there are other types of biofuel being used in the country or in road transportation.	Resolved. The Party reported the composition of biodiesel being mixed with diesel. It explained that, until 2012, biofuels were oil-seed based only, but that, from 2013, biodiesel contained increasing amounts of used cooking oil, from 8.5 per cent in 2013 to 97.1 per cent by 2016, as reported in the NIR (p.83).
E.11	1.A.3.b Road transportation – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.24, 2019) Transparency	Document in the NIR how the COPERT V model and the EFs applied are appropriate to the national circumstances.	Not resolved. The Party reported in its NIR (p.83) how the COPERT V model works, including the vehicle statistics used to populate the model. However, the NIR still did not contain information on how the COPERT V model and the EFs applied were appropriate to the Party's national circumstances. During the review, the Party stated that the documentation of the COPERT V model is in progress and that the issue will be resolved for the next annual submission.

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E.12	1.A.3.b Road transportation – liquid fuels – CO ₂ (E.25, 2019) Accuracy	Correct the CO ₂ EF used to estimate emissions from gasoline consumption in road transportation for 1993 and 1994 and ensure the time-series consistency of the applied EFs.	Not resolved. The CO ₂ IEFs for gasoline for 1993 (67.28 t CO ₂ /TJ) and 1994 (76.36 t CO ₂ /TJ) are outside the default range (67.50–73.00 t CO ₂ /TJ) given in the 2006 IPCC Guidelines (vol. 3, chap. 3). The NIR does not explain how CO ₂ EFs for gasoline consumption in road transportation were derived and corrected to ensure time-series consistency. During the review, the Party stated that it will resolve the issue for the next annual submission.
E.13	1.A.3.b Road transportation – liquid fuels – N ₂ O (E.26, 2019) Accuracy	Correct the N ₂ O EF used to estimate emissions from diesel consumption in road transportation for 1999 and 2000 and ensure the time-series consistency of the applied EFs.	Not resolved. The N ₂ O IEF for diesel oil decreased by 75.2 per cent from 4.57 kg N ₂ O/TJ reported for 1999 to 1.13 kg N ₂ O/TJ for 2000. The NIR did not state whether any effort had been made to correct or ensure the time-series consistency of the N ₂ O EFs applied. During the review, the Party clarified that the sulfur content of diesel can have a significant impact on N ₂ O emissions and could explain the drastic reduction in the N ₂ O EFs between 1999 and 2000. It added that the Department of Labour Inspection of Cyprus is further investigating the matter, and that work is under way to ensure the time-series consistency and accuracy of the N ₂ O EFs.
E.14	1.A.3.b.ii Light-duty trucks – liquid fuels – N ₂ O (E.27, 2019) Completeness	Correct the estimates of N ₂ O emissions from diesel consumption by light-duty trucks for 1990–1999.	Not resolved. The Party stated that the 2020 annual submission was the first to report the number of vehicles by type in the NIR (table 3.17) for some of the time series, as part of efforts to estimate emissions from road transportation using the COPERT V model. During the review, it added that the N ₂ O emission estimates calculated using COPERT V had been corrected. However, the ERT noted that Cyprus continued to report N ₂ O emissions from diesel consumption as “NO” in CRF table 1.A(a) (sheet 3) for 1990–1999, and therefore considers that the recommendation has not yet been implemented.
E.15	1.A.3.d Domestic navigation – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.17, 2019) (E.10, 2017) (E.21, 2016) (E.21, 2015) Transparency	Report in the NIR on any progress achieved in improving the consistency of the time series.	Not resolved. The Party reported in its NIR (p.84) that emissions from domestic waterborne navigation activities were estimated on the basis of AD obtained from the national Statistical Service on fuel consumption for 1998–2018, and that the fuel consumption for 1990–1997 was estimated on the basis of the contribution of waterborne navigation activities to road transport emissions for 1998 (0.33 per cent). However, the NIR did not provide any justification for this assumption or information on how time-series consistency was ensured.
E.16	1.A.4.a Commercial/institutional – biomass – CO ₂ , CH ₄ and N ₂ O (E.28, 2019) Accuracy	Correct the CO ₂ , CH ₄ and N ₂ O emission estimates on the basis of corrected biogas consumption data under commercial/institutional for 2014–2017 and report the correct estimates in the NIR and CRF tables.	Resolved. The Party corrected the biogas consumption data for 2014–2017 using biogas AD from the 2018 energy balance data (NIR table 3.21). It performed recalculations of CO ₂ , CH ₄ and N ₂ O emissions for 2014–2017, and reported in its NIR (p.89) that for 2017 there was a 16.5 per cent increase in the reported emissions of CO ₂ , CH ₄ and N ₂ O between the 2019 and 2020 submissions.
E.17	1.A.4.c.i Stationary – biomass – CO ₂ , CH ₄ and N ₂ O	Explain in the NIR that the consumption of biogas by “autoproducers” is accounted for under category 1.A.4.c.i because all the production and	Resolved. The Party explained in the NIR (p.86) that the consumption of biogas by “autoproducers” is accounted for under category 1.A.4.c.i stationary (agriculture/forestry/fishing).

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	(E.29, 2019) Transparency	consumption of biogas occurs on farms with anaerobic digesters.	
E.18	1.B.2.a Oil – CH ₄ (E.18, 2019) (E.21, 2017) Accuracy	Revise the reported CH ₄ EF for 1990–2004, report the revised emission estimates and explain the recalculation in the NIR.	Resolved. The Party reported an EF of 21.8 kg CH ₄ /10 ³ m ³ crude oil refined, which falls in the middle of the default range (2.6–41 kg CH ₄ /10 ³ m ³) given in the 2006 IPCC Guidelines (vol. 2, chap. 4), instead of the incorrect EF of 3.35 kg CH ₄ /m ³ used for its previous annual submission. It also reported the results of its recalculations in the NIR (table 3.34). The change in the EF resulted in an increase in estimated emissions of 559.7 per cent for 2004 in the 2020 annual submission as compared with that reported in the 2019 submission.
IPPU			
I.1	2.D.3 Other (non-energy products from fuels and solvent use) – CO ₂ (I.13, 2019) (I.9, 2017) (I.17, 2016) (I.17, 2015) Transparency	Report the AD for urea-based catalysts in kt, instead of TJ, in CRF table 2(I).A-H (sheet 2).	Resolved. The Party reported in CRF table 2(I).A-H (sheet 2) AD for urea-based additives consumed for use in catalytic converters in mass units (kt) instead of energy units (TJ) (i.e. 6.16 kt for 2018). The ERT acknowledges the Party's intention, stated during the review, to change the corresponding description of the AD from "diesel consumption for road transport" to "urea-based additive consumed or use in catalytic converters".
I.2	2.F Product uses as substitutes for ozone-depleting substances – HFCs (I.14, 2019) (I.10, 2017) (I.18, 2016) (I.18, 2015) Accuracy	Continue efforts to collect AD and report emissions fully in accordance with the 2006 IPCC Guidelines.	Resolved. The Party provided information in its NIR (pp.126–138) on the collection of AD and the methods applied for estimating emissions for 2.F subcategories, including transport refrigeration. Cyprus applied a tier 2a method for category 2.F.1 and a country-specific methodology for categories 2.F.2–2.F.4 on the basis of surrogate data for Parties with similar economic and social conditions and in accordance with the 2006 IPCC Guidelines (vol. 1, section 2.2.1). According to the revised methodology and AD, emissions for category 2.F.1 for 2017 were 278.65 kt CO ₂ eq compared with 240.51 kt CO ₂ eq as reported in the 2019 annual submission. The increase in emissions of 38.14 kt CO ₂ eq equates to 0.4 per cent of the national total excluding LULUCF. The ERT noted that AD and emissions were transparently reported in CRF table 2(II).B-H (sheet 2) and considers that the recommendation has been implemented as the methods applied and AD collected are in accordance with the 2006 IPCC Guidelines.
I.3	2.F Product uses as substitutes for ozone-depleting substances – PFCs and NF ₃ (I.15, 2019) (I.11, 2017) (I.19, 2016) (I.19, 2015) Convention reporting adherence	Further examine whether PFC and NF ₃ emissions from product uses as substitutes for ozone-depleting substances occur in the country and, as appropriate, report estimates or report an appropriate notation key (i.e. "NO") in the corresponding CRF tables.	Not resolved. The cells for NF ₃ and PFC emissions for categories 2.F.1, 2.F.2, 2.F.3, 2.F.5 and 2.F.6 were left blank in CRF tables 2(I) (sheet 2) and 2(II). During the review, Cyprus clarified that PFC and NF ₃ emissions from product uses as substitutes for ozone-depleting substances did not occur in the country and acknowledged that it had not transparently reported this in the CRF tables. Cyprus notified the ERT that this issue will be resolved in the next submission.

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I.4	2.F.1 Refrigeration and air conditioning – HFCs (I.18, 2019) (I.12, 2017) (I.4, 2016) (I.4, 2015) (46, 2013) Transparency	Further examine whether emissions from manufacturing of refrigeration and air-conditioning equipment occur in the country and, as appropriate, report values or revise the use of the notation keys reported.	Not resolved. The Party reported emissions from manufacturing of refrigeration and air-conditioning equipment as “NO” in CRF table 2(II)B-H (sheet 2). During the review, the Party clarified that industrial and commercial refrigerators were manufactured in the country and provided the corresponding estimates of HFC emissions, specifically 0.0472 kt CO ₂ eq for 2018, accounting for 0.0005 per cent of the national total excluding LULUCF. Whereas this is below the significance threshold (4.41 kt CO ₂ eq for 2018) for commencement of an adjustment procedure in accordance with decision 22/CMP.1, annex, paragraph 80(b), in conjunction with decision 4/CMP.11, the ERT considers that the recommendation has not been implemented because the Party neither estimated and reported HFC emissions from manufacturing of industrial and commercial refrigerators in the NIR and the CRF tables nor provided information in the NIR to demonstrate that the emissions were below the significance threshold.
I.5	2.F.1 Refrigeration and air conditioning – HFCs (I.22, 2019) Comparability	Estimate emissions from mobile air conditioning (2.F.1.e) using the methods provided in the 2006 IPCC Guidelines (vol. 3, chap. 7) for 1990–2004. If national circumstances prevent the use of those methods, use surrogate data to estimate the emissions in accordance with the 2006 IPCC Guidelines (vol. 1, section 2.2.1).	Addressing. The Party reported in CRF table 2(II).B-H (sheet 2) HFC emissions for category 2.F.1.e (mobile air conditioning) for 1992–2004 and reported “NE” for 1990–1991. During the review, Cyprus clarified that, since HFC-134a had not been introduced as a mobile air-conditioning refrigerant until 1992, no emissions were reported for 1990–1991; however, the ERT considers that the recommendation has not yet been fully implemented because the Party continued to report “NE” instead of “NO” for HFC emissions from mobile air conditioning in CRF table 2(II)B-Hs2 for 1990–1991.
I.6	2.F.1 Refrigeration and air conditioning – HFCs (I.23, 2019) Accuracy	Correct the AD and revise the estimates of HFC-134a remaining in products at decommissioning and HFC-134a emissions from disposal under stationary air conditioning (2.F.1.f) and report the correct values in CRF table 2(II)B-Hs2 for 1994 and 1995.	Resolved. The Party revised the AD and the disposal loss factor for 1994–1995 and reported a consistent time series in CRF table 2(II).B-H (sheet 2).
I.7	2.G Other product manufacture and use – N ₂ O and SF ₆ (I.20, 2019) (I.23, 2017) Accuracy	Recalculate SF ₆ emissions from electrical equipment, N ₂ O emissions from medical applications and N ₂ O emissions from other – propellant for pressure and aerosol products, and include up-to-date values for population and average per capita emissions and update the values reported in CRF tables 2(I).A-Hs2 and 2(II)B-Hs2.	Addressing. Cyprus revised the methodology for estimating N ₂ O emissions from medical applications (2.G.3.a) on the basis of the number of hospital beds in the country. A description of the methodology and a discussion of the recalculations were included in the NIR (pp.143–145). The estimated emissions for category 2.G.3.a for 2017 increased by 0.01137 kt N ₂ O (or 3.39 kt CO ₂ eq) from 0.02 kt N ₂ O reported in the 2019 annual submission to 0.03 kt N ₂ O based on the revised methodology. Cyprus did not revise the methods applied for estimating SF ₆ emissions from electrical equipment (2.G.1) and reported in CRF table 2(II).B-H (sheet 2) the same emissions (0.0000073 kt SF ₆) for 2016–2018. No information on SF ₆ emissions from electrical equipment was provided for 2017 and 2018 in the NIR (table 4.28, pp.142–143). The ERT estimated that SF ₆ emissions for category 2.G.1 amounted to 0.16531 kt CO ₂ eq for 2018, or 0.002 per cent of the national total excluding LULUCF, which is below the significance threshold

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I.8	2.G.1 Electrical equipment – N ₂ O and SF ₆ (I.24, 2019) Accuracy	Estimate SF ₆ emissions from electrical equipment (2.G.1) by using the methods provided in the 2006 IPCC Guidelines (vol. 3, chap. 8). If national circumstances prevent the use of those methods, use surrogate data to estimate the emissions, in accordance with the 2006 IPCC Guidelines (vol. 1, section 2.2.1), including the use, for example, of power grid installed capacity, as SF ₆ emissions are normally correlated with this parameter.	(4.41 kt CO ₂ eq for 2018) for commencement of an adjustment procedure in accordance with decision 22/CMP.1, annex, paragraph 80(b), in conjunction with decision 4/CMP.11. Cyprus reported N ₂ O emissions from other (2.G.3.b) in the NIR (p.144) and CRF table 2(I).A-H (sheet 2) on the basis of population data and per capita emissions. However, the population data provided in the NIR (table 4.22, p.137) for Cyprus were not provided for 2017–2018 and per capita data were not included in the NIR as recommended. The ERT considers that the recommendation has not yet been fully implemented because the Party has yet to recalculate SF ₆ emissions for category 2.G.1 and include up-to-date values in the NIR for population and average per capita emissions as required for estimates for category 2.G.3.b. During the review, the Party stated that this issue will be resolved for the next submission.
I.9	2.G.3 N ₂ O from product uses – N ₂ O (I.25, 2019) Accuracy	Estimate N ₂ O emissions from product uses (2.G.3) by using the methods provided in the 2006 IPCC Guidelines (vol. 3, chap. 8). If national circumstances prevent the use of those methods, use surrogate data to estimate the emissions, in accordance with the 2006 IPCC Guidelines (vol. 1, section 2.2.1).	Not resolved. Cyprus used the same method for estimating SF ₆ emissions from electrical equipment (2.G.1) as for the previous submission. SF ₆ emissions are estimated using the average emissions per capita of neighbouring countries as EFs and using the population of Cyprus as AD. During the review, Cyprus clarified that work is under way to revise the methodology for estimating emissions for category 2.G.1, in particular collecting data from the national electricity provider on electrical switchgear and substations containing SF ₆ for 2018–2019. The Party expects the recommendation to be implemented for the next submission.
Agriculture			
A.1	3.A Enteric fermentation – CH ₄ (A.3, 2019) (A.5, 2017) (A.6, 2016) (A.6, 2015) (60, 2013) Accuracy	Estimate emissions for all significant livestock categories using an enhanced livestock characterization and a tier 2 methodology in accordance with the IPCC <i>Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories</i> .	Resolved. Cyprus revised the methodology for estimating emissions of N ₂ O from medical applications (2.G.3.a) on the basis of the number of hospital beds in the country. A description of the methodology and a discussion of the recalculations were included in the NIR (pp.143–145). Cyprus reported N ₂ O emissions from other (2.G.3.b) in the NIR (p.144) and CRF table 2(I).A-H (sheet 2) on the basis of population data and per capita emissions. The ERT considers that the recommendation has been implemented because the method used by the Party is in accordance with the 2006 IPCC Guidelines taking into account the availability of AD.
			Resolved. The Party reported in its NIR (p.151) that it used a tier 1 method with default IPCC EFs for all calculations for enteric fermentation, except for emissions from dairy cattle, for which it used a tier 2 method. The ERT found that using tier 1 for other livestock categories is in line with the 2006 IPCC Guidelines (vol. 4, section 10.2). All other livestock categories are considered insignificant as their emissions account for less than 25–30 per cent of total enteric fermentation emissions. Indeed, non-dairy cattle and sheep represented 21.2 and 23.8 per cent of such emissions, respectively, in 2018.

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A.2	3.B.3 Swine – CH ₄ and N ₂ O (A.10, 2019) Transparency	Correct the digester allocations under manure management systems in CRF table 3.B(a)s.2 for market swine for 2017.	Not resolved. The Party did not correct the manure management system allocations in CRF table 3.B(a) (sheet 2) for market swine. For 2017 and 2018, the Party allocated 45 and 40 per cent of manure to digesters, respectively, in CRF table 3.B(a) (sheet 2), and 55 and 60 per cent, respectively, in the NIR (table 5.13, p.158). During the review, the Party stated that it is aware of the issue and that the digester allocations will be corrected in the next submission.
A.3	3.D.a Direct N ₂ O emissions from managed soils – N ₂ O (A.6, 2019) (A.11, 2017) Accuracy	Implement a tier 2 methodology to estimate emissions for categories 3.D.a.1 and 3.D.a.2.a, considering desk studies or expert judgment as alternatives given the national circumstances.	Resolved. The Party reported using a tier 1 methodology to estimate direct N ₂ O emissions from managed soils in the NIR (table 1.3, p.45). The ERT considers that using tier 1 for subcategories 3.D.a.1 and 3.D.a.2.a is in line with the 2006 IPCC Guidelines (vol. 4, figure 11.2).
A.4	3.F Field burning of agricultural residues – CO ₂ , CH ₄ and N ₂ O (A.8, 2019) (A.13, 2017) Accuracy	Include a reference to the relevant legislation on the banning of crop residue burning in the NIR, along with applied expert judgment on the occurrence of fires; and undertake a desk study to identify the appropriateness of the current Frac _{BURN} and, if necessary, recalculate CH ₄ and N ₂ O emissions from the burning of residues of barley, potatoes, beans and pulses using the revised Frac _{BURN} values and report in the NIR on the results of any desk studies.	Resolved. The NIR includes a reference to the relevant legislation (p.175) and the applied expert judgment (p.167). The Party reported estimated emissions for crops other than wheat in the NIR (p.175) and CRF table 3.F. The ERT considers the expert judgment for the selection of the Frac _{BURN} parameter to be appropriate.
LULUCF			
L.1	4. General (LULUCF) (L.3, 2019) (L.3, 2017) (L.3, 2016) (L.3, 2015) (74, 2013) Accuracy	Report the areas converted to a different land use under the relevant land-use conversion category for 20 consecutive years before reporting them under the corresponding land remaining category.	Not resolved. The Party continued to report land transitions without any transition period for the category other land. As rationale for this, the Party stated during the review that land in the category other land is dynamic and does not reach a state of equilibrium. The Party also stated that it will explain more transparently in its next submission how it calculates and reports land transitions. The ERT noted that minor land-use changes do not necessarily imply category changes. For example, cropland reserved for grazing can still be considered as cropland. In addition, woody and non-woody grassland can be transitioned on the basis of predetermined rules to compensate for dynamism. The Party could explain such land-use practices with a view to establishing more stable patterns of land use and land-use change. The ERT also noted that failure to implement land-use transitions might lead to under- or overestimation of GHG removals and emissions. It considers that the justification provided by the Party is not in accordance with the 2006 IPCC Guidelines (vol. 4, p.2.13).
L.2	4. General (LULUCF) – CO ₂ (L.6, 2019) (L.6, 2017) (L.7, 2016) (L.7, 2015)	Explore the use of, where relevant, the carbon stock change factors and assumptions used for the estimation of the carbon stock changes in biomass, deadwood and litter, and ensure comparability	Addressing. Cyprus used the default carbon stock change factors and tier 1 approaches from the 2006 IPCC Guidelines (vol. 4, chaps. 4–8) for estimating carbon stock changes in biomass, deadwood and litter. For some categories in CRF tables 4.A and 4.B the Party reported “0” for dead organic matter. The Party

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	(78, 2013) Accuracy	between the land-use changes both to and from a category.	explained in the NIR (p.195) that it did not have any biomass carbon stock and increment data for woody cropland. Among the steps taken to address this issue, the Party cited the completion in November 2019 of a report on the establishment of a national system for compiling GHG inventories for LULUCF.
L.3	4. General (LULUCF) – CO ₂ , CH ₄ and N ₂ O (L.7, 2019) (L.7, 2017) (L.8, 2016) (L.8, 2015) (79, 2013) Comparability	Report “NO” for any category, pool and/or gas for which there is information confirming that it does not occur, and provide such information in the NIR, and report “NE” for categories, pools and/or gases for which there is no information on emissions or removals or for which net emissions or removals are negligible.	Addressing. The Party reported “NO” in CRF table 4.A and other tables but did not provide information confirming that emissions for the relevant activities or categories did not occur. During the review, the Party stated that relevant work is ongoing.
L.4	4. General (LULUCF) – CO ₂ , CH ₄ and N ₂ O (L.9, 2019) (L.9, 2017) (L.10, 2016) (L.10, 2015) (79, 2013) Completeness	Report all mandatory carbon pools.	Addressing. The Party did not report all mandatory carbon pools or carbon stock changes for several land-use conversions and/or pools, including for cropland, grassland, settlements, wetlands and other land. For forest land remaining forest land, the Party reported “NO” for litter, deadwood and soil organic carbon in CRF table 4.A. During the review, the Party stated that it is taking steps to address the issue, including capacity-building in collaboration with the Cyprus Institute.
L.5	4.A Forest land (L.14, 2019) (L.14, 2017) (L.17, 2016) (L.17, 2015) Transparency	Provide a description of the methodology and assumptions used to identify the forest area.	Resolved. The Party described in the NIR (chap. 6.1.1) its use of the CORINE system, which estimates land cover at 25 ha resolution and 5 ha sensitivity for change detection. The description includes the assumptions used regarding over- and underestimation of areas owing to the relative coarseness of the resolution compared with that recommended in the national forest definition (described in NIR chap. 6.1.2.1). The ERT considers the description appropriate for current practices in Cyprus (concerns about the adequacy of land identification methods related to the forest definition are considered under ID# KL.1 below).
L.6	4.A Forest land – CO ₂ (L.19, 2019) Convention reporting adherence	Revise the reporting of the area of settlements converted to forest land and ensure consistency among the areas reported in the NIR, CRF table 4.1 and CRF table 4.A.	Addressing. For 2018, Cyprus reported an area of settlements converted to forest land of 0.02 kha in CRF table 4.1 and 0.42 kha in CRF table 4.A. However, the total forest area reported in NIR tables 6.4–6.5 (158.34 kha) was not consistent with that reported in CRF tables 4.1 (158.92 kha) and 4.A (163.28 kha). During the review, the Party stated that CRF table 4.1 did not take into account the 20-year conversion factor and that this issue will be addressed for the next submission. However, the ERT considers that the sum of the land area values given in the NIR (p.204) and CRF tables 4.1 and 4.A should still match the total forest land (the sum of all land that is forest at the end of the year).
L.7	4.D Wetlands – CO ₂ (L.20, 2019) Convention reporting adherence	Revise the reporting of land areas converted to wetlands and ensure consistency between the information reported in CRF tables 4.1 and 4.D.	Not resolved. Land conversions were not reported consistently between CRF tables 4.1 and 4.D. For 2018, the total land area for wetlands was reported as 4.09 kha in CRF table 4.1 and as 4.86 kha in CRF table 4.D. During the review, the Party stated that it will address this issue for its next submission.

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L.8	4.E Settlements – CO ₂ (L.21, 2019) Convention reporting adherence	Revise the area of settlements reported in NIR table 6.14 and ensure consistency with the total area of settlements reported in CRF table 4.E.	Not resolved. The total area of settlements for 2018 was reported inconsistently as 567.05 kha in NIR table 6.14, 57.74 kha in CRF table 4.1 and 70.81 kha in CRF table 4.E. During the review, the Party stated that it will address this issue for its next submission.
L.9	4(V) Biomass burning – CO ₂ , CH ₄ and N ₂ O (L.16, 2019) (L.10, 2017) (L.12, 2016) (L.12, 2015) (81, 2013) Completeness	Provide the missing estimates of emissions from forest fires for land converted to forest land for 2011.	Not resolved. The Party did not provide estimates of emissions from forest fires under land converted to forest land for 2011. During the review, the Party stated that it will address this issue for its next submission.
Waste			
W.1	5. General (waste) – CO ₂ , CH ₄ and N ₂ O (W.1, 2019) (W.5, 2017) Accuracy	Ensure proper accounting and alignment of waste streams used as alternative fuel sources in the energy sector and in the waste sector (categories 5.A, 5.B and 5.D), taking into account whether the newly available data from the national Statistical Service are applicable, and whether these are deducted from the waste sector, because they may be resulting in an overestimation of waste sector emissions.	Resolved. The Party ensured proper accounting and alignment of waste streams used as alternative fuel sources in the energy and waste sectors (NIR p.240). According to the national Statistical Service, for 2014, 4.45 kt partially stabilized biodegradable waste generated during sorting was incinerated in cement kilns for energy recovery. Emissions from this activity were accounted for in the energy sector, under non-metallic minerals (category 1.A.2.f).
W.2	5. General (waste) – CO ₂ , CH ₄ and N ₂ O (W.2, 2019) (W.5, 2017) Transparency	Include in the NIR under the waste sector a transparent explanation of the waste streams (i.e. the AD) that are reported in the energy sector and in the waste sector based on the revised data from the national Statistical Service.	Resolved. The NIR (p.240) included a transparent explanation of the waste streams based on the revised data from the national Statistical Service.
W.3	5.A Solid waste disposal on land – CH ₄ (W.12, 2019) Accuracy	Estimate AD from industrial waste prior to 1990 and revise the associated CH ₄ emissions from industrial waste for the whole time series, and provide in the NIR the methodology used to estimate such emissions.	Resolved. The Party reported AD for industrial waste prior to 1990 in its NIR (p.228) and revised the associated CH ₄ emissions from industrial waste for the entire time series in its NIR (p.237) and CRF table 5.A. Recalculations were reported in CRF table 8. The resulting increase in the total estimated CH ₄ emissions from solid waste management ranged from 0.26 kt CH ₄ for 1990 to 0.82 kt CH ₄ for 2017, or 6.6 to 20.4 kt CO ₂ eq, respectively. The resulting increase in total emissions for the waste sector ranged from 1.8 per cent for 1990 to 3.8 per cent for 2017, while the resulting increase in total national emissions excluding LULUCF ranged from 0.1 per cent for 1990 to 0.2 per cent for 2017.
W.4	5.B.2 Anaerobic digestion at biogas facilities – CH ₄ (W.13, 2019) Completeness	Report CH ₄ emissions from sludge transported for anaerobic treatment for biogas production under the category anaerobic digestion at biogas facilities (5.B.2) and include an explanation in the energy sector chapter of the NIR concerning the	Not resolved. The Party did not report CH ₄ emissions from sludge transported for anaerobic treatment for biogas production under the category anaerobic digestion at biogas facilities (5.B.2). The annual emissions accounted for at most 4.25 kg CH ₄ (in 2018), or 106.25 kg CO ₂ eq. This represents less than 0.00000001 per cent of national total emissions excluding LULUCF for 2018, which is below the

<i>ID#</i>	<i>Issue/problem classification^a</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
		consumption of biogas on farms with anaerobic digesters for solid waste.	significance threshold (4.41 kt CO ₂ eq for 2018) for commencement of an adjustment procedure in accordance with decision 22/CMP.1, annex, paragraph 80(b), in conjunction with decision 4/CMP.11. In addition, the Party did not include an explanation in the energy sector chapter of the NIR concerning the consumption of biogas on farms with anaerobic digesters for solid waste. During the review, the Party stated that it is in the process of implementing the recommendation.
W.5	5.C.1 Waste incineration – CO ₂ , CH ₄ and N ₂ O (W.14, 2019) Completeness	Estimate and report emissions from waste incineration without energy recovery.	Not resolved. The Party did not estimate and report emissions from waste incineration without energy recovery. During the review, the Party explained that it expects to have sufficient data to implement this recommendation for its next annual submission. The ERT checked the AD for incinerated waste as reported for Cyprus by Eurostat, the statistical office of the European Union, and noted that no waste was reported for 2016–2018. However, on the basis of the AD provided for 2004–2014, the ERT estimated that emissions from waste incineration without energy recovery for those years increased by 0.008811–0.044474 kt CO ₂ eq, or 0.0001–0.0005 per cent of the national total, which is below the significance threshold (4.41 kt CO ₂ eq for 2018) for including the issue in the list of potential problems and further questions raised by the ERT.
W.6	5.D Wastewater treatment and discharge – CH ₄ (W.10, 2019) (W.9, 2017) Accuracy	Provide information in the NIR, under category-specific planned improvements, on whether any plans are in place to move to higher-tier methods as this category has been identified as key.	Not resolved. The Party did not provide information in the NIR on whether any plans are in place to move to higher-tier estimation methods for wastewater treatment and discharge (category 5.D). During the review, the Party stated that it will include such information in its next NIR, under category-specific planned improvements. On the basis of the AD reported by Cyprus and IEA statistics for Cyprus, the ERT estimated that CH ₄ emissions for category 5.D for 2018 would increase by 0.3145 kt CO ₂ eq, or 0.0035 per cent of the national total, which is below the significance threshold (4.41 kt CO ₂ eq for 2018) for including this issue in the list of potential problems and further questions raised by the ERT.
W.7	5.D.1 Domestic wastewater – CH ₄ and N ₂ O (W.11, 2019) (W.10, 2017) Accuracy	Account for the component of organic material and nitrogen removed as sludge, because it is reported that there are good data sources for sludge in Cyprus, and explain any recalculations for categories 5.D.1 and 3.D.1.a.2.b resulting from this change.	Not resolved. The Party did not account for the component of organic material and nitrogen removed as sludge or explain any resulting recalculations for categories 5.D.1 and 3.D.1.a.2.b. During the review, the Party stated that it expects to implement this recommendation for its next annual submission. On the basis of AD reported in the NIR (table 7.22) on sludge used in agriculture and IEA statistics for category 5.D.1 for 2018, the ERT estimated that emissions from organic material and nitrogen removed as sludge for 2018 would increase by 2.19 kt CO ₂ eq, or 0.025 per cent of the national total, which is below the significance threshold (4.41 kt CO ₂ eq for 2018) for including this issue in the list of potential problems and further questions raised by the ERT.

<i>ID#</i>	<i>Issue/problem classification^a</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
KP-LULUCF			
KL.1	General (KP-LULUCF) (KL.1, 2019) (KL.1, 2017) (KL.1, 2016) (KL.1, 2015) KP reporting adherence	Implement the workplan to report any emissions or removals from activities under Article 3, paragraphs 3–4, of the Kyoto Protocol, and apply method 2 from the Kyoto Protocol Supplement to address information on geographical location; complete by 2018 a map of woody forest vegetation in State and private forests, with a minimum mapping unit of 0.3 ha; acquire or utilize satellite information to obtain the areas of AD for FM and the geographical location; and acquire capacity-building assistance to estimate non-CO ₂ emissions.	Addressing. The ERT noted that the CORINE-based system used to create a map of forest cover and cover changes in Cyprus, as described in the NIR (see ID# L.5 above), is capable of estimating areas of AR, deforestation and FM for reporting in CRF table NIR-2. However, the ERT also noted that the system's spatial mapping resolution and sensitivity (25 ha and 5 ha, respectively) are coarser than the recommended resolution of 0.3 ha in the national forest definition. During the review, the Party clarified that it has finished mapping woody forest vegetation in State-owned and private forests and is looking to further improve its AD using satellite data in addition to the CORINE maps. While the ERT appreciates that Cyprus might not have sufficient resources to establish a more accurate remote sensing system with the recommended resolution of 0.3 ha, it points out that complementing or corroborating the CORINE data using other sources of information, such as a national forest inventory, would be sufficient to implement the recommendation (see ID# KL.2 below for concerns about the estimation of non-CO ₂ emissions).
KL.2	General (KP-LULUCF) (KL.2, 2019) (KL.2, 2017) (KL.1, 2016) (KL.1, 2015) Transparency	Report on the progress of implementation of the workplan designed to report any emissions or removals from activities under Article 3, paragraphs 3–4, of the Kyoto Protocol.	Not resolved. In parallel with ID# KL.1 above, there is a completeness issue for KP-LULUCF. For example, Cyprus did not report any emissions or removals from nitrogen fertilization or nitrogen mineralization in mineral soils, or indirect N ₂ O emissions from managed soils or biomass burning, as required. The Party provided a workplan for the resolution of this issue during a previous review, but did not provide any update in the NIR in that regard. During the review, the Party clarified that it is seeking external assistance to build its capacity for reporting emissions under LULUCF, including KP-LULUCF, and for establishing a national system for preparing GHG inventories for those sectors.
KL.3	General (KP-LULUCF) (KL.3, 2019) (KL.3, 2017) (KL.2, 2016) (KL.2, 2015) Transparency	Clarify in the NIR how the losses of carbon stock calculated using the IPCC default biomass gain–loss method have been calculated and what types of loss have been considered.	Not resolved. The NIR does not contain information on the calculation of emissions associated with losses of carbon stock using the IPCC default biomass gain–loss method. In particular, no information was provided where the losses comprised wood harvest only or where fuelwood removals and disturbances were included. No EFs were provided in the NIR. During the review, the Party stated that losses took into account fuelwood removal and were adjusted for salvage logging, and that this explanation will be included in the next submission.
KL.4	General (KP-LULUCF) (KL.4, 2019) (KL.4, 2017) (KL.3, 2016) (KL.3, 2015) Transparency	Include estimates of the background level and margin.	Not resolved. Cyprus did not identify the geographical boundaries of the areas encompassing units of land subject to AR, deforestation and FM (see ID# KL.1 above).
KL.5	General (KP-LULUCF) (KL.5, 2019) (KL.5,	Enter the FM cap in the accounting table.	Not resolved. The Party reported the FM cap, estimated at 338.10 kt CO ₂ eq, in the CRF accounting table. The reported value is different from the value of

<i>ID#</i>	<i>Issue/problem classification^a</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
	2017) KP reporting adherence		196.953 kt CO ₂ eq given in the report on the review of the report to facilitate the calculation of the Party's assigned amount for the second commitment period of the Kyoto Protocol. During the review, the Party stated that the FM cap will be included in its next submission.
KL.6	FM – CO ₂ (KL.6, 2019) (KL.6, 2017) KP reporting adherence	Revise the area of forest included in the land-transition matrix in order to be consistent with that reported in CRF tables NIR-2 and 4(KP-1)B.1.	Addressing. The area of land subject to FM included in CRF table NIR-2 (143.37 kha) is different from that reported in NIR table 11.12 and CRF table 4(KP-I).B.1 (143.97 kha). During the review, the Party stated that the calculations will be rechecked for the next submission.

^a References in parentheses are to the paragraph(s) and the year(s) of the previous review report(s) in which the issue or problem was raised. Issues are identified in accordance with paras. 80–83 of the UNFCCC review guidelines and classified as per para. 81 of the same guidelines. Problems are identified and classified as problems of transparency, accuracy, consistency, completeness or comparability in accordance with para. 69 of the Article 8 review guidelines in conjunction with decision 4/CMP.11.

IV. Issues and problems identified in three or more successive reviews and not addressed by the Party

9. In accordance with paragraph 83 of the UNFCCC review guidelines, the ERT noted that the issues and/or problems included in table 4 have been identified in three or more successive reviews, including the review of the 2020 annual submission of Cyprus, and had not been addressed by the Party at the time of publication of this review report.

Table 4

Issues and/or problems identified in three or more successive reviews and not addressed by Cyprus

<i>ID#</i>	<i>Previous recommendation for the issue</i>	<i>Number of successive reviews issue not addressed^a</i>
General		
G.2	Provide relevant explanations in CRF table 9(a), specifically for all cases of the notation key “NE” being reported and for sources reported as “IE” (e.g. indirect emissions from agricultural soils).	5 (2013–2020)
G.4	Ensure that appropriate methods are used to estimate emissions for key categories.	4 (2015/2016–2020)
G.5	Report on the progress of implementation of the workplan that includes the description of legal, institutional and procedural arrangements for performing the functions of the national system, and explain the activities in place for continuous and sustainable reporting, including enhancing the capacity to report supplementary information under the Kyoto Protocol, in particular on the LULUCF sector.	4 (2015/2016–2020)
G.6	Implement the workplan in accordance with the listed tasks and deadlines and update the text in the NIR accordingly to describe any changes to the national system.	3 (2017–2020)
G.8	Conduct an uncertainty analysis for LULUCF after the LULUCF reporting has been completed.	4 (2015/2016–2020)
G.10	Include in the NIR information on the national registry in accordance with decision 5/CMP.1 and the annex to decision 13/CMP.1 in conjunction with decision 3/CMP.11 and other relevant provisions and standards (including	4 (2015/2016–2020)

<i>ID#</i>	<i>Previous recommendation for the issue</i>	<i>Number of successive reviews issue not addressed^a</i>
	contact information for the designated organization and registry administrator, and a description of the standardized electronic database applied for registry performance and publicly accessible information).	
G.11	Report any change to the national registry (since the previous annual submission) in the NIR in accordance with decision 15/CMP.1, annex, paragraph 22.	3 (2017–2020)
G.12	Report in the NIR information in accordance with decision 15/CMP.1, annex, paragraphs 12–18, in conjunction with decision 3/CMP.11, including on information reported in the SEF tables; discrepancies and notification; publicly accessible registry information; and the calculation of the CPR.	3 (2017–2020)
Energy		
E.1	Provide information on how emissions are estimated by including information on efforts to reconcile energy balance and EU ETS data, as well as additional information on the use of EU ETS data and an explanation of how the time-series consistency of the emission estimates is ensured.	5 (2013–2020)
E.5	Correct the AD for 2013 (i.e. report liquid fuel consumption as “NO”) and explain the inter-annual variation in the AD and CO ₂ , CH ₄ and N ₂ O emissions in the NIR.	3 (2017–2020)
E.15	Report in the NIR on any progress achieved in improving the consistency of the time series.	4 (2015/2016–2020)
IPPU		
I.3	Further examine whether PFC and NF ₃ emissions from product uses as substitutes for ozone-depleting substances occur in the country and, as appropriate, report estimates or report an appropriate notation key (i.e. “NO”) in the corresponding CRF tables.	4 (2015/2016–2020)
I.4	Further examine whether emissions from manufacturing of refrigeration and air-conditioning equipment occur in the country and, as appropriate, report values or revise the use of the notation keys reported.	6 (2013–2020)
I.7	Recalculate SF ₆ emissions from electrical equipment, N ₂ O emissions from medical applications and N ₂ O emissions from other – propellant for pressure and aerosol products, and include up-to-date values for population and average per capita emissions and update the values reported in CRF tables 2(I).A-Hs2 and 2(II)B-Hs2.	3 (2017–2020)
Agriculture		
No issues identified.		
LULUCF		
L.1	Report the areas converted to a different land use under the relevant land-use conversion category for 20 consecutive years before reporting them under the corresponding land remaining category.	5 (2013–2020)
L.2	Explore the use of, where relevant, the carbon stock change factors and assumptions used for the estimation of the carbon stock changes in biomass, deadwood and litter, and ensure comparability between the land-use changes both to and from a category.	5 (2013–2020)
L.3	Report “NO” for any category, pool and/or gas for which there is information confirming that it does not occur, and provide such information in the NIR, and report “NE” for categories, pools and/or gases for which there is no information on emissions or removals or for which net emissions or removals are negligible.	5 (2013–2020)

<i>ID#</i>	<i>Previous recommendation for the issue</i>	<i>Number of successive reviews issue not addressed^a</i>
L.4	Report all mandatory carbon pools.	5 (2013–2020)
L.9	Provide the missing estimates of emissions from forest fires for land converted to forest land for 2011.	5 (2013–2020)
Waste		
W.6	Provide information in the NIR, under category-specific planned improvements, on whether any plans are in place to move to higher-tier methods as this category has been identified as key.	3 (2017–2020)
W.7	Account for the component of organic material and nitrogen removed as sludge, because it is reported that there are good data sources for sludge in Cyprus, and explain any recalculations for categories 5.D.1 and 3.D.1.a.2.b resulting from this change.	3 (2017–2020)
KP-LULUCF		
KL.1	Implement the workplan to report any emissions or removals from activities under Article 3, paragraphs 3–4, of the Kyoto Protocol, and apply method 2 from the Kyoto Protocol Supplement to address information on geographical location; complete by 2018 a map of woody forest vegetation in State and private forests, with a minimum mapping unit of 0.3 ha; acquire or utilize satellite information to obtain the areas of AD for FM and the geographical location; and acquire capacity-building assistance to estimate non-CO ₂ emissions.	4 (2015/2016–2020)
KL.2	Report on the progress of implementation of the workplan designed to report any emissions or removals from activities under Article 3, paragraphs 3–4, of the Kyoto Protocol.	4 (2015/2016–2020)
KL.3	Clarify in the NIR how the losses of carbon stock calculated using the IPCC default biomass gain–loss method have been calculated and what types of loss have been considered.	4 (2015/2016–2020)
KL.4	Include estimates of the background level and margin.	4 (2015/2016–2020)
KL.5	Enter the FM cap in the accounting table.	3 (2017–2020)
KL.6	Revise the area of forest included in the land-transition matrix in order to be consistent with that reported in CRF tables NIR-2 and 4(KP-1)B.1.	3 (2017–2020)

^a The report on the review of the 2018 annual submission of Cyprus has not yet been published. Therefore, 2018 was not included when counting the number of successive years for this table. In addition, as the reviews of the Party's 2015 and 2016 annual submissions were conducted together, they are not considered successive reviews and 2015/2016 is counted as one year.

V. Additional findings made during the individual review of the Party's 2020 annual submission

10. Table 5 presents findings made by the ERT during the individual review of the 2020 annual submission of Cyprus that are additional to those identified in table 3.

Table 5

Additional findings made during the individual review of the 2020 annual submission of Cyprus

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding with recommendation or encouragement</i>	<i>Is finding an issue/problem?^a</i>
General			
G.13	Annual submission	<p>In the sectoral chapters of the NIR, Cyprus reported GHG emission estimates for the base year (1990), 2000, 2005, 2010, 2015 and the most recent two years (2017–2018) of the inventory time series. The ERT noted that this is not in accordance with paragraph 48 of annex I to decision 24/CP.19 and hampered efforts to review the emission trends for each sector. During the review, the Party stated that the reporting on emission trends will be corrected in the next inventory submission.</p> <p>The ERT encourages Cyprus to include in the overview and sectoral chapters of the NIR GHG emission data for the base year, the most recent 10 years and any previous years since the base year ending with 0 or 5 (1995, 2000, etc.), in accordance with paragraph 48 of the UNFCCC Annex I inventory reporting guidelines.</p>	Not an issue/problem
G.14	Article 3, paragraph 14, of the Kyoto Protocol	<p>Cyprus did not provide information on changes to its reporting on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol. During the review, the Party clarified that there have been no changes in its reporting under Article 3, paragraph 14, of the Kyoto Protocol and that this will be clarified in its next submission. The ERT concluded that the information provided is incomplete.</p> <p>The ERT recommends that Cyprus report any changes to the information provided under Article 3, paragraph 14, of the Kyoto Protocol in accordance with decision 15/CMP.1 in conjunction with decision 3/CMP.11.</p>	Yes. KP reporting adherence
G.15	CRF tables	<p>There are blank cells in the CRF tables for the IPPU, agriculture and LULUCF sectors and in CRF summary tables 2 (2.B and 2.G for fluorinated gases) and 3 (1.B, 2.B, 2.C, 4.B–4.F and 5.C). Some missing information relates to emissions, and these completeness issues are addressed in ID#s E.14, I.4, L.4, L.9, W.4 and W.5 in table 3 and ID# I.14 below. Other missing information relates to AD or other additional information. During the review, the Party stated that the blank cells in the CRF tables will be completed for the next submission.</p> <p>The ERT recommends that Cyprus complete the blank cells in the CRF tables for the IPPU, agriculture and LULUCF sectors and CRF summary tables 2 (2.B and 2.G for fluorinated gases) and 3 (1.B, 2.B, 2.C, 4.B–4.F and 5.C).</p>	Yes. Comparability
G.16	Uncertainty analysis	<p>Cyprus conducted a quantitative uncertainty analysis for the base year and the latest inventory year, applying approach 1 from the 2006 IPCC Guidelines. The results of the assessment, excluding the LULUCF sector, were provided in the NIR (annex, tables A.2.2–A.2.3). However, Cyprus did not explain how the uncertainty estimates helped it to prioritize its efforts to improve the accuracy of future national inventories and to guide its methodological decisions, which is not in accordance with paragraph 42 of the UNFCCC Annex I inventory reporting guidelines. During the review, the Party clarified that the uncertainty estimates helped it to prioritize areas for which further data were needed and encouraged it to collaborate with local experts and seek supporting data from local studies. It added that this information will be included in the next submission.</p> <p>The ERT recommends that the Party include information in the NIR on how the uncertainty estimates help it to prioritize its efforts to improve the accuracy of the national inventory and to guide its methodological decisions.</p>	Yes. Convention reporting adherence

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue/problem? ^a
Energy			
E.19	1.A Fuel combustion – sectoral approach – solid biomass – CO ₂ , CH ₄ and N ₂ O	<p>For 2017, IEA reported apparent solid biomass consumption of 1,037 TJ for Cyprus, which is 4.5 per cent higher than the value of 990 TJ given in CRF table 1.A(b). During the review, the Party clarified that the IEA value is correct and will be reported in the next submission. The ERT estimated that the CH₄ and N₂O emissions from solid biomass combustion, estimated on the basis of the correct AD, would increase by 0.09 kt CO₂ eq. This equates to 0.0005 per cent of national total emissions for 2018 (excluding LULUCF), which is below the significance threshold (4.41 kt CO₂ eq for 2018) for commencement of an adjustment procedure in accordance with decision 22/CMP.1, annex, paragraph 80(b), in conjunction with decision 4/CMP.11.</p> <p>The ERT recommends that the Party revise its estimates of CO₂, CH₄ and N₂O emissions from solid biomass on the basis of the correct AD and report the impact of the correction in the NIR.</p>	Yes. Accuracy
E.20	1.A Fuel combustion – sectoral approach – other biomass – CO ₂ , CH ₄ and N ₂ O	<p>For 2016, IEA reported apparent liquid biomass consumption of 372 TJ, which is 27.4 per cent higher than the value of 270 TJ given in CRF table 1.A(b). Similarly, for other non-fossil fuels (biogenic waste), IEA reported apparent consumption of 427 TJ, while “NO” was reported in CRF table 1.A(b). During the review, the Party clarified that liquid biomass consumption for 2016 was correctly reported as 270 TJ on the basis of the energy balance provided by the national Statistical Service. However, the IEA value of 427 TJ for biogenic waste consumption for 2016 is correct and will be reported in the next submission. The ERT estimated that CH₄ and N₂O emissions from biogenic waste consumption, estimated on the basis of the correct AD, would increase by 0.78 kt CO₂ eq. This equates to 0.004 per cent of national total emissions for 2018 (excluding LULUCF), which is below the significance threshold (4.41 kt CO₂ eq for 2018) for commencement of an adjustment procedure in accordance with decision 22/CMP.1, annex, paragraph 80(b), in conjunction with decision 4/CMP.11.</p> <p>The ERT recommends that the Party include the estimates of CO₂, CH₄ and N₂O emissions from biogenic waste consumption on the basis of the correct AD and report the impact of the correction in the NIR.</p>	Yes. Accuracy
IPPU			
I.10	2. General (IPPU) – HFCs, SF ₆ and N ₂ O	<p>The Party employed the surrogate method on the basis of population and emission data for similar countries for estimating HFC emissions from foam blowing agents (2.F.2), fire protection (2.F.3) and aerosols (2.F.4), SF₆ emissions from electrical equipment (2.G.1) and N₂O emissions from other (2.G.3.b), as described in the NIR (sections 4.6–4.7, pp.125–143). The Party chose different groups of countries for the surrogate data without explaining its criteria or providing any justification in the NIR. For example, it used four countries (Greece, Italy, Malta and Spain) for category 2.G.1, three countries (Greece, Italy and Spain) for categories 2.F.2–2.F.4 and only one country (Greece) for category 2.G.3.b. During the review, the Party explained that the countries considered (Greece, Italy, Malta and Spain) have similar economic and social conditions to Cyprus, and there were sufficient data about them to enable a surrogate data analysis. It stated that this explanation will be included in the NIR of the next submission. The ERT noted that the description of the methodology used for estimating emissions for categories 2.F.2, 2.F.3, 2.F.4, 2.G.1 and 2.G.3.b was not transparently explained in the NIR as recommended in paragraph 50(a) of the UNFCCC Annex I inventory reporting guidelines.</p>	Yes. Transparency

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding with recommendation or encouragement</i>	<i>Is finding an issue/problem?^a</i>
		The ERT recommends that the Party include in its NIR justification, and a description of the criteria used, for selecting countries for surrogate data for estimating HFC emissions for categories 2.F.2, 2.F.3, 2.F.4, 2.G.1 and 2.G.3.b.	
I.11	2. General (IPPU) – all gases	<p>The Party included in the NIR (table 4.2, p.107) an assessment of the completeness of emission categories and GHGs estimated for the IPPU sector. Most of the cells in the table were left blank without any explanation. During the review, the Party explained that the cells were left blank for gases that were not emitted during the industrial processes in question. The Party provided the ERT with a copy of NIR table 4.2 duly completed with the appropriate notation keys. The ERT concluded that the information provided by the Party during the review demonstrated that there is no completeness issue associated with the cells that were left blank in NIR table 4.2 but rather that this is a transparent issue.</p> <p>The ERT recommends that the Party include in the NIR an assessment of the completeness of categories and emissions estimated for the IPPU sector, with an explanation for each category and gas for which no emissions are estimated, for example by reporting relevant notation keys in NIR table 4.2.</p>	Yes. Transparency
I.12	2. General (IPPU) – CO ₂	<p>The Party estimated indirect CO₂ emissions from atmospheric oxidation of CH₄, carbon monoxide and non-methane volatile organic compounds for the categories dry cleaning, coating applications, chemical products, asphalt roofing, domestic solvent use, road paving with asphalt, printing, other (2.D.3) and tobacco combustion (2.G.4). Indirect CO₂ emissions were reported in the CRF tables as direct CO₂ emissions and included in the national total, which is not in accordance with paragraph 29 of the UNFCCC Annex I inventory reporting guidelines. For 2018, indirect CO₂ emissions from the above-mentioned categories amounted to 25.55 kt CO₂, or 0.29 per cent of the national total. During the review, the Party stated that the issue will be resolved for the next annual submission.</p> <p>The ERT recommends that the Party ensure that indirect emissions are not included in national total direct emissions. It also recommends that the Party report the national totals in the relevant CRF tables including and excluding indirect CO₂, as required by paragraph 29 of the UNFCCC Annex I inventory reporting guidelines.</p>	Yes. Accuracy
I.13	2.A.1 Cement production – CO ₂	<p>NIR table 4.6 (p.111) contains estimates of CO₂ emissions from cement production (category 2.A.1) for 1997–2018 but AD for the same category for 1990–2018. AD and CO₂ emissions for category 2.A.1 were comprehensively and consistently reported in CRF table 2(I).A-Hs1 for 1990–2018. However, the NIR does not contain any explanation for the lack of CO₂ emission data for 1990–1996 in NIR table 4.6. During the review, the Party explained that CO₂ process emissions for category 2.A.1 for 1990–1996 were mistakenly omitted from the NIR and that the matter will be addressed for the next submission.</p> <p>The ERT recommends that the Party include in the NIR emission estimates for cement production (category 2.A.1) for the entire inventory time series.</p>	Yes. Transparency
I.14	2.B.5 Carbide production – CO ₂	<p>The Party reported in the NIR (p.118) that calcium carbide was imported into Cyprus but did not clarify whether the use of calcium carbide in the country generated CO₂ emissions. During the review, the Party stated that it was unable to provide any data on the importation and intended use of calcium carbide but that this issue will be addressed for the next submission. The ERT considers the use of calcium carbide in Cyprus as a potential source of CO₂ emissions, for example from acetylene production. Employing the surrogate method, using as a basis the emission and population data of neighbouring countries, the ERT estimated that CO₂ emissions from calcium</p>	Yes. Completeness

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue/problem? ^a
		<p>carbide use in Cyprus would amount to 0.06 kt for 2018, or 0.0007 per cent of the national total excluding LULUCF, which is below the significance threshold (4.41 kt CO₂ eq for 2018) for commencement of an adjustment procedure in accordance with decision 22/CMP.1, annex, paragraph 80(b), in conjunction with decision 4/CMP.11. However, the ERT considered that the inventory is incomplete because CO₂ emissions from calcium carbide were not estimated.</p> <p>The ERT recommends that the Party explain in the NIR how imported calcium carbide is used in the country and through which processes CO₂ emissions are generated (e.g. acetylene production). It also recommends that the Party estimate any CO₂ emissions from calcium carbide use by applying the corresponding EF from the 2006 IPCC Guidelines (vol. 3, chap. 3) and report these emissions in the NIR and CRF tables.</p>	
I.15	2.D.1 Lubricant use – CO ₂	<p>The Party reported in the NIR (table 3.31, p.98) CO₂ emissions of 22.59 kt from lubricant use under the energy sector for 2018. However, it also reported CO₂ emissions of 4.52 kt from lubricant use under the IPPU sector in the NIR (table 4.13, p.119). During the review, Cyprus clarified that the energy balance data provided by the national Statistical Service indicated only the total amount of lubricant used, and that it was unable to disaggregate lubricant use by category (e.g. for two-stroke engines and other uses). As a result, the Party used the same AD for estimating CO₂ emissions from lubricant use under both the energy and IPPU sector. The ERT concluded that CO₂ emissions from lubricant use were double counted.</p> <p>The ERT recommends that the Party revise its estimated CO₂ emissions from lubricant use by allocating lubricants used in two-stroke engines to the energy sector and all other lubricants to the IPPU sector in order to avoid double counting.</p>	Yes. Accuracy
I.16	2.D.1 Lubricant use – CO ₂	<p>The AD reported for lubricant use in CRF table 2(I).A-H (sheet 2) were expressed in TJ instead of kt. As a result, the CO₂ IEF for emissions from lubricant use (category 2.D.1) in Cyprus, reported as 0.01 t/t, is significantly lower than the CO₂ IEFs of other Parties included in Annex I to the Convention (0.54–0.61 t/t). During the review, the Party provided the ERT with AD for lubricant consumption expressed in kt.</p> <p>The ERT recommends that the Party report in CRF table 2(I).A-H (sheet 2) AD for lubricant use (category 2.D.1) in kt instead of TJ to ensure comparability among Parties included in Annex I to the Convention.</p>	Yes. Comparability
I.17	2.D.3 Other (non-energy products from fuels and solvent use) – CO ₂	<p>The Party reported under category 2.D.3 CO₂ emissions from use of urea-based catalysts in vehicles for 1990–2018, for which it estimated the AD by applying the factor of 2 per cent (1–3 per cent range) from the 2006 IPCC Guidelines (vol. 2, section 3.2.1) to the total diesel consumed by road transport vehicles for 1990–2018. However, the Party estimated CO₂ emissions for years when urea-based catalysts had yet to be introduced (before the adoption of the Euro V and VI emission standards for road transport) and vehicle types (e.g. bus, truck, car) and classes (e.g. Euro IV, V, VI) were not taken into account. During the review, the Party stated that it is working on adjusting the COPERT model parameters to ascertain vehicle types and the number of vehicles with Euro V or later engines, and that it will address this issue for the next submission.</p> <p>The ERT recommends that the Party revise its estimates of CO₂ emissions from use of urea-based catalysts in vehicles on the basis of the applicable inventory years and taking into consideration vehicle class (e.g. EURO IV, V, VI) and type (e.g. bus, truck, car).</p>	Yes. Accuracy

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding with recommendation or encouragement</i>	<i>Is finding an issue/problem?^a</i>
I.18	2.G Other product manufacture and use – N ₂ O and SF ₆	<p>While the Party did not report N₂O or SF₆ emissions for various subcategories of category 2.G in the NIR (table 4.26, p.140) for 2018, or AD for category 2.G.1 for 2016–2018 (table 4.27, p.142), or SF₆ emissions for 2017–2018 (table 4.28, pp.142–143), it did report the corresponding emission data in CRF tables 2(I).A-Hs2 and 2(II)B-H (sheet 2). During the review, the Party acknowledged the missing data from NIR tables 4.26–4.28 and clarified that the tables are not up to date because it is developing new methodologies for subcategories of category 2.G, and it will resolve this issue for the next submission.</p> <p>The ERT recommends that the Party include in NIR tables 4.26–4.28 N₂O and SF₆ emission estimates and AD for the latest years of the time series.</p>	Yes. Transparency
I.19	2.G.3 N ₂ O from product uses – N ₂ O	<p>N₂O emissions from medical applications (category 2.G.3.a) were reported in NIR table 4.30 (p.145) as CO₂ and expressed in NIR figure 4.16 (p.145) in kt instead of Gg CO₂ eq. During the review, the Party provided the ERT with revised versions of NIR table 4.30 and figure 4.16.</p> <p>The ERT recommends that the Party use in NIR table 4.30 and figure 4.16 the appropriate units (i.e. kt N₂O) for reporting N₂O emissions from medical applications (category 2.G.3.a).</p>	Yes. Transparency
Agriculture			
A.5	3.B.3 Swine – CH ₄	<p>The ERT observed significant inter-annual variations in the treatment practices for market swine manure, as reported in the NIR (table 5.13, p.157), including reductions in the amount of manure subject to anaerobic digestion or aerobic treatment of 12.5 per cent from 2011 to 2012, 14.2 per cent from 2013 to 2014, 8.2 per cent from 2016 to 2017 and 9.2 per cent from 2017 to 2018. The Party reported in its NIR (p.157) that it obtained information on waste management practices from the Pollution Control Unit, but did not provide a clear explanation for the above-mentioned inter-annual variations. During the review, the Party explained that the AD are correct but did not provide any additional rationale for the changes in allocation between aerobic treatment and anaerobic digestion.</p> <p>The ERT recommends that the Party provide a clear explanation in its NIR for the change in allocation of market swine manure between aerobic treatment and anaerobic digestion from 2011 onward.</p>	Yes. Transparency
LULUCF			
L.10	4. General (LULUCF) – CO ₂	<p>The ERT considers the emission and removal values for land converted to forest land, land converted to wetlands, land converted to settlements and land converted to other land reported in the NIR (figures 6.3, 6.7, 6.8 and 6.9, respectively) to be incorrect because the values for CO₂ sinks are presented as positive and those for CO₂ emissions as negative. During the review, the Party stated that the figures will be inverted in the next submission.</p> <p>The ERT encourages the Party to implement adequate QA/QC procedures to ensure that CO₂ emissions are always reported as positive values.</p>	Not an issue/problem
L.11	Land representation – CO ₂ , CH ₄ and N ₂ O	<p>The Party used AD derived from interpolations and extrapolations of CORINE land-use maps for 2000, 2006 and 2012. The ERT noted that this issue might lead to a high level of uncertainty if the Party does not use a recent CORINE land-use map. During the review, the Party clarified that it acquired a 2018 CORINE land-cover map and intends to use it for identifying land areas for the next submission.</p> <p>The ERT recommends that the Party use the 2018 CORINE land-cover map for its next submission to ensure consistency of the AD used for land representation for the whole time series.</p>	Yes. Accuracy

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue/problem? ^a
L.12	4.A Forest land – CO ₂ , CH ₄ and N ₂ O	<p>The Party explained in its NIR (p.189) that all emissions from forest fires were reported under forest land remaining forest land and that the default combustion factor of 0.45 was used in the calculations. No further information was provided in the NIR. The ERT recommends that, for the sake of transparency, the Party provide the AD and parameters used for calculating emissions from fires. During the review, the Party clarified that the Department of Forests of Cyprus provided it with AD for 1990–2018.</p> <p>The ERT recommends that the Party include in its next submission AD for forest fires and any other coefficients and parameters used in calculating forest fire emissions.</p>	Yes. Transparency
L.13	4.A.1 Forest land remaining forest land – CO ₂	<p>The Party explained in its NIR (p.188) that the annual increment of forest areas and other wooded land areas includes the volume of trees harvested that year, and that national data on growing stock and volume increment are averaged over the entire net area of forest for that year (i.e. the area of forest remaining forest plus the areas converted to forest minus the areas converted from forest to other uses for that year). The Party also provided in the NIR (table 6.6, p.188) increment values for coniferous and deciduous forest. The ERT considers that the explanation of the increment estimations in the NIR is not transparent because it lacks information on how harvest amounts are included in increment calculations. During the review, the Party provided additional information and stated that the national forest inventory provides data on harvest and salvage logging. However, none of this information was included in the NIR.</p> <p>The ERT encourages the Party to more fully describe the methodology that it uses for estimating the annual increment of forest areas and other wooded land areas, for example by including data from the national forest inventory on harvest and salvage logging.</p>	Not an issue/problem
L.14	4.B.1 Cropland remaining cropland – CO ₂	<p>The Party reported removals for perennial cropland under the cropland remaining cropland subcategory, explaining in the NIR (p.195) that it used default EFs from the 2006 IPCC Guidelines (table 6.5.1, p.5.9) for estimating the carbon stock and net annual increment for woody croplands because there are no national data. The implied carbon stock change factor for living biomass is given in CRF table 4.B as 0.90 for gains and 0.75 for losses for 2018, resulting in a net accumulation of 0.15 t C/ha. The Party clarified that it uses 1.8 t C ha⁻¹ year⁻¹ for biomass accumulation and 9.0 t C ha⁻¹ year⁻¹ for carbon loss with a harvest cycle of five years. The ERT concludes that, since there is no information about the carbon stocks of perennial cropland and management approaches (pruning, harvest cycle, etc.), the Party should assume that there will be five age-classes with equal areas and one fifth of the perennial cropland area will be subject to harvest annually, since the ecosystem is in equilibrium and a harvest period of five years is accepted. The ERT considers that in this case removals due to growth for each age-class will be offset by the harvested area. Therefore, the ERT considers the application of a tier 1 assumption of equilibrium to be appropriate for the Party's national circumstances. During the review, the Party indicated that it will revise the methodology as suggested and the issue will be resolved for the next submission.</p> <p>The ERT recommends that the Party assume that the growth and harvest of orchards in the country cancel each other out and therefore carbon stocks for living biomass are in equilibrium, and report "NA" in CRF table 4.B.</p>	Yes. Accuracy
L.15	4.B.1 Cropland remaining cropland – CO ₂	<p>The Party did not account for areas of land converted to woody cropland in the total areas of woody cropland reported in NIR table 6.9 (p.193). For example, the total area of woody cropland (120.37 kha) reported for 2018 should be the sum of areas for previous years (119.82 kha) plus areas of conversion reported since 1998, minus</p>	Yes. Convention reporting adherence

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue/problem? ^a
		<p>areas of woody cropland converted to other land uses in 2017. During the review, the Party provided a revised version of the table in question.</p> <p>The ERT recommends that the Party correct the errors in NIR table 6.9 (p.193) for its next submission.</p>	
L.16	4.C.1 Grassland remaining grassland – CO ₂	<p>In its NIR (p.199) the Party reported woody and non-woody grassland separately and it estimated carbon accumulation from woody grassland using the default coefficients from the 2006 IPCC Guidelines (vol. 4, chap. 6, table 6.5.1). In CRF table 4.C, it reported an IEF of 1.48 t C/ha for gains and 1.24 t C/ha for losses, resulting in a net accumulation of 0.25 t C/ha for biomass. The ERT concludes that, since there is no information on the carbon stocks of woody grassland or management approaches employed (age, harvest cycle, etc.), the Party should assume that there will be five age-classes with equal areas and one fifth of the woody grassland area will be subject to harvest annually, since the ecosystem is in equilibrium and a harvest period of five years is accepted. The ERT considers that in this case the removals due to growth for each age-class will be offset by the harvested area. Therefore, the ERT considers the application of a tier 1 assumption of equilibrium to be appropriate for the Party's national circumstances. During the review, the Party indicated that it will revise the methodology as suggested and the issue will be resolved for the next submission.</p> <p>The ERT recommends that the Party assume that the growth and harvest of woody grassland in the country cancel each other out and therefore carbon stocks for living biomass are in equilibrium, and report "NA" in CRF table 4.C.</p>	Yes. Accuracy
L.17	4.D.2.2 Land converted to flooded land – CO ₂	<p>The Party reported removals of 3.27 t C/ha/year for mineral soils under conversion of land to wetlands in CRF table 4.D for 2018. During the review, the Party clarified that land converted to wetlands actually consists of newly constructed dams and flooded mines and construction sites, which is not in line with the 2006 IPCC Guidelines (vol. 4, section 7.3.2). The ERT notes that, according to the 2006 IPCC Guidelines, only emissions from biomass are to be reported for this category.</p> <p>The ERT recommends that the Party report only emissions for newly constructed dams and flooded mines and construction sites, attributable to instantaneous oxidation of biomass for the year of conversion.</p>	Yes. Accuracy
Waste		No findings for the waste sector additional to those included in table 3 were made by the ERT during the review.	
KP-LULUCF			
KL.7	General (KP-LULUCF) – CO ₂	<p>In its NIR (table 11.12, p.277) the Party provided information on the areas subject to AR and deforestation since 1990 that do not match the area values reported in CRF table 4(KP-1) for the same activities. During the review, the Party stated that the correct area data are the data presented in CRF table 4(KP-1), and that NIR table 11.12 should contain the same data as reported in the CRF tables. It indicated that this will be corrected for the next submission.</p> <p>The ERT recommends that the Party ensure that the areas of AR and deforestation reported in the NIR are consistent with the areas of AR and deforestation reported in the CRF tables.</p>	Yes. KP reporting adherence
KL.8	General (KP-LULUCF) – CO ₂	<p>Cyprus provided a chapter related to reporting on KP-LULUCF in the NIR. However, Cyprus did not provide in the NIR the information for AR and deforestation required under Article 3, paragraph 3, of the Kyoto Protocol and for FM under Article 3, paragraph 4, of the Kyoto Protocol for the second commitment period, as required by decision</p>	Yes. KP reporting adherence

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue/problem? ^a
		<p>2/CMP.8, annex II, paragraphs 2(g)(iii), 2(g)(iv), 2(g)(vi) and 5(e), on KP-LULUCF. During the review, Cyprus informed the ERT that the information required by decision 2/CMP.8, annex II, will be included in the next submission. The ERT included this issue in the list of potential problems and further questions raised by the ERT and recommended that Cyprus provide the required information on KP-LULUCF in accordance with decision 2/CMP.8, annex II, paragraphs 2(g)(iii), 2(g)(iv), 2(g)(vi) and 5(e). The ERT also recommended that Cyprus apply, as appropriate, the methodologies provided in the 2006 IPCC Guidelines (vol. 4) and the Kyoto Protocol Supplement for obtaining the requested information. In response to the list of potential problems and further questions raised by the ERT, Cyprus provided the missing information required by decision 2/CMP.8, annex II. The ERT considers that the Party's response resolved the potential problem.</p> <p>The ERT recommends that Cyprus provide information on AR, deforestation and FM in accordance with decision 2/CMP.8, annex II, paragraphs 2(g)(iii), 2(g)(iv), 2(g)(vi) and 5(e), on KP-LULUCF. It also recommends that Cyprus apply, as appropriate, the methodology provided in the 2006 IPCC Guidelines (vol. 4) and the Kyoto Protocol Supplement for obtaining the above-mentioned information.</p>	
KL.9	Deforestation – CO ₂	<p>The ERT observed inconsistencies between the estimated emissions for deforestation reported in NIR table 11.1 (p.264) and CRF table 4(KP). During the review, the Party clarified that an error in CRF table 4(KP.I).A.2 had been reproduced in CRF table 4(KP), and provided a revised version of CRF table 4(KP.I).A.2.</p> <p>The ERT recommends that the Party correct CRF tables 4(KP.I).A.2 and 4(KP) for its next submission and ensure consistency between the NIR and the CRF tables.</p>	Yes. KP reporting adherence
KL.10	FM – CO ₂	<p>The ERT observed inconsistencies between the estimated emissions for FM reported in NIR table 11.1 (p.264) and CRF table 4(KP). During the review, the Party clarified that an error in CRF table 4(KP.I).B.1 related to harvested wood product data had been reproduced in CRF table 4(KP), and provided a revised version of CRF table 4(KP.I).B.1.</p> <p>The ERT recommends that the Party correct CRF tables 4(KP.I).B.1 and 4(KP) for its next submission and ensure consistency between the NIR and the CRF tables.</p>	Yes. KP reporting adherence
KL.11	FM – CO ₂	<p>The Party's FMRL is derived from a linear extrapolation of historical emission data (1990–2008) for forest land remaining forest land. However, the ERT noted that the Party has improved its methodology for FM and revised its estimates since initially calculating the FMRL.</p> <p>The ERT recommends that the Party make a technical correction to the FMRL on the basis of its improved methodology for FM and revised estimates.</p>	Yes. Accuracy

^a Recommendations made by the ERT during the review are related to issues as defined in para. 81 of the UNFCCC review guidelines or problems as defined in para. 69 of the Article 8 review guidelines.

VI. Application of adjustments

11. The ERT did not identify the need to apply any adjustments for the 2020 annual submission of Cyprus.

VII. Accounting quantities for activities under Article 3, paragraph 3, and, if any, activities under Article 3, paragraph 4, of the Kyoto Protocol

12. Cyprus elected commitment period accounting and therefore the issuance and cancellation of units for KP-LULUCF is not applicable to the 2020 review.

VII. Questions of implementation

13. No questions of implementation were identified by the ERT during the individual review of the Party's 2020 annual submission.

Annex I

Overview of greenhouse gas emissions and removals and data and information on activities under Article 3, paragraphs 3–4, of the Kyoto Protocol, as submitted by Cyprus in its 2020 annual submission

1. Tables I.1–I.4 provide an overview of the total GHG emissions and removals as submitted by Cyprus.

Table I.1
Total greenhouse gas emissions for Cyprus, base year^a–2018
(kt CO₂ eq)

	Total GHG emissions excluding indirect CO ₂ emissions		Total GHG emissions including indirect CO ₂ emissions ^b		Land-use change (Article 3.7 bis as contained in the Doha Amendment) ^c	KP-LULUCF (Article 3.3 of the Kyoto Protocol) ^d	KP-LULUCF (Article 3.4 of the Kyoto Protocol)	
	Total including LULUCF	Total excluding LULUCF	Total including LULUCF	Total excluding LULUCF			CM, GM, RV, WDR	FM
FMRL								–157.00
Base year	5 524.21	5 743.18	NA	NA	NA		NO	
1990	5 471.47	5 690.44	NA	NA				
1995	6 905.09	7 143.86	NA	NA				
2000	8 422.54	8 457.56	NA	NA				
2010	9 120.01	9 518.12	NA	NA				
2011	8 732.47	9 167.14	NA	NA				
2012	8 210.10	8 631.48	NA	NA				
2013	7 476.14	7 915.92	NA	NA		–36.93	NO	–140.71
2014	7 855.59	8 291.26	NA	NA		–42.28	NO	–141.29
2015	7 913.60	8 345.50	NA	NA		–41.06	NO	–139.69
2016	8 744.32	8 794.10	NA	NA		–36.29	NO	96.51
2017	8 555.18	8 974.40	NA	NA		–37.18	NO	–143.78
2018	8 412.39	8 811.61	NA	NA		–35.07	NO	–134.94

Note: Emissions and removals reported in the sector other (sector 6) are not included in the total GHG emissions.

^a “Base year” refers to the base year under the Kyoto Protocol, which is 1990 for CO₂, CH₄ and N₂O, and 1995 for HFCs, PFCs, SF₆ and NF₃. Cyprus has not elected any activities under Article 3, para. 4, of the Kyoto Protocol. For activities under Article 3, para. 3, of the Kyoto Protocol and FM under Article 3, para. 4, only the inventory years of the commitment period must be reported.

^b The Party did not report indirect CO₂ emissions in CRF table 6.

^c The value reported in this column relates to 1990.

^d Activities under Article 3, para. 3, of the Kyoto Protocol, namely AR and deforestation.

Table I.2

Greenhouse gas emissions by gas for Cyprus, excluding land use, land-use change and forestry, 1990–2018(kt CO₂ eq)

	<i>CO₂^a</i>	<i>CH₄</i>	<i>N₂O</i>	<i>HFCs</i>	<i>PFCs</i>	<i>Unspecified mix of HFCs and PFCs</i>	<i>SF₆</i>	<i>NF₃</i>
1990	4 656.89	661.43	292.49	79.60	NO	NO	0.03	NO
1995	5 882.27	750.07	379.16	132.31	NO	NO	0.06	NO
2000	7 145.88	792.52	349.97	169.12	NO	NO	0.08	NO
2010	8 089.01	831.91	321.21	275.84	NO	NO	0.15	NO
2011	7 759.47	837.10	308.55	261.86	NO	NO	0.16	NO
2012	7 234.89	826.52	303.41	266.50	NO	NO	0.16	NO
2013	6 554.36	820.46	280.19	260.75	NO	NO	0.15	NO
2014	6 934.59	820.84	275.50	260.18	NO	NO	0.15	NO
2015	6 960.13	832.43	283.05	269.72	NO	NO	0.16	NO
2016	7 368.23	858.37	290.40	276.93	NO	NO	0.17	NO
2017	7 515.69	875.26	295.58	287.70	NO	NO	0.17	NO
2018	7 332.76	884.55	297.00	297.14	NO	NO	0.17	NO
Percentage change 1990–2018	57.5	33.7	1.5	273.3	NA	NA	541.6	NA

Note: Emissions and removals reported in the sector other (sector 6) are not included in this table.

^a Cyprus did not report indirect CO₂ emissions in CRF table 6.

Table I.3

Greenhouse gas emissions by sector for Cyprus, 1990–2018(kt CO₂ eq)

	<i>Energy</i>	<i>IPPU</i>	<i>Agriculture</i>	<i>LULUCF</i>	<i>Waste</i>	<i>Other</i>
1990	3 972.44	853.25	471.41	-218.97	393.34	
1995	5 135.42	992.65	580.26	-238.77	435.53	
2000	6 379.92	1 053.93	552.17	-35.02	471.54	
2010	7 501.87	969.23	531.37	-398.11	515.65	
2011	7 202.00	925.44	520.55	-434.67	519.16	
2012	6 718.93	885.96	497.06	-421.38	529.52	
2013	5 799.49	1 113.30	462.29	-439.78	540.84	
2014	5 962.75	1 329.63	447.69	-435.67	551.20	
2015	6 086.00	1 243.39	456.87	-431.89	559.24	
2016	6 485.44	1 262.44	481.13	-49.78	565.09	

	<i>Energy</i>	<i>IPPU</i>	<i>Agriculture</i>	<i>LULUCF</i>	<i>Waste</i>	<i>Other</i>
2017	6 591.98	1 316.63	494.24	-419.22	571.54	
2018	6 479.73	1 255.77	499.40	-399.22	576.71	
Percentage change 1990–2018	63.1	47.2	5.9	82.3	46.6	NA

Notes: (1) Cyprus did not report emissions or removals in the sector other (sector 6); the corresponding cells in the CRF tables were blank; (2) Cyprus did not report indirect CO₂ emissions in CRF table 6.

Table I.4
Greenhouse gas emissions and removals from activities under Article 3, paragraphs 3–4, of the Kyoto Protocol by activity, base year–2018, for Cyprus
(kt CO₂ eq)

	<i>Article 3.7 bis as contained in the Doha Amendment^a</i>	<i>Activities under Article 3.3 of the Kyoto Protocol</i>		<i>FM and elected activities under Article 3.4 of the Kyoto Protocol</i>				
	<i>Land-use change</i>	<i>AR</i>	<i>Deforestation</i>	<i>FM</i>	<i>CM</i>	<i>GM</i>	<i>RV</i>	<i>WDR</i>
FMRL				-157.00				
Technical correction				NA				
Base year	NA				NO	NO	NO	NO
2013		-37.75	0.82	-140.71	NO	NO	NO	NO
2014		-42.98	0.70	-141.29	NO	NO	NO	NO
2015		-41.64	0.58	-139.69	NO	NO	NO	NO
2016		-36.77	0.47	96.51	NO	NO	NO	NO
2017		-37.55	0.37	-143.78	NO	NO	NO	NO
2018		-35.32	0.26	-134.94	NO	NO	NO	NO
Percentage change base year–2018					NA	NA	NA	NA

Notes: (1) Values in this table include emissions from land subject to natural disturbances, if applicable; (2) Cyprus has elected not to report on any activities under Article 3, para. 4, of the Kyoto Protocol. For activities under Article 3, para. 3, of the Kyoto Protocol, and FM under Article 3, para. 4, only the inventory years of the commitment period must be reported.

^a The value reported in this column relates to 1990.

2. Table I.5 provides an overview of key relevant data from Cyprus's reporting under Article 3, paragraphs 3–4, of the Kyoto Protocol.

Table I.5

Key relevant data for Cyprus under Article 3, paragraphs 3–4, of the Kyoto Protocol from its 2020 annual submission

<i>Parameter</i>	<i>Data values</i>
Periodicity of accounting	(a) AR: commitment period accounting (b) Deforestation: commitment period accounting (c) FM: commitment period accounting (d) CM: not elected (e) GM: not elected (f) RV: not elected (g) WDR: not elected
Elected activities under Article 3, paragraph 4, of the Kyoto Protocol	None
Election of application of provisions for natural disturbances	Yes, for FM
3.5% of total base-year GHG emissions, excluding LULUCF	196.953 kt CO ₂ eq (1 575.626 kt CO ₂ eq for the duration of the commitment period)
Cancellation of AAUs, CERs and ERUs and/or issuance of RMUs in the national registry for:	
1. AR	NA
2. Deforestation	NA
3. FM	NA

Annex II

Information to be included in the compilation and accounting database

Tables II.1–II.6 include the information to be included in the compilation and accounting database for Cyprus. Data shown are from the Party's annual submission, including the latest revised estimates submitted, adjustments (if applicable) and the final data to be included in the compilation and accounting database.

Table II.1

Information to be included in the compilation and accounting database for 2018, including on the commitment period reserve, for Cyprus (t CO₂ eq)

	<i>Original submission</i>	<i>Revised submission</i>	<i>Adjustment</i>	<i>Final value</i>
CPR	Not reported	42 705 115	–	42 705 115
Annex A emissions				
CO ₂	7 332 762	–	–	7 332 762
CH ₄	884 545	–	–	884 545
N ₂ O	296 999	–	–	296 999
HFCs	297 140	–	–	297 140
PFCs	NO	–	–	NO
Unspecified mix of HFCs and PFCs	NO	–	–	NO
SF ₆	165	–	–	165
NF ₃	NO	–	–	NO
Total Annex A sources	8 811 611	–	–	8 811 611
Activities under Article 3, paragraph 3, of the Kyoto Protocol				
AR	–35 323	–	–	–35 323
Deforestation	256	–	–	256
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol				
FM	–134 940	–	–	–134 940

Table II.2

Information to be included in the compilation and accounting database for 2017 for Cyprus (t CO₂ eq)

	<i>Original submission</i>	<i>Revised submission</i>	<i>Adjustment</i>	<i>Final value</i>
Annex A emissions				
CO ₂	7 515 688	–	–	7 515 688
CH ₄	875 263	–	–	875 263
N ₂ O	295 581	–	–	295 581
HFCs	287 702	–	–	287 702
PFCs	NO	–	–	NO
Unspecified mix of HFCs and PFCs	NO	–	–	NO
SF ₆	165	–	–	165
NF ₃	NO	–	–	NO
Total Annex A sources	8 974 399	–	–	8 974 399
Activities under Article 3, paragraph 3, of the Kyoto Protocol				
AR	–37 549	–	–	–37 549
Deforestation	366	–	–	366
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol				
FM	–143 776	–	–	–143 776

Table II.3

Information to be included in the compilation and accounting database for 2016 for Cyprus(t CO₂ eq)

	<i>Original submission</i>	<i>Revised submission</i>	<i>Adjustment</i>	<i>Final value</i>
Annex A emissions				
CO ₂	7 368 228	–	–	7 368 228
CH ₄	858 374	–	–	858 374
N ₂ O	290 400	–	–	290 400
HFCs	276 932	–	–	276 932
PFCs	NO	–	–	NO
Unspecified mix of HFCs and PFCs	NO	–	–	NO
SF ₆	165	–	–	165
NF ₃	NO	–	–	NO
Total Annex A sources	8 794 099	–	–	8 794 099
Activities under Article 3, paragraph 3, of the Kyoto Protocol				
AR	–36 768	–	–	–36 768
Deforestation	474	–	–	474
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol				
FM	96 506	–	–	96 506

Table II.4

Information to be included in the compilation and accounting database for 2015 for Cyprus(t CO₂ eq)

	<i>Original submission</i>	<i>Revised submission</i>	<i>Adjustment</i>	<i>Final value</i>
Annex A emissions				
CO ₂	6 960 129	–	–	6 960 129
CH ₄	832 5428	–	–	832 5428
N ₂ O	283 054	–	–	283 054
HFCs	269 720	–	–	269 720
PFCs	NO	–	–	NO
Unspecified mix of HFCs and PFCs	NO	–	–	NO
SF ₆	164	–	–	164
NF ₃	NO	–	–	NO
Total Annex A sources	8 345 495	–	–	8 345 495
Activities under Article 3, paragraph 3, of the Kyoto Protocol				
AR	–41 641	–	–	–41 641
Deforestation	581	–	–	581
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol				
FM	–139 689	–	–	–139 689

Table II.5

Information to be included in the compilation and accounting database for 2014 for Cyprus(t CO₂ eq)

	<i>Original submission</i>	<i>Revised submission</i>	<i>Adjustment</i>	<i>Final value</i>
Annex A emissions				
CO ₂	6 934 592	–	–	6 934 592
CH ₄	820 841	–	–	820 841
N ₂ O	275 498	–	–	275 498
HFCs	260 180	–	–	260 180
PFCs	NO	–	–	NO

	<i>Original submission</i>	<i>Revised submission</i>	<i>Adjustment</i>	<i>Final value</i>
Unspecified mix of HFCs and PFCs	NO	–	–	NO
SF ₆	148	–	–	148
NF ₃	NO	–	–	NO
Total Annex A sources	8 291 260	–	–	8 291 260
Activities under Article 3, paragraph 3, of the Kyoto Protocol				
AR	–42 979	–	–	–42 979
Deforestation	700	–	–	700
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol				
FM	–141 291	–	–	–141 291

Table II.6

Information to be included in the compilation and accounting database for 2013 for Cyprus(t CO₂ eq)

	<i>Original submission</i>	<i>Revised submission</i>	<i>Adjustment</i>	<i>Final value</i>
Annex A emissions				
CO ₂	6 554 364	–	–	6 554 364
CH ₄	820 464	–	–	820 464
N ₂ O	280 190	–	–	280 190
HFCs	260 751	–	–	260 751
PFCs	NO	–	–	NO
Unspecified mix of HFCs and PFCs	NO	–	–	NO
SF ₆	150	–	–	150
NF ₃	NO	–	–	NO
Total Annex A sources	7 915 920	–	–	7 915 920
Activities under Article 3, paragraph 3, of the Kyoto Protocol				
AR	–37 753	–	–	–37 753
Deforestation	823	–	–	823
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol				
FM	–140 712	–	–	–140 712

Annex III

Additional information to support findings in table 2

Missing categories that may affect completeness

The categories for which estimation methods are included in the 2006 IPCC Guidelines that were reported as “NE” or for which the ERT otherwise determined that there may be an issue with the completeness of the reporting in the Party’s inventory are the following:

- (a) 1.A.3.b.ii Light-duty trucks – liquid fuels (N₂O) (see ID# E.14 in table 3);
- (b) 4.A Forest land remaining forest land – litter, deadwood and soil organic carbon (CO₂) (see ID# L.4 in table 3);
- (c) 4.A Land converted to forest land – living biomass, litter, deadwood and soil organic carbon (CO₂) (see ID# L.4 in table 3);
- (d) 4.A Cropland, grassland, settlements, wetlands and other land – all pools (CO₂) (see ID# L.4 in table 3);
- (e) 4.A.2 Land converted to forest land – forest fires (CO₂, CH₄ and N₂O) (see ID# L.9 in table 3);
- (f) 5.B.2 Anaerobic digestion at biogas facilities (CH₄) (see ID# W.4 in table 3);
- (g) 5.C.1 Waste incineration (CO₂, CH₄ and N₂O) (see ID# W.5 in table 3);
- (h) 5.D Wastewater treatment and discharge (CH₄) (see ID# W.6 in table 3);
- (i) 5.D.1 Domestic wastewater (CH₄ and N₂O) (see ID# W.7 in table 3).

Annex IV

Reference documents

A. Reports of the Intergovernmental Panel on Climate Change

IPCC. 2000. *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*. J Penman, D Kruger, I Galbally, et al. (eds.). Hayama, Japan: IPCC/Organisation for Economic Co-operation and Development/International Energy Agency/Institute for Global Environmental Strategies. Available at <https://www.ipcc.ch/publication/good-practice-guidance-and-uncertainty-management-in-national-greenhouse-gas-inventories/>.

IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendia, K Miwa, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at <http://www.ipcc-nggip.iges.or.jp/public/2006gl>.

IPCC. 2014. *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol*. T Hiraishi, T Krug, K Tanabe, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at <https://www.ipcc.ch/publication/2013-revised-supplementary-methods-and-good-practice-guidance-arising-from-the-kyoto-protocol/>.

IPCC. 2014. *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*. T Hiraishi, T Krug, K Tanabe, et al. (eds.). Geneva: IPCC. Available at <https://www.ipcc.ch/publication/2013-supplement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories-wetlands/>.

B. UNFCCC documents

Annual review reports

Reports on the individual reviews of the 2013, 2015, 2016, 2017 and 2019 annual submissions of Cyprus, contained in documents FCCC/ARR/2013/CYP, FCCC/ARR/2015/CYP, FCCC/ARR/2016/CYP, FCCC/ARR/2017/CYP and FCCC/ARR/2019/CYP, respectively.

Other

Aggregate information on greenhouse gas emissions by sources and removals by sinks for Parties included in Annex I to the Convention. Note by the secretariat. Available at https://unfccc.int/sites/default/files/resource/AGI%202020_final.pdf.

Annual status report for Cyprus for 2020. Available at https://unfccc.int/sites/default/files/resource/asr2020_CYP.pdf.

C. Other documents used during the review

Responses to questions during the review were received from Nicoletta Kythreotou (Ministry of Agriculture, Rural Development and Environment of Cyprus), including additional material on the methodology and assumptions used.
