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Climate Change

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Report on the individual review of the annual submission of Cyprus submitted in 2019*

Note by the expert review team

Summary


Each Party included in Annex I to the Convention must submit an annual greenhouse gas inventory covering emissions and removals of greenhouse gas emissions 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 inventory review of the 2019 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 September 2019 in Bonn.

* In the symbol for this document, 2019 refers to the year in which the inventory was submitted, not to the year of publication.

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Contents

	<i>Paragraphs</i>	<i>Page</i>
Abbreviations and acronyms		3
I. Introduction	1–6	5
II. Summary and general assessment of the 2019 annual submission.....	7	6
III. Status of implementation of issues and/or problems raised in the previous review report	8	8
IV. Issues identified in three successive reviews and not addressed by the Party	9	28
V. Additional findings made during the individual review of the 2019 annual submission.....	10	30
VI. Application of adjustments.....	11	39
VII. Accounting quantities for activities under Article 3, paragraph 3, and, if any, activities under Article 3, paragraph 4, of the Kyoto Protocol	12	39
VIII. Questions of implementation	13	39
Annexes		
I. Overview of greenhouse gas emissions and removals for Cyprus for submission year 2019 and data and information on activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, as submitted by Cyprus in its 2019 annual submission.....		40
II. Information to be included in the compilation and accounting database		44
III. Additional information to support findings in table 2 in this report.....		47
IV. Reference documents		48

Abbreviations and acronyms

2006 IPCC Guidelines	<i>2006 IPCC Guidelines for National Greenhouse Gas Inventories</i>
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”
CER	certified emission reduction
CH ₄	methane
CM	cropland management
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
HWP	harvested wood products
IE	included elsewhere
IEF	implied emission factor
IPCC	Intergovernmental Panel on Climate Change
IPCC good practice guidance	<i>Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories</i>
IPPU	industrial processes and product use
KP-LULUCF activities	activities under Article 3, paragraphs 3 and 4, 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
MSW	municipal solid waste
N	nitrogen
N ₂ O	nitrous oxide
NA	not applicable
NE	not estimated
NF ₃	nitrogen trifluoride
NIR	national inventory report
NO	not occurring
PFC	perfluorocarbon
QA/QC	quality assurance/quality control
RMU	removal unit
RV	revegetation

SEF	standard electronic format
SF ₆	sulfur hexafluoride
SWDS	solid waste disposal site
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>

I. Introduction¹

1. This report covers the review of the 2019 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” (decision 13/CP.20). The review took place from 2 to 7 September 2019 in Bonn and was coordinated by Pedro Torres, Davor Vesligaj and Simon Wear (secretariat). Table 1 provides information on the composition of the ERT that conducted the review of Cyprus.

Table 1

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

<i>Area of expertise</i>	<i>Name</i>	<i>Party</i>
Generalist	Mausami Desai	United States of America
	Hongwei Yang	China
Energy	Branca Americano	Brazil
	Kendal Blanco-Salas	Costa Rica
	Veronika Ginzburg	Russian Federation
IPPU	Ann Marie Ryan	Ireland
	Takuji Terakawa	Japan
	Qing Tong	China
Agriculture	Jorge Lam Alvarez	Peru
	B. Jacques Kouazounde	Benin
LULUCF and KP-LULUCF activities	Thiago de Araújo Mendes	Brazil
	Atsuko Hayashi	Japan
	Igor Onopchuk	Ukraine
Waste	Takefumi Oda	Japan
	Gao Qingxian	China
Lead reviewers	Mausami Desai	
	Hongwei Yang	

2. The basis of the findings in this report is the assessment by the ERT of the Party’s 2019 annual submission in accordance with the Article 8 review guidelines. The ERT notes that the individual inventory review of Cyprus’ 2018 annual submission did not take place in 2018 owing to insufficient funding for the review process.

3. The ERT has made recommendations that Cyprus resolve the findings related to issues,² including issues designated as problems.³ Other findings, and, if applicable, the encouragements of the ERT to Cyprus to resolve them, are also included.

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

¹ At the time of publication of this report, Cyprus had submitted its instrument of ratification of the Doha Amendment; however, the Amendment had not yet entered into force. The implementation of the provisions of the Doha Amendment is therefore considered in this report in the context of decision 1/CMP.8, para. 6, pending the entry into force of the Amendment.

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.

5. Annex I shows annual GHG emissions for Cyprus, including totals excluding and including the LULUCF sector, indirect CO₂ emissions, and emissions by gas and by sector. Annex I also contains background data related to emissions and removals from KP-LULUCF activities, if elected by Cyprus, 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 2019 annual submission

7. Table 2 provides the assessment by the ERT of the 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 inventory of Cyprus

<i>Assessment</i>	<i>Issue or problem ID#(s) in table 3 and/or 5^a</i>		
Dates of submission	Original submission: 15 May 2019 (NIR), 15 May 2019 (CRF tables) version 6, 29 March 2019 (SEF tables) Revised submission: 25 October 2019 (CRF tables) version 8		
Review format	Centralized		
Application of the requirements of the UNFCCC Annex I inventory reporting guidelines and Wetlands Supplement (if applicable)	Have any issues been identified in the following areas:		
	(a) Identification of key categories?	Yes	G.9
	(b) Selection and use of methodologies and assumptions?	Yes	G.11, I.24, I.25, A.3, L.3, L.5, L.7
	(c) Development and selection of EFs?	Yes	E.18, E.22, E.25, E.26, A.6, A.8, L.6
	(d) Collection and selection of AD?	Yes	E.28, I.13, I.14, I.20, I.23, L.19, L.20, L.21, W.1, W.11, W.12
	(e) Reporting of recalculations?	No	
	(f) Reporting of a consistent time series?	No	
	(g) Reporting of uncertainties, including methodologies?	Yes	G.20
	(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/completeness? ^b	Yes	G.23, E.20, E.27, I.18, I.22, L.9, L.16, W.13, W.14
	(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	G.8, G.23
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	

<i>Assessment</i>		<i>Issue or problem ID#(s) in table 3 and/or 5^a</i>	
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.15
	(b) Performance of the national system functions?	Yes	G.16
	Have any issues been identified related to the national registry:		
	(a) Overall functioning of the national registry?	Yes	G.13
	(b) Performance of the functions of the national registry and the technical standards for data exchange?	Yes	G.12
	Have any issues been identified related to reporting of information on AAUs, CERs, ERUs and RMUs and on discrepancies reported 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 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?	No		
CPR	Have any issues been identified related to the following reporting requirements for KP-LULUCF activities:		
	(a) Reporting requirements of decision 2/CMP.8, annex II, paragraphs 1–5?	Yes	KL.1, KL.2
	(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.1, KL.5, KL.6
	(c) Reporting requirements of decision 6/CMP.9?	Yes	KL.1, KL.5, KL.6
	(d) Country-specific information to support provisions for natural disturbances, in accordance with decision 2/CMP.7, annex, paragraphs 33 and 34?	Yes	KL.2, KL.4
Adjustments	Was the CPR reported in accordance with the annex to decision 18/CP.7, the annex to decision 11/CMP.1 and decision 1/CMP.8, paragraph 18?	Yes	
Adjustments	Has the ERT applied an adjustment under Article 5, paragraph 2, of the Kyoto Protocol?	No	
	Did the Party submit a revised estimate to replace a previously applied adjustment?	No	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 the assessment of conformity with the UNFCCC Annex I inventory reporting guidelines and any further guidance adopted by the Conference of the Parties?	Yes	

<i>Assessment</i>	<i>Issue or problem ID#(s) in table 3 and/or 5^a</i>
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
Questions of implementation	Did the ERT list any questions of implementation? No

^a The ERT identified additional issues and/or problems in the general, energy, agriculture and waste sectors that are not listed in this table but are included in table 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 issues and/or problems raised in the previous review report

8. Table 3 compiles all the recommendations made in previous review reports that were included in the previous review report, published on 27 April 2018.⁴ For each issue and/or problem, the ERT specified whether it believes the issue and/or problem has been resolved by the conclusion of the review of the 2019 annual submission and provided the rationale for its determination, which takes into consideration the publication date of the previous review report and national circumstances.

Table 3

Status of implementation of issues and/or problems raised in the previous review report of Cyprus

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
General			
G.1	AD (G.8, 2017) (G.3, 2016) (G.3, 2015) (9, 2013) Completeness	Give priority to the collection of the necessary AD for the energy and IPPU sectors in order to complete the inventory.	Resolved. The Party has improved completeness since its previous submission. During the review, Cyprus indicated that it had collected the AD necessary to complete the inventory for the categories previously not estimated in the energy sector, such as venting at oil facilities (1.B.2.c.i), and in the IPPU sector, such as cement production (2.A.1), lime production (2.A.2), ceramics (2.A.4.a), other process uses of carbonates (2.A.4.d), non-energy products from fuels and solvent use (2.D), N ₂ O from product uses (2.G.3) and substitutes for ozone-depleting substances in refrigeration and air conditioning (2.F.1). See ID#s I.14 and I.18 below for pending issues related to completeness in the IPPU sector.
G.2	Archiving (G.17, 2017) (G.18, 2016) (G.18, 2015) Adherence to the UNFCCC Annex I inventory reporting guidelines	Enhance the security and performance of the data archiving and storage system.	Addressing. The ERT noted that the Party has made progress in enhancing the security and performance of its data archiving and storage system. The NIR (section 1.2.2) includes a description of the information that is archived in the “centralized inventory file”, including annual AD and EFs and feedback from reviews. However, the Party clarified that it needs to formalize its archiving procedures,

⁴ FCCC/ARR/2017/CYP. The ERT notes that the report on the individual inventory review of Cyprus’ 2018 annual submission has not been published yet. As a result, the latest previously published annual review report reflects the findings of the review of the Party’s 2017 annual submission.

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
			and that the archiving system does not yet include all documentation of planning, preparation and management activities noted in section 11.1 of Cyprus' current QA/QC plan, such as expert judgment used for uncertainty analysis. Cyprus plans to ensure that all activities are documented and data archived for its 2020 annual submission.
G.3	Article 3, paragraph 14, of the Kyoto Protocol (G.20, 2017) (G.21, 2016) (G.21, 2015) Adherence to the reporting guidelines under Article 7, paragraph 1, of the Kyoto Protocol	Provide in the NIR all supplementary information under Article 7, paragraph 1, of the Kyoto Protocol, in particular the information related to Article 3, paragraph 14, in accordance with decision 15/CMP.1.	Resolved. The Party reported information related to Article 3, paragraph 14, in accordance with decision 15/CMP.1 in chapter 15 of its NIR.
G.4	Inventory planning (G.1, 2017) (G.2, 2016) (G.2, 2015) (table 3, 2013) Transparency	Improve transparency of reporting across all sectors.	Resolved. The Party reported more transparently the methodologies used, the rationale behind the selection of EFs and the documentation of AD across all sectors in its latest annual submission.(see ID#s G.10, G.18, E.12, I.2, I.6, I.7, I.19, L.1, L.4, L.5, L.11, L.13, L.14, L.17, W.6 and W.7 below).
G.5	Inventory planning (G.2, 2017) (G.11, 2016) (G.11, 2015) Transparency	Include in the NIR a description of the institutional arrangements, and the assignment of responsibilities between ministries and agencies, for timely data provision and national GHG inventory preparation.	Resolved. The NIR (pp.28–39) includes a clear description of the assignment of responsibilities among ministries and agencies, including which of those act as focal points, for timely data provision and national inventory preparation.
G.6	Inventory planning (G.3, 2017) (G.4, 2016) (G.4, 2015) (10, 2013) Adherence to the UNFCCC Annex I inventory reporting guidelines	Include the relevant ministries and agencies in the institutional arrangements for inventory preparation in order to make reporting on LULUCF possible.	Resolved. The NIR (pp.29 and 32) includes information on the institutions providing data for the preparation of LULUCF estimates, as established by decision 83.710 of 15 November 2017 of the Party's Council of Ministers.
G.7	CRF tables (G.4, 2017) (G.7, 2016) (G.7, 2015) (tables 3 and 4, 2013) Adherence to the UNFCCC Annex I inventory reporting guidelines	Report notation keys in the CRF tables instead of leaving cells blank or reporting zeros.	Resolved. Cyprus reported notation keys in the CRF sectoral background tables instead of leaving cells blank or reporting zeros.
G.8	CRF tables (G.5, 2017) (G.8, 2016) (G.8, 2015) (table 4, 2013) Adherence to the UNFCCC Annex I	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);	Addressing. CRF table 9 does not include explanations for the use of the notation keys "NE" and "IE". In table A6.2 of annex 6 to its NIR (pp.329–330), Cyprus reported that it could not identify how and where to enter explanations for using "NE" and "IE" in CRF

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
	inventory reporting guidelines	and correct the allocation of the emissions erroneously reported in the column “allocation per IPCC Guidelines”.	Reporter in order to populate CRF table 9. During the review, the Party indicated that it has made efforts to improve its reporting in the CRF tables and the NIR since its previous annual submission. Although CRF table 9 is empty, the ERT noted that Cyprus did include explanations for the use of the notation key “IE” in the documentation boxes for some of the CRF sectoral tables (e.g. for categories 1.A.2.a, 1.A.3.b.iii and 2.G.1). Finally, while Cyprus removed emissions erroneously reported in the “allocation per IPCC Guidelines” column, as noted above, no information was provided for the use of the notation key “IE”.
G.9	Key category analysis (G.21, 2017) Adherence to the UNFCCC Annex I inventory reporting guidelines	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.	Addressing. The NIR (annex 1) includes a key category analysis with the correct threshold of 95 per cent, in line with the 2006 IPCC Guidelines, for identifying key categories. During the review, Cyprus indicated its plan to disaggregate emissions by fuel in the energy sector and in the agricultural soils categories for its 2020 annual submission.
G.10	Methods (G.9, 2017) (G.15, 2016) (G.15, 2015) Transparency	Provide sufficient justification of methods, assumptions and emission parameters used in the national inventory preparation, including through the provision of supporting references to literature and other information sources used.	Resolved. The Party included justifications for methods, assumptions and emission parameters used for estimating emissions, including supporting references to the literature and other sources of information (see ID#s E.12, E.16, I.2, I.3, I.5, I.6, I.7, I.19, L.1, L.5, L.12, L.17 and W.6 below). Pending transparency issues are discussed in sector-specific sections below (see ID#s E.1, E.14, E.17, L.14, KL.2, KL.3 and KL.4 below) and in table 5 (see ID#s E.24 and E.29 in table 5).
G.11	Methods (G.10, 2017) (G.15, 2016) (G.15, 2015) Accuracy	Ensure that appropriate methods are used to estimate emissions for key categories.	Addressing. The ERT noted methodological improvements in the Party’s 2019 annual submission. As reported in the NIR (p.41), the Party applied higher-tier methods in accordance with decision trees for several key categories (e.g. 1.A.1.a.i, 1.A.3.b.i, 2.A.1 and 3.A.1). During the review, the Party indicated that improving methodologies is a continuous process, and that the planned priorities for its 2021 annual submission are to improve the emission and removal estimates for key categories in the LULUCF sector and the emission estimates for fluorinated gases (2.G).
G.12	Kyoto Protocol units (G.24, 2017) Adherence to the reporting guidelines under Article 7, paragraph 1, of the Kyoto Protocol	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	Addressing. The Party reported information on its SEF tables in the NIR (p.263), stating that the SEF tables were submitted with its 2019 annual submission. However, no information was reported in the NIR regarding discrepancies and notification, publicly accessible registry information or the calculation of the CPR.

ID#	Issue and/or problem classification ^{a, b}	Recommendation made in previous review report	ERT assessment and rationale
		registry information; and the calculation of the CPR.	
G.13	National registry (G.18, 2017) (G.19, 2016) (G.19, 2015) Adherence to the reporting guidelines under Article 7, paragraph 1, of the Kyoto Protocol	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).	Not resolved. The required information on the national registry was not included in the NIR. During the review, Cyprus shared a questionnaire that includes the contact information of the designated organization and registry administrator. The Party indicated that it is awaiting information on when it will be fully connected to the international transaction log.
G.14	National registry (G.23, 2017) Adherence to the reporting guidelines under Article 7, paragraph 1, of the Kyoto Protocol	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.	Addressing. Information on changes to the national registry was not reported in the NIR. The Party stated in the NIR (p.265) that it is not yet connected to the international transaction log. During the review, the Party clarified that there have not been any changes to its national registry since the previous annual submission.
G.15	National system (G.7, 2017) (G.9, 2016) (G.9, 2015) Adherence to the reporting guidelines under Article 7, paragraph 1, of the Kyoto Protocol	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 NIR (p.29) indicates that the legal framework for the national system of Cyprus was established by Council of Minister's decision 83.710 of 15 November 2017. During the review, the Party noted that, while the framework has been established to support continuous and sustainable reporting, it is continuing to review the arrangements for compiling emission and removal estimates for the LULUCF sector.
G.16	National system (G.22, 2017) Adherence to the reporting guidelines under Article 7, paragraph 1, of the Kyoto Protocol	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. The current national system is described in section 1.2 of the NIR and changes to the national system are described in chapter 13. The ERT noted significant improvements in the capacity of the national system, particularly in relation to addressing the recommendations from previous reviews. However, the ERT also noted that the 2019 annual submission of Cyprus was delayed by one month, indicating that timely performance of the functions of the national system has not been fully achieved. Cyprus noted that several factors, including obtaining annual energy data, completing improvements and addressing QA/QC findings, prevented timely submission. Cyprus anticipates having additional capacity, through the engagement of consultants, starting in 2019 (NIR, p.30).

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
G.17	National system (G.22, 2017) Adherence to the reporting guidelines under Article 7, paragraph 1, of the Kyoto Protocol	Follow the activities outlined in the revised QA/QC plan and GHG inventory improvement plan to ensure continuous and sustainable reporting, and report on the progress of implementation of the plans in the NIR.	Resolved. The Party has made progress in following the activities in the revised QA/QC plan and GHG inventory improvement plan according to information provided in annex 6 to its NIR and across the sectoral chapters of the NIR, which include information on the application of QA/QC procedures.
G.18	QA/QC and verification (G.12, 2017) (G.1, 2016) (G.1, 2015) Transparency	Provide more detail in the NIR on the QA/QC procedures carried out and the review of the inventory (sector by sector) by independent national experts after its completion.	Resolved. The NIR (pp.35–39) provides more details than the previous NIR on the QA/QC data quality objectives, process and procedures (including timing), and roles. Information on category-specific QC was provided in the NIR for key categories (e.g. pp.81, 84 and 147), along with information on QA carried out by independent national experts. The sector-by-sector review of the GHG inventory is accomplished through annual European Union QA/QC checks and periodic comprehensive reviews.
G.19	QA/QC and verification (G.13, 2017) (G.13, 2016) (G.13, 2015) Adherence to the UNFCCC Annex I inventory reporting guidelines	Include the updated QA/QC and verification plan in the NIR.	Resolved. The updated QA/QC and verification plans are reported in section 1.2.3 of the NIR (pp.35–39).
G.20	Uncertainty analysis (G.14, 2017) (G.6, 2016) (G.6, 2015) Adherence to the UNFCCC Annex I inventory reporting guidelines	Conduct an uncertainty analysis for LULUCF after the LULUCF reporting has been completed.	Not resolved. The NIR does not include uncertainty estimates for the LULUCF sector or the specific categories reported. During the review, the Party indicated that the uncertainty analysis for LULUCF is under preparation and anticipated to be included in the 2020 NIR.
G.21	Uncertainty analysis (G.16, 2017) (G.17, 2016) (G.17, 2015) Adherence to the UNFCCC Annex I inventory reporting guidelines	Undertake quantitative uncertainty assessments for each category of the national inventory and report the results in the NIR.	Resolved. The Party conducted uncertainty assessments using approach 1 from the 2006 IPCC Guidelines for each category, with the exception of LULUCF categories (see ID# G.20 above). Information on uncertainty analysis consistent with table 3.3 of volume 1 of the 2006 IPCC Guidelines was provided in annex 2 to the NIR.

Energy

E.1	1. General (energy sector) – all fuels – CO ₂ , CH ₄ and N ₂ O (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. For 2005–2017, Cyprus used information from the EU ETS to estimate emissions from public electricity and heat production (1.A.1.a) and from petroleum coke and other bituminous coal in non-metallic minerals under manufacturing industries and construction (1.A.2.f). For 1990–2004, the Party estimated emissions using energy balance data, and it reconciled the time periods by using the IEF for 2005 for 1990–2004. However, the ERT noted that the NIR does not
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ID#	Issue and/or problem classification ^{a, b}	Recommendation made in previous review report	ERT assessment and rationale
			include a clear explanation of how time-series consistency was ensured, only the information that recalculations were performed according to the IPCC good practice guidance if sufficient data were available.
E.2	1. General (energy sector) – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.13, 2017) Adherence to the UNFCCC Annex I inventory reporting guidelines	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.	Addressing. The Party estimated emissions for all types of vehicles used in road transportation (1.A.3.b) and did not report the notation key “IE”. However, CO ₂ , CH ₄ and N ₂ O emissions from iron and steel production (1.A.2.b) were reported as “IE” without the relevant information in CRF table 9 being provided. During the review, Cyprus indicated that explanations for the use of notation keys will be improved in future annual submissions.
E.3	International aviation – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.14, 2017) Adherence to the UNFCCC Annex I inventory reporting guidelines	Correct the discrepancies between the NIR and CRF tables 1.A(b) and 1.D with respect to jet kerosene consumption, and enter the correct data, covering only international aviation, in CRF table 1.D.	Resolved. Cyprus corrected the discrepancies between NIR table 3.38 and CRF table 1.D. It explained in the NIR (sections 3.5.1 and 3.2.5.2 and annex 3) that the difference between CRF tables 1.A(b) and 1.D was due to the use of two data sources: EUROCONTROL, the European Organisation for the Safety of Air Navigation, for the sectoral approach, and the national Statistical Service (energy balance) for the reference approach.
E.4	1.A.1.a Public electricity and heat production – all fuels – CO ₂ , CH ₄ and N ₂ O (E.2, 2017) (E.8, 2016) (E.8, 2015) (30, 2013) Consistency	Use country- and/or plant-specific EFs for the earlier years in the time series, when available.	Resolved. For 1990–2004, Cyprus used country- and/or plant-specific EFs, when available. When such EFs were not available, Cyprus used the IEF for 2005 to estimate emissions for 1990–2004. The Party explained in its NIR (p.66) that it used the IEF for the earliest year available (2005), considered to be the most representative value available, to calculate emissions for the earlier years.
E.5	1.A.1.a Public electricity and heat production – liquid fuels – CO ₂ (E.3, 2017) (E.10, 2016) (E.10, 2015) (32, 2013) Consistency	Investigate and explain the reasons behind the fluctuation in the CO ₂ IEFs after 2005.	Resolved. In its NIR (p.67), Cyprus explained the fluctuation in the CO ₂ IEFs after 2005. The ERT considers the explanation to be transparent and adequate.
E.6	1.A.1.c Manufacture of solid fuels and other energy industries – biomass – CO ₂ , CH ₄ and N ₂ O (E.15, 2017) Accuracy	Report consumption of biomass for charcoal production and the associated emissions under category 1.A.1.c in the CRF tables and provide a transparent description in the NIR including the conversion efficiency (kg biomass input/kg charcoal produced).	Resolved. Cyprus reported consumption of biomass for charcoal production and the associated emissions under category 1.A.1.c in the CRF tables and provided a transparent description in the NIR (p.68).

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
E.7	1.A.2 Manufacturing industries and construction – all fuels – CO ₂ , CH ₄ and N ₂ O (E.16, 2017) Consistency	Correct the data entry errors related to categories 1.A.2.d (AD for 1999–2006) and 1.A.2.f (N ₂ O emissions in 2006 and CO ₂ emissions in 1996).	Resolved. Cyprus corrected these data entry errors in the corresponding CRF and NIR tables.
E.8	1.A.2.b Non-ferrous metals – liquid fuels – CO ₂ , CH ₄ and N ₂ O (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.	Not resolved. During the review, the Party stated that a detailed presentation of the data obtained from the national energy balance was reported in table 3.10 of the NIR. However, the ERT noted that the rationale and supporting information for reporting liquid fuel consumption as “NO” for 2013 and 2014 was not included in the NIR.
E.9	1.A.2.c Chemicals – liquid fuels – CO ₂ , CH ₄ and N ₂ O (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.	Not resolved. Cyprus reported the value “0” in the NIR (table 3.10) for the consumption of liquid fuels under category 1.A.2.c and the notation key “NO” in CRF table 1.A(a) for 2013, but provided no explanation for the variation in AD. During the review, the Party stated that a detailed presentation of the data obtained from the national energy balance was reported in table 3.10 of the NIR.
E.10	1.A.2.f Non-metallic minerals – other fossil fuels – CO ₂ , CH ₄ and N ₂ O (E.19, 2017) Transparency	Explain in the NIR that industrial waste covers sewage sludge, tyres, alternative solid fuel, meat and bone meal, and compost, and that the waste is incinerated for the production of thermal energy in the furnace burning the raw material to produce cement.	Resolved. A transparent description of industrial waste burned for energy was provided in the NIR (p.75).
E.11	1.A.3.a Domestic aviation – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.5, 2017) (E.20, 2016) (E.20, 2015) Accuracy	Make efforts to collect data to enable the application of higher-tier methods and improve the consistency of the time series.	Resolved. Domestic aviation (1.A.3.a) is not a key category according to the key category analysis (see annex 1 to the NIR, p.268). The ERT considers a tier 1 method to be appropriate for estimating emissions for this category, and noted that the consistency of the time series has improved since the Party’s 2017 annual submission (see ID# E.13 below).
E.12	1.A.3.a Domestic aviation – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.6, 2017) (E.20, 2016) (E.20, 2015) Transparency	Report in the NIR on any progress in applying higher-tier methods and improving the consistency of the time series.	Resolved. Domestic aviation (1.A.3.a) is not a key category according to the key category analysis (see annex 1 to the NIR, p.268). The ERT considers a tier 1 method to be appropriate for estimating emissions for this category, and noted that the consistency of the time series has improved since the Party’s 2017 annual submission (see ID# E.13 below).
E.13	1.A.3.a Domestic aviation – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.20, 2017) Consistency	Investigate options for a more accurate method of backcasting the trend in the domestic and international aviation split, using supporting data such as on landings and take-offs where	Resolved. Cyprus estimated the AD for 1990–2004 on the basis of the trend for the share of domestic flights and total fuel consumption in 2005–2017, which takes into consideration the decrease in fuel consumption for domestic aviation since the beginning of the time series. The Party stated in its NIR (p.77–78, figure

ID#	Issue and/or problem classification ^{a, b}	Recommendation made in previous review report	ERT assessment and rationale
		possible, and report the results in the NIR.	3.6) that it was not possible to use data on landings and take-offs for backcasting the trend in the domestic and international aviation split since there was no correlation between the available data (EUROCONTROL data on domestic flight fuel consumption) and the landings and take-offs. The ERT considers the backcasting method used by Cyprus to be appropriate for estimating emissions for 1990–2004.
E.14	1.A.3.b Road transportation – liquid fuels – CO ₂ , CH ₄ and N ₂ O (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.	Addressing. Cyprus provided an explanation of the composition of the biofuels used in road transportation, obtained from the Energy Service of its Ministry of Energy, Commerce and Industry, which states that, according to the certificates of sustainability criteria that accompanied the imported biofuels, all biofuels consumed in Cyprus were from biomass (NIR, p.79). However, the ERT could not determine which types of biofuel were being used (e.g. bioethanol, biodiesel) and whether all diesel and gasoline were mixed with biofuels and at what percentage in each year.
E.15	1.A.3.b.i Cars – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.8, 2017) (E.19, 2016) (E.19, 2015) Accuracy	Make efforts to apply higher-tier methods to estimate emissions for category 1.A.3.b.i.	Resolved. For the estimation of emissions for all source categories under road transportation (1.A.3.b), Cyprus used the COPERT 5 model for the first time, consistent with the tier 2 methodology from the 2006 IPCC Guidelines.
E.16	1.A.3.d Domestic navigation – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.9, 2017) (E.21, 2016) (E.21, 2015) Accuracy	Make efforts to collect data to enable the application of higher-tier methods and improve the consistency of the time series.	Resolved. Domestic navigation (1.A.3.d) is not a key category according to the key category analysis (see annex 1 to the NIR, p.268). The ERT considers a tier 1 method to be appropriate for estimating emissions for this category.
E.17	1.A.3.d Domestic navigation – liquid fuels – CO ₂ , CH ₄ and N ₂ O (E.10, 2017) (E.21, 2016) (E.21, 2015) Transparency	Report in the NIR on any progress achieved in applying higher-tier methods and improving the consistency of the time series.	Addressing. Domestic navigation (1.A.3.d) is not a key category according to the key category analysis (see annex 1 to the NIR, p.268). The ERT considers a tier 1 method to be appropriate for estimating emissions for this category (see ID# E.16 above). However, the ERT noted that no supporting information or references were provided by the Party in relation to splitting fuel usage and making backward projections of fuel use in domestic navigation for 1990–1997.
E.18	1.B.2.a Oil – CH ₄ (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.	Not resolved. Cyprus continued to use an EF of 3.35 kg CH ₄ /m ³ (midpoint of 2.6–4.1 kg CH ₄ /m ³) for oil refining/storage. The units and the range of the EF used were still incorrect. According to the 2006 IPCC Guidelines (vol. 2, table 4.2.4), the default range is 2.6–41 kg CH ₄ /10 ³ m ³ crude oil refined and the midpoint

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
			is 21.8 kg CH ₄ /10 ³ m ³ crude oil refined (or 0.0218 kg CH ₄ /m ³ crude oil refined).
IPPU			
I.1	2. General (IPPU) (I.1, 2017) (I.1, 2016) (I.1, 2015) (43, 2013) Completeness	Implement the improvement plan to significantly increase the number of categories reported and report emissions for those categories.	Resolved. The Party has made significant progress in improving completeness in several IPPU categories (2.A.1, 2.A.2, 2.A.4.a, 2.A.4.d, 2.D, 2.G.3 and 2.F.3) (see ID# G.1 above). During the review, Cyprus stated that it does not anticipate undertaking any new activities to improve completeness for the IPPU sector.
I.2	2.A.1 Cement production – CO ₂ (I.2, 2017) (I.10, 2016) (I.10, 2015) Transparency	Update the description of the methodology used to calculate CO ₂ emissions for category 2.A.1 in the NIR.	Resolved. The Party provided a transparent description of the application of a country-specific methodology based on EU ETS data to calculate CO ₂ emissions from cement production in its NIR (p.108).
I.3	2.A.1 Cement production – CO ₂ (I.17, 2017) Transparency	Include information in the corresponding section of the NIR to justify the decrease in CO ₂ emissions between 2014 and 2015.	Resolved. The Party explained in the NIR (p.107) that there was a sharp increase in CO ₂ emissions from cement production between 2013 and 2014 due to an increase in exports, followed by a decrease in emissions between 2014 and 2015 due to reduced demand for exports, which led to a reduction in production.
I.4	2.A.2 Lime production – CO ₂ (I.18, 2017) Accuracy	Account for CO ₂ emissions from hydrated lime for the entire time series and include in the NIR a complete description of the methodology used for the estimation of CO ₂ emissions from lime production, including the use of the correction for hydrated lime.	Resolved. The Party reported CO ₂ emissions from hydrated lime for the entire time series and provided in the NIR (p.110) a complete description of the estimation methodology used, including the use of the correction for hydrated lime.
I.5	2.A.3 Glass production – CO ₂ (I.3, 2017) (I.11, 2016) (I.11, 2015) Transparency	Report estimates of CO ₂ emissions from glass production.	Resolved. On the basis of information provided by the national Statistical Service, the Party stated in the NIR (p.111) that glass production does not occur in Cyprus, only shaping and processing of imported glass.
I.6	2.A.4 Other process uses of carbonates – CO ₂ (I.4, 2017) (I.12, 2016) (I.12, 2015) Transparency	Describe in the NIR the methodology used to calculate CO ₂ emissions for category 2.A.4.a.	Resolved. The Party provided in the NIR (p.112) a description of the application of a country-specific methodology based on data from the EU ETS to calculate CO ₂ emissions from ceramics.
I.7	2.A.4 Other process uses of carbonates – CO ₂ (I.5, 2017) (I.13, 2016) (I.13, 2015) Transparency	Describe in the NIR the methodology used to calculate CO ₂ emissions for category 2.A.4.b.	Resolved. The Party provided in the NIR (p.114) a description of the tier 1 method from the 2006 IPCC Guidelines used to calculate CO ₂ emissions from other uses of soda ash.

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
I.8	2.A.4 Other process uses of carbonates – CO ₂ (I.19, 2017) Accuracy	Update in the NIR the change in the number of installations operating (from 2014 to 2015) and report the correct values for emissions in 2015 and the IEF.	Resolved. The Party provided in the NIR (p.112) the number of ceramics installations operating in Cyprus over the whole time series and corrected the emission estimates and IEF for 2015. The ERT noted that the Party estimated emissions from ceramics production for both EU ETS and other installations for the whole time series. The ERT considers the estimates to be transparent and correct.
I.9	2.A.4 Other process uses of carbonates – CO ₂ (I.19, 2017) Accuracy	Report correct emission estimates for 2015 in CRF table 2(I).A-Hs1.	Resolved. The Party provided correct emission estimates for the category for 2015 in CRF table 2(I).A-Hs1.
I.10	2.A.4 Other process uses of carbonates – CO ₂ (I.20, 2017) Transparency	Include in the NIR sufficient information to justify the decrease in the imports of soda ash between 2010 and 2015.	Resolved. Changes in the imports of soda ash in 2010–2015 were reported in the NIR (p.114). The ERT considers the information provided to be transparent and correct.
I.11	2.B.5 Carbide production – CO ₂ (I.6, 2017) (I.14, 2016) (I.14, 2015) Transparency	Further investigate whether acetylene production in Cyprus is based on calcium carbide use and, depending on the results of the investigation, report estimates of CO ₂ emissions from calcium carbide used in acetylene production or revise the use of the notation key (i.e. report as “NO”).	Resolved. On the basis of information received from its Department of Customs and Excise, the Party confirmed in the NIR (p.115) that acetylene production does not occur in Cyprus. Therefore, the use of the notation key “NO” is correct.
I.12	2.D.1 Lubricant use – CO ₂ (I.7, 2017) (I.15, 2016) (I.15, 2015) Completeness	Use one of the splicing techniques (i.e. overlap or surrogate data) from the 2006 IPCC Guidelines to fill the gap in the AD for 1990–1993 and report CO ₂ emission estimates for lubricant use.	Resolved. The Party reported in the NIR (p.116) that the lubricant consumption trend in 1993–1996 was used to extrapolate AD for 1990–1992.
I.13	2.D.3 Other (non-energy products from fuels and solvent use) – CO ₂ (I.9, 2017) (I.17, 2016) (I.17, 2015) Comparability	Report the AD for urea-based catalysts in kt, instead of TJ, in CRF table 2(I).A-Hs2.	Addressing. The Party reported in CRF table 2(I).A-Hs2 the total diesel consumed in road transportation in kt instead of TJ. However, the ERT noted that, according to the 2006 IPCC Guidelines (vol. 2, equation 3.2.2), the AD for urea-based catalysts should be the amount of urea-based additive consumed for use in catalytic converters, not the total diesel consumed. Therefore, the ERT considers that the AD reported in CRF table 2(I).A-Hs2 are still not correct.
I.14	2.F Product uses as substitutes for ozone-depleting substances – HFCs (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.	Addressing. The ERT noted that Cyprus reported on all subcategories under refrigeration and air conditioning (2.F.1) in accordance with the 2006 IPCC Guidelines, except emissions from transport refrigeration. The Party reported in the NIR (p.128) that no data were delivered on time from its Department of Transportation to estimate emissions for 2017, so the emissions were

ID#	Issue and/or problem classification ^{a, b}	Recommendation made in previous review report	ERT assessment and rationale
			<p>reported as “NE” in CRF table 2(II).B-Hs2. With regard to emissions from foam blowing agents (2.F.2), fire protection (2.F.3) and aerosols (2.F.4), the Party used country-specific estimation methodologies that are not fully in accordance with the 2006 IPCC Guidelines. If the lack of AD due to national circumstances prevents the use of methods from the 2006 IPCC Guidelines to estimate emissions for categories 2.F.2, 2.F.3 and 2.F.4, the Party may use surrogate data, as detailed in the 2006 IPCC Guidelines (vol. 1, section 2.2.1).</p>
I.15	<p>2.F Product uses as substitutes for ozone-depleting substances – PFCs and NF₃ (I.11, 2017) (I.19, 2016) (I.19, 2015) Adherence to the UNFCCC Annex I inventory reporting guidelines</p>	<p>Further examine whether PFC and NF₃ 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.</p>	<p>Addressing. The Party reported the PFC and NF₃ emissions for this category as “NO” in the NIR (tables 1 and 2.3) and in CRF tables 2 and 2(I). During the review, Cyprus confirmed that PFC and NF₃ emissions from product uses as substitutes for ozone-depleting substances do not occur in the country. However, the ERT noted that blank cells were still reported for those emissions for some subcategories (2.F.1, 2.F.2, 2.F.3, 2.F.5 and 2.F.6) in CRF tables 2 and 2(I).</p>
I.16	<p>2.F Product uses as substitutes for ozone-depleting substances – HFCs (I.21, 2017) Transparency</p>	<p>Update in the NIR the description of the AD and method used to allocate the emissions under category 2.F.1 to the different sources.</p>	<p>Resolved. The Party improved the emission estimates for refrigeration and air conditioning (2.F.1) by using a tier 2a method from the 2006 IPCC Guidelines, and therefore the allocation of emissions to different sources under 2.F.1 was no longer required (section 4.6.2 of the NIR). The ERT considers the tier 2a method used for estimating emissions for category 2.F.1 to be appropriate and correctly applied by Cyprus.</p>
I.17	<p>2.F Product uses as substitutes for ozone-depleting substances – HFCs (I.22, 2017) Transparency</p>	<p>Update in the NIR the methodology used, including the average emissions per capita applied, and the description of the method used to allocate the emissions under category 2.F.1 to the different sources.</p>	<p>Resolved. See ID# I.16 above.</p>
I.18	<p>2.F.1 Refrigeration and air conditioning – HFCs (I.12, 2017) (I.4, 2016) (I.4, 2015) (46, 2013) Completeness</p>	<p>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.</p>	<p>Addressing. The Party stated in the NIR (p.120) that, according to available information, manufacturing of refrigeration and air-conditioning equipment does not occur in Cyprus and therefore the activity was reported as “NO”. However, no evidence or information source was provided to support this statement.</p>
I.19	<p>2.G.1 Electrical equipment – SF₆ (I.13, 2017) (I.20, 2016) (I.20, 2015) Transparency</p>	<p>Explain in the NIR how SF₆ emissions from electrical equipment are estimated.</p>	<p>Resolved. The Party explained in the NIR (pp.135–136) how SF₆ emissions from electrical equipment were estimated. The ERT considers the explanation provided by the Party to be transparent.</p>

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
I.20	2.G Other product manufacture and use – N ₂ O and SF ₆ (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. During the review, the Party stated that it updated the methodology used to estimate emissions from 2.G.1, 2.G.3a and 2.G.3.b. The ERT noted that the Party estimated SF ₆ emissions from electrical equipment (2.G.1) using average emissions per capita from neighbouring countries and population data for 2016; for 2017, SF ₆ emissions were assumed to be the same as for 2016. The ERT also noted that the assumptions made by the Party to estimate these SF ₆ emissions for 2017 were not reported in the NIR. The ERT further noted that population data for 2017 were not reported in NIR table 4.22. Regarding N ₂ O emissions from product uses (2.G.3), the ERT noted that the emissions for 2017 seemed to have been estimated using population data for 2017 but such data were not provided in the NIR (table 4.22).
I.21	2.G Other product manufacture and use – N ₂ O and SF ₆ (I.23, 2017) Transparency	Update the description of the methodology used for estimating emissions for categories 2.G.1, 2.G.3.a and 2.G.3.b in the NIR.	Resolved. The Party provided an updated description of the methodology used to estimate emissions from electrical equipment (2.G.1) and N ₂ O emissions from product uses (2.G.3). The ERT considers the description provided by the Party to be transparent.
Agriculture			
A.1	3. General (agriculture) (A.2, 2017) (A.3, 2016) (A.3, 2015) (56, 2013) Accuracy	Apply higher-tier methods and collect country-specific data for all key categories.	Resolved. The ERT noted that CH ₄ emissions from enteric fermentation (3.A) is a key category and that Cyprus used a tier 2 method to estimate CH ₄ emissions from dairy cattle (3.A.1), which contributed about 36.6 per cent of CH ₄ emissions for this key category in 2017. For CH ₄ emissions from manure management (3.B), the ERT considers the estimation method chosen to be appropriate (tier 2 for swine, dairy and other cattle, and tier 1 for sheep, horses, goats, poultry, and mules and asses). Pending issues are covered in ID#s A.3 and A.6 below.
A.2	3. General (agriculture) – N ₂ O (A.8, 2017) Transparency	Report the same GHG emissions from agricultural soils in both the CRF tables and the NIR.	Resolved. Cyprus reported the same GHG emissions from agricultural soils in both the CRF tables and the NIR.
A.3	3.A Enteric fermentation – CH ₄ (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 good practice guidance.	Not resolved. The ERT noted from the NIR (section 5.2.1, p.144) that Cyprus used a tier 2 method to estimate CH ₄ emissions from dairy cattle (3.A.1), which contributed about 36.6 per cent of the CH ₄ emissions for this key category in 2017. However, the ERT also noted that CH ₄ emissions from enteric fermentation for non-dairy cattle, sheep, goats and swine were estimated using a tier 1 method even though these types of livestock are important

ID#	Issue and/or problem classification ^{a, b}	Recommendation made in previous review report	ERT assessment and rationale
			contributors (63.3 per cent in 2017) to the emissions under this key category.
A.4	3.A.4 Other livestock – CH ₄ and N ₂ O (A.9, 2017) Accuracy	Use a data gap filling technique in accordance with the 2006 IPCC Guidelines to calculate the population of horses, and an appropriate database (e.g. international database sources if national data are not available) to estimate the number of mules and asses for 2011–2015, and use these values to estimate CH ₄ emissions from enteric fermentation for this category using a tier 1 methodology; use the same population figures to calculate emissions for category 3.B (manure management).	Resolved. Cyprus reported in the NIR (p.144) information on the use of a data gap filling technique to estimate the population of horses, and mules and asses in 2011–2015. The ERT considers the application of this technique to be in accordance with the 2006 IPCC Guidelines and that it does not lead to an underestimation of emissions from enteric fermentation (3.A) or manure management (3.B) for these livestock in 2017. Cyprus correctly used the same populations of horses, and mules and asses in CRF tables 3.A, 3.B(a) and 3.B(b) to estimate CH ₄ and N ₂ O emissions from enteric fermentation (3.A) and manure management (3.B).
A.5	3.B.3 Swine – CO ₂ and CH ₄ (A.10, 2017) Accuracy	Implement a tier 2 methodology to estimate CH ₄ emissions from manure management for swine, in accordance with the 2006 IPCC Guidelines, which could be done by considering desk studies or expert judgment.	Resolved. Cyprus used a tier 2 methodology to estimate CH ₄ emissions from manure management for swine in accordance with the 2006 IPCC Guidelines.
A.6	3.D.a Direct N ₂ O emissions from managed soils – N ₂ O (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.	Not resolved. The Party used the tier 1 approach for estimating direct N ₂ O emissions from managed soils even though this is a key category. During the review, Cyprus indicated that research into developing country-specific EFs for direct N ₂ O emissions from managed soils has been ongoing since 2017 and that the results of the research are expected to be available to be used for its 2020 annual submission.
A.7	3.D.a.2 Organic N fertilizers – N ₂ O (A.12, 2017) Accuracy	Correct the calculations for the estimation of N excreted applied to soils as organic fertilizer for non-dairy cattle, market swine and other livestock for the entire time series, and use the revised values to estimate N ₂ O emissions from organic fertilizers (3.D.a.2) and indirect N ₂ O emissions from managed soils (3.D.b).	Resolved. Cyprus corrected the estimated N excreted applied to soils as organic fertilizer for non-dairy cattle, market swine and other livestock for the whole time series (NIR section 5.5.1.1). Consequently, it also corrected the estimated N ₂ O emissions from organic fertilizers (3.D.a.2) and indirect N ₂ O emissions from managed soils (3.D.b).
A.8	3.F Field burning of agricultural residues – CO ₂ , CH ₄ and N ₂ O (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	Addressing. The Party provided a reference in the NIR (p.169) to relevant legislation banning crop residue burning. In Cyprus, the field burning of agricultural residues was a widespread practice until 2003, when a law banning it came into force (Law 220/1988 as amended by 109(I)/2002). The ERT noted that no changes have been made to the Frac _{BURN} used to estimate emissions for this category. During the review, the Party clarified that a

ID#	Issue and/or problem classification ^{a, b}	Recommendation made in previous review report	ERT assessment and rationale
		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.	desk study to identify the appropriateness of the current Frac _{BURN} will be done in the future.
A.9	3.G Liming – CO ₂ , CH ₄ and N ₂ O (A.14, 2017) Transparency	Include in the NIR information on the chemical characteristics of the main agricultural soils in Cyprus, including available references, to support the use of the notation key “NO”.	Resolved. Cyprus provided information on the chemical characteristics of the main agricultural soils, including references to information from its Department of Agriculture and expert judgment justifying reporting emissions from liming as “NO” (section 5.5.5 of the NIR). The ERT considers the information to be transparent.
LULUCF			
L.1	4. General (LULUCF) (L.1, 2017) (L.1, 2016) (L.1, 2015) (73, 2013) Transparency	Specify in the NIR and the CRF tables which type of land conversions to forest land are included.	Resolved. In its NIR (section 6.1.2.2), Cyprus classified and reported land area in accordance with the 2006 IPCC Guidelines. It reported land conversions in CRF table 4.1 (land-transition matrix) and in subcategory-specific sections of the NIR (sections 6.2–6.7). See ID#s L.20 and L.21 in table 5.
L.2	4. General (LULUCF) (L.2, 2017) (L.2, 2016) (L.2, 2015) (73, 2013) Comparability	Classify the land areas in accordance with the six land-use categories.	Resolved. The Party reported land areas in accordance with the six land-use categories in the 2006 IPCC Guidelines. It explained the correspondence between the CORINE land-cover categories and the land categories in the 2006 IPCC Guidelines (in NIR table 6.1).
L.3	4. General (LULUCF) (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.	Addressing. In NIR tables 6.8, 6.9, 6.13 and 6.14, Cyprus clearly separated forest land remaining forest land from land converted to forest land by applying appropriate default values from the 2006 IPCC Guidelines. However, with regard to other land remaining other land and land converted to other land, the Party stated in the NIR (p.203) that the rule that any area of land, after remaining for 20 years in the transitional land-use (sub)category, should be transferred to the final land-use (sub)category was not followed for the category other land owing to the high variability of the land areas under this category. Instead, any area of land converted to other land was reported under that category without any transition period. The ERT considers that the justification provided by the Party for the time period assumed for carbon stocks to reach equilibrium is not in accordance with the 2006 IPCC Guidelines (vol. 4, p.2.13).
L.4	4. General (LULUCF) (L.4, 2017) (L.4, 2016) (L.4, 2015) (75, 2013) Transparency	Provide information on managed and unmanaged land in the NIR and specify each land category as, for example, forest land remaining forest land and land converted to forest land.	Resolved. The Party reported in the NIR information on the areas classified as managed and unmanaged lands (pp.51–52 and 173).

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
L.5	4. General (LULUCF) (L.5, 2017) (L.5, 2016) (L.5, 2015) (76, 2013) Transparency	Provide information on the approaches used for the consistent representation of land areas, including definitions and the classification system.	Resolved. The Party reported its overall approach to identifying land area and area changes, namely interpolating and extrapolating data from CORINE land-area maps for 2000, 2006 and 2012. Cyprus reported definitions for the land categories in the NIR (pp.174–175). It also reported in the NIR (p.173) that it used IPCC approach 2 to represent land areas, and how it used CORINE land-cover data. The ERT noted that NIR table 6.2 shows the land area both managed (under Cyprus' control) and unmanaged (not controlled by Cyprus).
L.6	4. General (LULUCF) – CO ₂ (L.6, 2017) (L.7, 2016) (L.7, 2015) (78, 2013) Accuracy	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.	Addressing. The Party has started to report information on land categories beyond forest land remaining forest land (in CRF tables 4.A–F). However, the AD reported in CRF tables 4.A.4–4.F were not consistent with what was reported in CRF table 4.1 and in the NIR (e.g. tables 6.4, 6.5, 6.8, 6.9 and 6.11–6.14). During the review, Cyprus informed the ERT that a process of reviewing, with external assistance, the methodologies used for estimating emissions and removals from the LULUCF sector is ongoing and an improvement plan is being designed with a view to including more detail in future annual submissions.
L.7	4. General (LULUCF) – CO ₂ , CH ₄ and N ₂ O (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 used the notation key “NO” to report on carbon stock changes for several land-use conversions and pools, such as cropland, grassland, settlements, wetlands and other land for the following carbon pools: litter, deadwood and soil organic carbon. However, a justification for the use of the notation key “NO” was not provided. During the review, Cyprus informed the ERT that a process of reviewing, with external assistance, the methodologies used for estimating emissions and removals from the LULUCF sector is ongoing and an improvement plan is being designed with a view to including more detail in future annual submissions.
L.8	4. General (LULUCF) – CO ₂ (L.8, 2017) (L.9, 2016) (L.9, 2015) (79, 2013) Completeness	Do not leave any cells blank in the CRF tables (e.g. for land converted to forest land in CRF table 4.A), thereby ensuring that either an estimate or a notation key is reported in all cells.	Resolved. The Party provided an estimate or reported a notation key for all land-use categories in CRF table 4.A–E.
L.9	4. General (LULUCF) – CO ₂ , CH ₄ and N ₂ O (L.9, 2017) (L.10, 2016) (L.10, 2015) (79, 2013) Completeness	Report all mandatory carbon pools.	Addressing. The Party reported carbon stock changes for all pools, using default EFs from the 2006 IPCC Guidelines. During the review, Cyprus informed the ERT that a process of reviewing, with external assistance, the methodologies used for estimating emissions and removals from the LULUCF sector is ongoing and an improvement plan is being

ID#	Issue and/or problem classification ^{a, b}	Recommendation made in previous review report	ERT assessment and rationale
			designed with a view to including more detail in future annual submissions.
L.10	4. General (LULUCF) (L.11, 2017) (L.13, 2016) (L.13, 2015) (82, 2013) Completeness	Include information on the missing carbon pools and data.	Resolved. The Party provided information on all carbon pools in CRF tables 4.A–F. The Party reported AD, IEFs and emissions, and used the notation key “NO” in some instances.
L.11	4. General (LULUCF) (L.12, 2017) (L.18, 2016) (L.18, 2015) Transparency	Provide information in the NIR on managed and unmanaged land under the grassland and wetlands categories.	Resolved. The ERT noted that all grasslands and wetlands were reported in CRF table 4.1 as managed land and that the Party reported unmanaged grassland and wetlands as “NO”. The Party reported in the NIR (p.192) that, owing to a lack of data on changes in grassland management, it was assumed that the management has remained constant since before 1990, and hence the annual vegetation component does not affect the GHG sinks and sources on an annual basis; it was also assumed that soil organic carbon remained unchanged as the management of the land has not changed. With regard to wetlands, a similar approach was adopted by the Party (see p.196 of the NIR).
L.12	4. General (LULUCF) – CO ₂ (L.17, 2017) Accuracy	Make the necessary corrections in CRF table 4.1 and the NIR to report the total land area correctly and consistently throughout the time series and explain any recalculation resulting from these changes.	Resolved. The ERT noted that the total land area reported in CRF table 4.1 is consistent across the whole time series and estimated at 924.14 kha, of which 322.35 kha are not under the control of Cyprus and are therefore assumed to be unmanaged land.
L.13	4.A Forest land (L.13, 2017) (L.18, 2016) (L.18, 2015) Transparency	Explain in the NIR the reason for reporting unmanaged forest land in CRF table 4.1, which conflicts with the information in the NIR that all forest land is considered to be managed.	Resolved. The Party explained in the NIR (chap. 6, p.178) the reasons for its reporting approach.
L.14	4.A Forest land (L.14, 2017) (L.17, 2016) (L.17, 2015) Transparency	Provide a description of the methodology and assumptions used to identify the forest area.	Addressing. The Party enhanced the description of the methodology used for identifying forest area (section 6.1.2 of the NIR). However, it was not clear how the spatial resolution used for land identification (for CORINE, 25 ha is the smallest unit mapped) was adjusted considering the Party’s forest definition (at least 0.3 ha, tree crown cover at least 10 per cent and minimum tree height of 5 m (at maturity)).
L.15	4.A Forest land (L.15, 2017) (L.19, 2016) (L.19, 2015) Accuracy	Clearly separate forest land remaining forest land from land converted to forest land, applying the appropriate EFs; in the absence of country-specific values, use the appropriate default	Resolved. Cyprus reported separate AD for forest land remaining forest land and land converted to forest land in the NIR (section 6.2.3, p.179) and CRF table 4.A. The ERT noted that Cyprus used generic equations and default EFs from the 2006 IPCC Guidelines.

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
		values from the 2006 IPCC Guidelines.	
L.16	4(V) Biomass burning – CO ₂ , CH ₄ and N ₂ O (L.10, 2017) (L.12, 2016) (L.12, 2015) (81, 2013) Comparability	Provide the missing estimates of emissions from forest fires for land converted to forest land for 2011.	Addressing. Cyprus did not report emissions from fires on land converted to forest land in CRF table 4(V). During the review, the Party stated that such information is not available. Further, Cyprus explained that it only has an estimate for total emissions from forest fires, which includes emissions from land converted to forest land. The Party reported in the NIR (p.182) that all forest fires are reported under forest land remaining forest land. However, the notation key “NE” was used in CRF table 4(V) for land converted to forest land.
L.17	4(V) Biomass burning (L.16, 2017) (L.21, 2016) (L.21, 2015) Transparency	Clarify in the NIR that the CO ₂ emissions from wildfires as reported in CRF table 4(V) are discounted from the CO ₂ emissions reported in CRF table 4.A and therefore double counting does not occur.	Resolved. Cyprus reported that salvage logging is part of forest harvest and that data on salvage logging are published separately from data on forest harvest. The Party also reported in the NIR (p.181) that emissions from salvage logging were included in the calculation of emissions from harvest and not in the emissions from wildfires. The ERT noted that emissions from wildfires were not included in CRF table 4(V) and therefore not double counted. The ERT considers the information reported in the NIR to be transparent.
L.18	4.G HWP – CO ₂ (L.19, 2017) Completeness	Estimate and report emissions and removals from HWP in CRF tables 4 and 4.Gs1 for the entire time series and AD for 2015 in CRF table 4.Gs2.	Resolved. Cyprus reported AD and emissions for HWP in CRF table 4 and 4.G. The Party also reported information on HWP in the NIR (section 6.8, p.205). The ERT considers that emissions from HWP were reported completely and transparently by the Party.
Waste			
W.1	5. General (waste) – CO ₂ , CH ₄ and N ₂ O (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.	Not resolved. No information was reported by the Party regarding the waste streams used as alternative fuel sources in the energy and waste sectors. During the review, the Party explained that the situation regarding alternative fuels derived from locally produced waste will be clarified and resolved for its 2021 annual submission.
W.2	5. General (waste) – CO ₂ , CH ₄ and N ₂ O (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.	Not resolved. No information was reported by the Party regarding the waste streams used as alternative fuel sources in the energy and waste sectors. During the review, the Party explained that this issue will be resolved for its 2021 annual submission.

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
W.3	5. General (waste) – CH ₄ and N ₂ O (W.6, 2017) Transparency	Enhance the NIR by providing explanatory information and justification for any recalculations, specifically including a description of the impacts of AD recalculations on time-series consistency and measures taken to ensure time-series consistency.	Resolved. Explanatory information and justification for any recalculations was provided in the NIR (e.g. p.238).
W.4	5.A Solid waste disposal on land – CH ₄ (W.7, 2017) Transparency	Correct the information in the NIR to clarify that there are both managed and unmanaged waste disposal sites in the country.	Resolved. Correct information describing the MSW management practices in Cyprus was provided in the NIR (section 7.2, p.211, and section 7.2.1, p.214), including the clarification that there are both managed and unmanaged waste disposal sites in the country.
W.5	5.A Solid waste disposal on land – CH ₄ (W.8, 2017) Transparency	Given that the Party uses waste generation rate per capita and population as key drivers to estimate the amounts of solid waste generated in the areas under the effective control of Cyprus, and there are parts of the country that are not under the Party's administrative control, include more detailed information in the NIR on areas under Cyprus' administrative control for which population is used as input to the SWDS model and provide a reference for the population data source.	Resolved. The Party reported in the NIR (p.217) detailed information on estimating waste generation related to the population trend. Cyprus clarified that population data come from the national Statistical Service.
W.6	5.D Wastewater treatment and discharge – CH ₄ and N ₂ O (W.1, 2017) (W.7, 2016) (W.7, 2015) (93, 2013) Transparency	Provide detailed information on the type of handling system used for the treatment of wastewater and sludge, as well as the methodology used for the estimation of emissions.	Resolved. Detailed information on the type of handling system used for the treatment of wastewater and sludge, as well as the methodology used for the estimation of emissions, was reported in the NIR (section 7.5.1 and figure 7.7).
W.7	5.D Wastewater treatment and discharge – CH ₄ and N ₂ O (W.2, 2017) (W.12, 2016) (W.12, 2015) Transparency	Improve the assessment of the information related to the types of infrastructure, technologies and volume of wastewater treated, considering national circumstances, and report this information transparently in the NIR.	Resolved. Detailed information on the types of infrastructure, technologies and volume of wastewater treated, considering national circumstances, was reported in the NIR (section 7.5.1 and table 7.18).
W.8	5.D Wastewater treatment and discharge – CH ₄ (W.3, 2017) (W.11, 2016) (W.11, 2015) Accuracy	Further enhance the use of country-specific data to support the choice of methane conversion factor values in order to better represent the types of activity implemented by the industrial sector to process and dispose of all the wastewater generated,	Resolved. The Party reported information in the NIR (p.231) to support the choice of methane conversion factor values in order to better represent the types of activity for both domestic and industrial wastewater treatment.

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
		including in domestic municipal wastewater treatment plants.	
W.9	5.D Wastewater treatment and discharge – CH ₄ (W.9, 2017) Transparency	Include information in the NIR on the methodological choice followed and, in the light of resource availability, demonstrate that it is in accordance with the UNFCCC Annex I inventory reporting guidelines.	Resolved. The information on wastewater treatment reported in several tables and figures in section 7.5 of the NIR is complete and transparent and the methodology used is in accordance with the 2006 IPCC Guidelines.
W.10	5.D Wastewater treatment and discharge – CH ₄ (W.9, 2017) Transparency	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 general improvement plan for the estimation of emissions for key categories was reported in annex 7 to the NIR (p.336), but not with tasks specific to wastewater treatment and discharge. Further details on the plan to estimate CH ₄ emissions from wastewater treatment and discharge were not provided in the NIR.
W.11	5.D.1 Domestic wastewater – CH ₄ and N ₂ O (W.10, 2017) Accuracy	Account for the component of organic material and N 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 ERT noted that the organic material and the N removed as sludge were not accounted for. During the review, Cyprus assured the ERT that this issue will be addressed for its 2020 annual submission.
KP-LULUCF activities			
KL.1	General (KP-LULUCF activities) (KL.1, 2017) (KL.1, 2016) (KL.1, 2015) Adherence to the reporting guidelines under Article 7, paragraph 1, of the Kyoto Protocol	Implement the workplan to report any emissions or removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, including 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. Cyprus reported information on mandatory activities (AR, deforestation and FM) in the CRF tables, but did not follow the recommendation to complete the map of woody forest vegetation in State and private forests, with a minimum mapping unit of 0.3 ha. During the review, the Party clarified that it is in the process of reviewing, with external assistance, its estimation methodologies for KP-LULUCF activities and plans to include more detail in future annual submissions.
KL.2	General (KP-LULUCF activities) (KL.2, 2017) (KL.1, 2016) (KL.1, 2015) Transparency	Report on the progress of implementation of the workplan designed to report any emissions/removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol.	Not resolved. No information was reported in the NIR on the progress of implementation of the workplan. During the review, the Party indicated that it is in the process of reviewing its methodologies, with external assistance, and that progress has been made in reporting GHG emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol (see ID# KL.1 above).

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
KL.3	General (KP-LULUCF activities) (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. Cyprus did not provide in the NIR information on how the emissions associated with losses of carbon stock calculated using the IPCC default biomass gain–loss method were estimated, including information clarifying whether the losses comprise wood harvest only or include fuelwood removals and disturbances. During the review, the Party stated that it will provide further information in future annual submissions.
KL.4	General (KP-LULUCF activities) (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 location of the boundaries encompassing areas of land subject to AR, deforestation and FM (see ID# KL.1 above). The ERT considers that the lack of this information prevents Cyprus from calculating an accurate background level and margin. During the review, the Party informed the ERT that it will include this information in its 2020 annual submission.
KL.5	General (KP-LULUCF activities) (KL.5, 2017) Adherence to the UNFCCC Annex I inventory reporting guidelines	Enter the FM cap in the accounting table.	Addressing. The Party reported the FM cap in the CRF accounting table, which is estimated at 197.92 kt CO ₂ eq. However, the ERT noted that the value reported in the CRF accounting table is different from the value in the report on the review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol of Cyprus ^c (196.953 kt CO ₂ eq).
KL.6	FM – CO ₂ (KL.6, 2017) Adherence to the UNFCCC Annex I inventory reporting guidelines	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-I)B.1.	Not resolved. The area of forest included in the land-transition matrix (158.91 kha) is still not consistent with that reported in CRF table NIR-2 (154.74 kha). The ERT noted inconsistencies in the reported area subject to FM between CRF tables NIR-2 (143.97 kha) and 4(KP-I)B.1 (144.57 kha). The ERT also noted that, from the information in NIR table 11.7 (p.255), the total FM area is 144.57 kha, considering that this is the total area of coniferous forest remaining coniferous forest plus broadleaved forest remaining broadleaved forest. The area of 143.97 kha accounts only for coniferous forest remaining coniferous forest according to NIR table 11.7.

^a References in parentheses are to the paragraph(s) and the year(s) of the previous review report(s) in which the issue and/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.

^b The report on the review of the 2018 annual submission of Cyprus was not available at the time of the 2019 review. Therefore, the previous recommendations reflected in table 3 are taken from the 2017 annual review report. For the same reason, 2018 is excluded from the list of review years in which the issue could have been identified.

^c FCCC/IRR/2016/CYP.

IV. Issues identified in three 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 included in table 4 have been identified in three successive reviews, including the review of the 2019 annual submission of Cyprus, and have not been addressed by the Party.

Table 4

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

<i>ID#</i>	<i>Previous recommendation for the issue identified</i>	<i>Number of successive reviews issue not addressed^f</i>
General		
G.2	Enhance the security and performance of the data archiving and storage system	3 (2015/2016–2019)
G.8	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); and correct the allocation of the emissions erroneously reported in the column “allocation per IPCC Guidelines”	5 (2013–2019)
G.11	Ensure that appropriate methods are used to estimate emissions for key categories	3 (2015/2016–2019)
G.13	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)	3 (2015/2016–2019)
G.15	Report on the progress of implementation of the workplan that includes the description of the 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	3 (2015/2016–2019)
G.20	Conduct an uncertainty analysis for LULUCF after the LULUCF reporting has been completed	3 (2015/2016–2019)
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 (2013–2019)
E.14	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	3 (2015/2016–2019)
E.17	Report in the NIR on any progress achieved in applying higher-tier methods and improving the consistency of the time series	3 (2015/2016–2019)
IPPU		

<i>ID#</i>	<i>Previous recommendation for the issue identified</i>	<i>Number of successive reviews issue not addressed^a</i>
I.13	Report the AD for urea-based catalysts in kt, instead of TJ, in CRF table 2(I).A-Hs2	3 (2015/2016–2019)
I.14	Continue efforts to collect AD and report emissions fully in accordance with the 2006 IPCC Guidelines	3 (2015/2016–2019)
I.15	Further examine whether PFC and NF ₃ emissions from product uses as substitutes for ozone-depleting substance occur in the country and, as appropriate, report estimates or an appropriate notation key (i.e. “NO”) in the corresponding CRF tables	3 (2015/2016–2019)
I.18	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	5 (2013–2019)
Agriculture		
A.3	Estimate emissions for all significant livestock categories using an enhanced livestock characterization and a tier 2 methodology in accordance with the IPCC good practice guidance	5 (2013–2019)
LULUCF		
L.3	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 (2013–2019)
L.6	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 (2013–2019)
L.7	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 (2013–2019)
L.9	Report all mandatory carbon pools	5 (2013–2019)
L.14	Provide a description of the methodology and assumptions used to identify the forest area	3 (2015/2016–2019)
L.15	Clearly separate forest land remaining forest land from land converted to forest land, applying the appropriate EFs; in the absence of country-specific values, use the appropriate default values from the 2006 IPCC Guidelines	3 (2015/2016–2019)
L.16	Provide the missing estimates of emissions from forest fires for land converted to forest land for 2011	5 (2013–2019)
Waste	No issues identified	
KP-LULUCF activities		
KL.1	Implement the workplan to report any emissions or removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, including 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	3 (2015/2016–2019)

<i>ID#</i>	<i>Previous recommendation for the issue identified</i>	<i>Number of successive reviews issue not addressed^a</i>
	areas of AD for FM and the geographical location; and acquire capacity-building assistance to estimate non-CO ₂ emissions	
KL.2	Report on the progress of implementation of the workplan to report any emissions/removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	3 (2015/2016–2019)
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	3 (2015/2016–2019)
KL.4	Include estimates of the background level and margin	3 (2015/2016–2019)

^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 in table 4. As the reviews of the Party's 2015 and 2016 annual submissions were conducted together, they are not considered successive and 2015/2016 is considered as one year.

V. Additional findings made during the individual review of the 2019 annual submission

10. Table 5 contains findings made by the ERT during the individual review of the 2019 annual submission of Cyprus that are additional to those identified in table 3.

Table 5

Additional findings made during the individual review of the 2019 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 and/or a problem?^a</i>
General			
G.22	Key category analysis	<p>The Party applied approach 1 to identify key categories in accordance with paragraph 15 of the UNFCCC Annex I inventory reporting guidelines (see NIR section 1.4 and annex 1), identifying key categories with and without LULUCF, and analysing both level and trend. However, the key category analysis does not account for the uncertainties in the estimates. In response to a question from the ERT on plans for improving the key category analysis, Cyprus noted that it would investigate updating the analysis to include other approaches in the 2006 IPCC Guidelines (vol. 1, section 4.3) for future annual submissions in accordance with the additional reporting guidance in paragraph 15 of the UNFCCC Annex I inventory reporting guidelines.</p> <p>The ERT encourages the Party to use category-level uncertainty assessment and apply approach 2 to identify additional key categories in order to determine the prioritization of improvement efforts for future annual submissions in accordance with paragraph 15 of the UNFCCC Annex I inventory reporting guidelines.</p>	Not an issue/problem
G.23	Notation keys	<p>The ERT noted that the Party used the notation key “NE” for insignificant categories (see ID#s E.20, E.27 and I.22 below, and I.18 and L.9 in table 3). However, Cyprus did not report sufficient information showing that the likely level of emissions meets the criteria in paragraph 37(b) of the UNFCCC Annex I inventory reporting guidelines when reporting the emissions as “NE”. During the review, the Party clarified that this is a planned area for improvement for its 2022 annual submission.</p> <p>The ERT recommends that Cyprus 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) of the UNFCCC Annex I inventory reporting guidelines.</p>	Yes. Completeness
G.24	Uncertainty analysis	<p>The Party has made progress in quantitatively assessing the uncertainty of the data used for all source and sink categories using approach 1, consistently with paragraph 42 of the UNFCCC Annex I inventory reporting guidelines. The Party reported information on underlying assumptions in table A2.1 of annex 2 to the NIR; however, the source of any expert judgment used to provide underlying assumptions was not sufficiently documented in accordance with the 2006 IPCC Guidelines (vol. 1, section 3.5). During the review, the Party noted that all expert judgments were provided as personal communications in meetings with sectoral experts and that therefore no references or documentation were available.</p> <p>The ERT recommends that the Party 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, consistent with the 2006 IPCC Guidelines (vol.1, section 3.5).</p>	Yes. Transparency
Energy			
E.19	1.A.1.c Manufacture of solid fuels and other energy	Cyprus reported emissions from the manufacture of solid fuels and other energy industries – biomass (1.A.1.c) in CRF table 1.A(a), whereas in the NIR (table 3.3), the emissions were reported as “NO”. During the review, the	Yes. Adherence to the UNFCCC Annex

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue and/or a problem? ^{2a}
	industries – biomass – CO ₂ , CH ₄ and N ₂ O	Party confirmed that the information in NIR table 3.3 was misreported and that CH ₄ and N ₂ O emissions from the manufacture of solid fuels should have been included. The ERT recommends that Cyprus 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).	Inventory reporting guidelines
E.20	1.A.2.c Chemicals – liquid fuels – CO ₂ , CH ₄ and N ₂ O	The Party reported in the NIR (table 3.10) 0.184 kt (8.70 TJ) LPG consumption under chemicals (1.A.2.c) for 2017, in accordance with the national energy balance. However, the consumption of LPG was not included in the liquid fuel consumption reported in CRF table 1.A(a)s2 for this category (the Party reported 58.62 TJ instead of 67.33 TJ) and therefore the LPG consumption was not considered in estimating the emissions for this category. During the review, Cyprus explained that the fuel consumption and the emissions were not intentionally omitted and added that including them would have an impact of 0.5 kt CO ₂ eq (0.55 kt CO ₂ eq as estimated by the ERT). The ERT noted that the difference accounts for 0.006 per cent of the national total emissions in 2017 (excluding LULUCF), which is below the significance threshold 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 recommends that Cyprus 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)s2.	Yes. Completeness
E.21	1.A.2.d Pulp, paper and print – liquid fuels – CO ₂ , CH ₄ and N ₂ O	LPG consumption (0.332 kt) was reported in the 2017 national energy balance under paper, pulp and printing, but was not reported in NIR table 3.10 under pulp, paper and print (1.A.2.d) for the years in which the consumption occurred. The LPG consumption reported under paper, pulp and printing in the energy balance and the corresponding emissions were allocated to the category non-specified industry (1.A.2.m) in the NIR and to the category other (1.A.2.G.viii) in CRF table 1.A(a), instead of to category 1.A.2.d. During the review, the Party acknowledged that consumption of LPG under paper, pulp and printing had been allocated to the incorrect category. The ERT recommends that the Party 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)s2.	Yes. Comparability
E.22	1.A.2.f Non-metallic minerals – liquid fuels – CO ₂ , CH ₄ and N ₂ O	The CO ₂ IEF for liquid fuels for non-metallic minerals reported for 2017 (101.918 t CO ₂ /TJ fuel) is higher than the 2006 IPCC Guidelines default range (75.500–78.800 t CO ₂ /TJ for residual fuel oil). The CO ₂ IEF is within the IPCC default range for the remainder of the time series (1990–2016). During the review, Cyprus stated that CO ₂ emissions from liquid fuels for non-metallic minerals had been incorrectly reported for 2017 and that the correct figure was 364.58 kt CO ₂ instead of 407.25 kt CO ₂ . The Party explained that the error occurred when copying the information from the calculation file into CRF Reporter. The ERT recommends that Cyprus correct its reporting for 2017 of the CO ₂ emissions for liquid fuels for non-metallic minerals in CRF table 1.A(a)s2.	Yes. Accuracy
E.23	1.A.2.g Other (manufacturing industries and construction) –	LPG consumption of 1.315 kt was reported in the 2017 national energy balance under other sector – not specified elsewhere. Cyprus allocated this LPG consumption and the corresponding emissions to category 1.A.2.m in the NIR (table 3.10) and to the category other manufacturing industries and construction (1.A.2.g) in CRF table 1.A(a)s2, instead of to the category other stationary (1.A.5.a). During the review, the Party	Yes. Comparability

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding with recommendation or encouragement</i>	<i>Is finding an issue and/or a problem?^a</i>
	liquid fuels – CO ₂ , CH ₄ and N ₂ O	acknowledged that the LPG consumption and associated emissions should have been reported under the category other stationary (1.A.5.a) in both the NIR and the CRF tables. The ERT recommends that Cyprus correct its 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 and 3.25) and CRF table 1.A(a).	
E.24	1.A.3.b Road transportation – liquid fuels – CO ₂ , CH ₄ and N ₂ O	Cyprus moved to a higher-tier method by using the COPERT V model to estimate emissions from road transportation. However, there was no explanation in the NIR as to whether the model and EFs were appropriate to Cyprus’ national circumstances. During the review, Cyprus explained that it was the first year in which the COPERT V model was used and that further investigation of the EFs and allocation of fuel consumption per vehicle type will be carried out for its 2020 annual submission. The ERT recommends that Cyprus document in its NIR how the COPERT V model and the EFs applied are appropriate to the national circumstances.	Yes. Transparency
E.25	1.A.3.b Road transportation – liquid fuels – CO ₂	The CO ₂ IEF for gasoline for 1993 (67.09 t CO ₂ /TJ) is lower than the 2006 IPCC Guidelines default value (69.3 t CO ₂ /TJ), while for 1994 the CO ₂ IEF (76.15 t CO ₂ /TJ) is higher than the IPCC default. During the review, Cyprus explained that it was the first year in which the COPERT V model was used and that further investigation of the IEFs and fuel consumption per vehicle type used in the model will be carried out with the Department of Labour Inspection for the Party’s 2020 annual submission. The ERT recommends that the Party 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.	Yes. Accuracy
E.26	1.A.3.b Road transportation – liquid fuels – N ₂ O	There is a sharp decrease (by 75.16 per cent) in the reported N ₂ O IEF for diesel oil, from 4.59 kg N ₂ O/TJ in 1999 to 1.14 kg N ₂ O/TJ in 2000. During the review, Cyprus explained that it was the first year in which the COPERT V model was used and that the decrease in the N ₂ O IEF for diesel could be due to the fuel consumption allocated per vehicle type. Cyprus informed the ERT that further investigation with its Department of Labour Inspection will be carried out for the Party’s 2020 annual submission. The ERT recommends that Cyprus correct the N ₂ O EF used to estimate emissions from diesel consumption in road transportation and ensure the time-series consistency of the applied EFs.	Yes. Accuracy
E.27	1.A.3.b.ii Light-duty trucks – liquid fuels – N ₂ O	The Party reported N ₂ O emissions from diesel used by light-duty trucks (1.A.3.b.ii) as “NO” in CRF table 1.A(a) for 1990–1999. For the same period, diesel consumption was allocated to category 1.A.3.b.ii and therefore N ₂ O emissions are expected to occur. The use of the notation key “NO” is not justified in the NIR. During the review, Cyprus explained that it was the first year in which the COPERT V model was used and that further investigation of the fuel consumption allocated per vehicle type will be carried out with the Department of Labour Inspection for the Party’s 2020 annual submission. The ERT recommends that Cyprus correct its estimates of N ₂ O emissions from diesel consumption by light-duty trucks for 1990–1999.	Yes. Completeness
E.28	1.A.4.a Commercial/instituti	The biogas consumption used to estimate emissions from commercial/institutional (1.A.4.a) (CRF table 1.A(a)s4) and reported in NIR table 3.21 (2014 (11 TJ), 2015 (11 TJ), 2016 (12 TJ) and 2017 (12 TJ)) is	Yes. Accuracy

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue and/or a problem? ^{2a}
	onal – biomass – CO ₂ , CH ₄ and N ₂ O	<p>different from the biogas consumption reported in the national energy balance (2014 (12 TJ), 2015 (12 TJ), 2016 (16 TJ) and 2017 (17 TJ)). During the review, Cyprus acknowledged the error and stated that the correct values are those reported in the national energy balance. The ERT noted that the difference represents less than 0.001 per cent of the total emissions for 2017 (excluding LULUCF), which is below the threshold 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 Cyprus correct the CO₂, CH₄ and N₂O emission estimates on the basis of corrected biogas consumption data under commercial/institutional for 2014–2017 and report the correct estimates in its NIR and CRF tables.</p>	
E.29	1.A.4.c.i Stationary – biomass – CO ₂ , CH ₄ and N ₂ O	<p>Cyprus accounted for biogas consumption by ‘autoproducers’ as reported in the national energy balance. According to NIR table 3.21 and CRF table 1.A(a), the biogas consumption and associated emissions were allocated to stationary combustion under agriculture/forestry/fishing (1.A.4.c.i). During the review, Cyprus explained that the consumption of biogas by ‘autoproducers’ was accounted under category 1.A.4.c.i because all the production and consumption of biogas occurs on farms with anaerobic digesters.</p> <p>The ERT recommends that Cyprus explain in the NIR that the consumption of biogas by ‘autoproducers’ is accounted under category 1.A.4.c.i because all the production and consumption of biogas occurs on farms with anaerobic digesters.</p>	Yes. Transparency
IPPU	2.F.1 Refrigeration and air conditioning – HFCs	<p>The Party reported HFC-134a emissions from mobile air conditioning (2.F.1.e) as “NE” for 1990–2004. During the review, Cyprus explained that no data were available for the estimation.</p> <p>The ERT recommends that Cyprus 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, Cyprus should use surrogate data to estimate the emissions in accordance with the 2006 IPCC Guidelines (vol. 1, section 2.2.1).</p>	Yes. Completeness
I.23	2.F.1 Refrigeration and air conditioning – HFCs	<p>The ERT noted significant inter-annual changes in the disposal loss factor for HFC-134a under stationary air conditioning (2.F.1.f) from 1994 to 1995 (117.1 per cent) and from 1995 to 1996 (–67.7 per cent). During the review, the Party indicated that there were errors in the AD estimates for HFC-134a remaining in products at decommissioning as well as in the estimates of emissions from disposal for 1994 and 1995, and provided the correct values. The ERT noted that the errors resulted in the misreporting of HFC-134a emissions in CRF table 2(II)B-H.</p> <p>The ERT recommends that Cyprus correct the AD and revise its 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.</p>	Yes. Accuracy
I.24	2.G.1 Electrical equipment – N ₂ O and SF ₆	<p>Cyprus used a country-specific method to estimate SF₆ emissions from stocks for electrical equipment (2.G.1) that is not in accordance with the 2006 IPCC Guidelines. The country-specific method is a proxy method that uses the average emissions per capita of neighbouring countries as the EF and the population of Cyprus as AD. Cyprus reported SF₆ emissions from disposal and recovery as “NE” (CRF table 2(II)B-Hs2). During the review,</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 and/or a problem?^a</i>
		<p>the Party explained that it used this country-specific method to estimate SF₆ emissions from stocks for electrical equipment and reported SF₆ emissions from disposal and recovery as “NE” because no other AD were available.</p> <p>The ERT recommends that Cyprus estimate SF₆ 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, Cyprus should 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 SF₆ emissions are normally correlated with this parameter.</p>	
I.25	2.G.3 N ₂ O from product uses – N ₂ O	<p>Cyprus used a country-specific method to estimate N₂O emissions from product uses (2.G.3) that is not in accordance with the 2006 IPCC Guidelines. The country-specific method is a proxy method that uses N₂O emissions per capita from product use in Greece as the EF and the population of Cyprus as AD. During the review, Cyprus explained that it used this country-specific method to estimate N₂O emissions from product use because no other AD were available.</p> <p>The ERT recommends that Cyprus estimate N₂O 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, Cyprus should 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 the parameter power grid installed capacity as a driver of SF₆ emissions.</p>	Yes. Accuracy
Agriculture			
A.10	3.B.3 Swine – CH ₄ and N ₂ O	<p>The percentage allocations to manure management systems and climate regions for market swine in CRF table 3.B(a)s2 do not sum to 100 per cent but to 90 per cent in 2017. During the review, Cyprus confirmed that an error had been made when completing CRF table 3.B(a)s2 and that the correct allocation for digesters is 55 per cent, not 45 per cent, bringing the total allocation to 100 per cent. The ERT confirmed that the error in CRF table 3.B(a)s2 does not affect the emission estimates.</p> <p>The ERT recommends that Cyprus correct the digester allocations under manure management systems in CRF table 3.B(a)s.2 for market swine in 2017.</p>	Yes. Transparency
LULUCF			
L.19	4.A Forest land – CO ₂	<p>Cyprus reported in CRF table 4.1 an area of settlements converted to forest land of 0.02 kha. However, the area of settlements converted to forest land reported in CRF table 4.A is 0.42 kha. The total forest area reported in NIR tables 6.4 and 6.5 (158.33 kha) is not consistent with the forest area reported in CRF table 4.1 (158.91 kha). During the review, Cyprus explained that a process of reviewing, with external assistance, its LULUCF estimation methodologies is ongoing and an improvement plan is being designed with a view to including more detail in future NIRs.</p> <p>The ERT recommends that Cyprus revise its 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.</p>	Yes. Adherence to the UNFCCC Annex I inventory reporting guidelines

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding with recommendation or encouragement</i>	<i>Is finding an issue and/or a problem?^a</i>
L.20	4.D Wetlands – CO ₂	<p>Cyprus reported in CRF table 4.1 areas of forest land (0.01 kha), settlements (0.01 kha) and other land (<0.01 kha) for a total of 0.02 kha land converted to wetlands. However, in CRF table 4.D the reported area of land converted to wetlands is 0.85 kha. During the review, Cyprus explained that a process of reviewing, with external assistance, its LULUCF estimation methodologies is ongoing and an improvement plan is being designed with a view to including more detail in future NIRs.</p> <p>The ERT recommends that Cyprus revise its reporting of land areas converted to wetlands and ensure consistency between the information reported in CRF tables 4.1 and 4.D.</p>	Yes. Adherence to the UNFCCC Annex I inventory reporting guidelines
L.21	4.E Settlements – CO ₂	<p>Cyprus reported in the NIR (table 6.14) that the area of settlements in 2017 was estimated to be 446.13 kha, whereas in CRF table 4.E the Party reported an area of 70.54 kha. During the review, the Party explained that the inconsistency was due to an error wherein the values in NIR table 6.14 were multiplied by 10, and that the error will be corrected for the 2020 annual submission.</p> <p>The ERT recommends that Cyprus 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.</p>	Yes. Adherence to the UNFCCC Annex I inventory reporting guidelines
Waste			
W.12	5.A Solid waste disposal on land – CH ₄	<p>The amount of waste reported by Cyprus under solid waste disposal (5.A) in NIR table 7.6 included only MSW. Other types of waste disposed to SWDSs, such as industrial waste and sludge, were not taken into account when estimating CH₄ emissions from solid waste disposal for the entire time series. During the review, Cyprus confirmed that it did not consider waste types other than MSW, such as industrial waste and sludge, for estimating CH₄ emissions from solid waste disposal since no information was available for the entire time series and no methodologies are provided in the 2006 IPCC Guidelines.</p> <p>The ERT noted that waste statistics for industrial waste and sludge for Cyprus are publicly available in the Eurostat database (https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_wastrt&lang=en). The ERT also noted that the amounts of MSW reported in the CRF tables are largely consistent with the amounts of mixed ordinary waste reported in the Eurostat database, and that amounts of other types of waste are additional to mixed ordinary waste. The ERT further noted that the 2006 IPCC Guidelines (vol. 5, chap. 2) provide default parameters for estimating emissions from industrial waste and sludge, in addition to providing methods and indicators or drivers that could be used to estimate the missing historical data on amounts of waste disposed to SWDSs (vol. 1, chap. 5.3, and vol. 5, chap. 3.2.2).</p> <p>The ERT considers that CH₄ emissions from solid waste disposal were underestimated for the entire time series. For 2017, the amount of underestimation is approximately 6.66 kt CH₄ (around 166.45 kt CO₂ eq), which is above the significance threshold of 0.05 per cent of the national total GHG emissions.</p> <p>The ERT included this issue in the list of potential problems and further questions raised by the ERT. It recommended that Cyprus provide estimates of CH₄ emissions from all types of waste disposed to SWDSs for the entire time series on the basis of AD on all waste types (e.g. industrial waste and sludge) other than MSW disposed to SWDSs from relevant national sources. If collecting the AD was not possible, the Party was recommended to estimate the amounts of waste types disposed to SWDSs other than MSW by using other relevant sources, such as Eurostat, for the years available and to apply methods and relevant indicators or drivers</p>	Yes. Accuracy

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue and/or a problem? ^a
W.13	5.B.2 Anaerobic digestion at biogas facilities – CH ₄	<p>from the 2006 IPCC Guidelines (vol. 1, section 5.3, and vol. 5, section 3.2.2, respectively) to resolve data gaps, as appropriate.</p> <p>In its written response to the list of potential problems, submitted on 25 October 2019 together with revised CRF tables, Cyprus explained that AD and emissions from animal and vegetal wastes, paper and cardboard wastes, wood wastes, textile wastes and industrial effluent sludge under industrial waste were estimated on the basis of data for 2012–2016, obtained from the national Statistical Service. The Party also explained that it used gross domestic product as a driver to estimate AD for 1990–2011 and the trend in 2012–2016 to forecast AD for 2017. Cyprus provided the methodology used to estimate CH₄ emissions, which uses default parameters from the 2006 IPCC Guidelines. The impact of recalculations on the total CH₄ emissions from solid waste management ranges from 0.03 kt CH₄ in 1991 to 0.72 kt CH₄ in 2017, which corresponds to 0.7 and 18.0 kt CO₂ eq, respectively, for 1991 and 2017. The impact on total national emissions excluding LULUCF is about 0.2 per cent in 2017. The ERT noted that CH₄ emissions in 1990 did not change compared with the original submission, indicating that historical AD prior to 1990 were not considered, which leads to an underestimation in the whole time series. For 2017, the ERT estimates that CH₄ emissions from industrial waste are underestimated by about 2 kt CO₂ eq, which is below the significance threshold 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 Cyprus estimate AD from industrial waste prior to 1990 and revise the associated CH₄ emissions from industrial waste for the whole time series, and provide in the NIR the methodology used to estimate such emissions.</p> <p>The Party stated in the NIR (section 7.3, p.224) that there is no anaerobic digestion of solid waste in the country and therefore it was reported as “NO”. Cyprus reported anaerobic digestion at biogas facilities (5.B.2) as “NO” in CRF table 5.B. However, the ERT noted that NIR table 7.19, on domestic wastewater treatment and discharge, indicates the use of sludge transported for anaerobic treatment for biogas production and therefore emissions under category 5.B.2 would be expected. During the review, Cyprus explained that the emissions from solid waste included only emissions from municipal waste and that all the production and consumption of biogas occurs on farms with anaerobic digesters (see ID# E.29 above). The ERT also noted that is not clear from chapter 3 of the NIR, on the energy sector, that all the production and consumption of biogas occurs on farms with anaerobic digesters.</p> <p>The ERT recommends that Cyprus report CH₄ 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 consumption of biogas on farms with anaerobic digesters for solid waste.</p>	Yes. Completeness
W.14	5.C.1 Waste incineration – CO ₂ , CH ₄ and N ₂ O	<p>Cyprus reported waste incineration (5.C.1) as “NO”, except for waste incineration in cement kilns with energy recovery, which was reported under the energy sector. The ERT noted that AD on waste incinerated without energy recovery are reported by Eurostat for Cyprus under disposal incineration (see https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_wastrt&lang=en). The ERT considers that the underestimation of emissions from waste incineration without energy recovery is below the significance threshold for commencement of an adjustment procedure in accordance with decision 22/CMP.1, annex,</p>	Yes. Completeness

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue and/or a problem? ^a
KP-LULUCF activities	<p>paragraph 80(b), in conjunction with decision 4/CMP.11. During the review, Cyprus explained that it will investigate the AD on waste incinerated without energy recovery for its 2020 annual submission.</p> <p>The ERT recommends that Cyprus estimate and report emissions from waste incineration without energy recovery.</p>	<p>No findings additional to those contained in table 3 were made by the ERT during the 2019 individual review for KP-LULUCF activities.</p>	

^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 to the 2019 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 has elected commitment period accounting and therefore the issuance and cancellation of units for KP-LULUCF activities is not applicable to the 2019 review.

VIII. Questions of implementation

13. No questions of implementation were identified by the ERT during the individual review of the Party's 2019 annual submission.

Annex I

Overview of greenhouse gas emissions and removals for Cyprus for submission year 2019 and data and information on activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, as submitted by Cyprus in its 2019 annual submission

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

Table 1
Total greenhouse gas emissions for Cyprus, base year^a–2017
 (kt CO₂ eq)

	<i>Total GHG emissions excluding indirect CO₂ emissions</i>		<i>Total GHG emissions including indirect CO₂ emissions^b</i>		<i>Land-use change (Article 3.7 bis as contained in the Doha Amendment)^c</i>	<i>KP-LULUCF activities (Article 3.3 of the Kyoto Protocol)^d</i>	<i>KP-LULUCF activities (Article 3.4 of the Kyoto Protocol)</i>	
	<i>Total including LULUCF</i>	<i>Total excluding LULUCF</i>	<i>Total including LULUCF</i>	<i>Total excluding LULUCF</i>			<i>CM, GM, RV, WDR</i>	<i>FM</i>
FMRL								–157.00
Base year	5 445.72	5 696.92	NA	NA	NA		NA	
1990	5 417.66	5 668.85	NA	NA				
1995	6 822.09	7 099.09	NA	NA				
2000	8 462.60	8 393.62	NA	NA				
2010	8 984.65	9 473.17	NA	NA				
2011	8 551.74	9 116.74	NA	NA				
2012	8 032.36	8 577.05	NA	NA				
2013	7 279.90	7 859.64	NA	NA		–36.93	NA	–144.59
2014	7 656.86	8 233.88	NA	NA		–42.28	NA	–145.63
2015	7 748.25	8 320.73	NA	NA		–41.06	NA	–141.22
2016	8 834.89	8 759.13	NA	NA		–36.08	NA	–22.62
2017	8 429.23	8 963.24	NA	NA		–36.76	NA	–133.01

Note: Emissions/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 refers to 1990.

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

Table 2

Greenhouse gas emissions by gas for Cyprus, excluding land use, land-use change and forestry, 1990–2017(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	4 664.61	654.58	285.75	63.88	NO	NO	0.03	NO
1995	5 889.45	744.37	373.29	91.92	NO	NO	0.06	NO
2000	7 140.26	787.63	345.44	120.21	NO	NO	0.08	NO
2010	8 082.33	826.97	318.08	245.65	NO	NO	0.15	NO
2011	7 760.34	832.20	304.61	219.43	NO	NO	0.16	NO
2012	7 229.26	821.88	303.64	222.13	NO	NO	0.16	NO
2013	6 550.83	816.14	277.70	214.83	NO	NO	0.15	NO
2014	6 931.34	816.49	272.87	213.03	NO	NO	0.15	NO
2015	6 956.59	833.03	280.48	250.45	NO	NO	0.16	NO
2016	7 362.10	863.76	287.82	245.28	NO	NO	0.17	NO
2017	7 538.49	881.96	293.05	249.56	NO	NO	0.17	NO
Per cent change 1990–2017	61.6	34.7	2.6	290.6	NA	NA	541.6	NA

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

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

Table 3

Greenhouse gas emissions by sector for Cyprus, 1990–2017(kt CO₂ eq)

	<i>Energy</i>	<i>IPPU</i>	<i>Agriculture</i>	<i>LULUCF</i>	<i>Waste</i>	<i>Other</i>
1990	3 969.76	841.14	471.23	-251.19	386.73	NO
1995	5 132.14	956.68	580.14	-277.01	430.14	NO
2000	6 376.29	997.87	552.35	68.99	467.10	NO
2010	7 495.37	933.62	531.62	-488.52	512.56	NO
2011	7 202.01	877.65	520.91	-565.00	516.17	NO
2012	6 716.01	836.83	497.58	-544.70	526.63	NO
2013	5 794.37	1 064.41	462.82	-579.74	538.04	NO
2014	5 957.50	1 279.73	448.15	-577.02	548.49	NO
2015	6 080.77	1 221.35	457.27	-572.48	561.33	NO
2016	6 480.13	1 225.40	481.54	75.76	572.06	NO

	<i>Energy</i>	<i>IPPU</i>	<i>Agriculture</i>	<i>LULUCF</i>	<i>Waste</i>	<i>Other</i>
2017	6 619.35	1 269.52	494.73	-534.01	579.64	NO
Per cent change 1990–2017	66.7	50.9	5.0	112.6	49.9	NA

Notes: (1) Emissions/removals reported in the sector other (sector 6) are not included in the total GHG emissions; (2) the Party did not report emissions/removals in the sector other (sector 6); the corresponding cells in the CRF tables were blank; (3) Cyprus did not report indirect CO₂ emissions in CRF table 6.

Table 4

Greenhouse gas emissions/removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol by activity, base year^a–2017, for Cyprus
(kt CO₂ eq)

	<i>Article 3.7 bis as contained in the Doha Amendment^b</i>	<i>Activities under Article 3, paragraph 3, of the Kyoto Protocol</i>		<i>FM and elected activities under Article 3, paragraph 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				NA	NA	NA	NA
2013		-37.75	0.82	-144.59	NA	NA	NA	NA
2014		-42.98	0.70	-145.63	NA	NA	NA	NA
2015		-41.64	0.58	-141.22	NA	NA	NA	NA
2016		-36.56	0.47	-22.62	NA	NA	NA	NA
2017		-37.12	0.37	-133.01	NA	NA	NA	NA
Per cent change base year–2017					NA	NA	NA	NA

Note: Values in this table include emissions from land subject to natural disturbances, if applicable.

^a 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 value reported in this column refers to 1990.

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

Table 5

Key relevant data for Cyprus under Article 3, paragraphs 3 and 4, of the Kyoto Protocol in the 2019 annual submission

<i>Key parameters</i>	<i>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
Election of activities under Article 3, paragraph 4	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) (see ID# KL.5 in table 3)
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
4. CM	NA
5. GM	NA
6. RV	NA
7. WDR	NA

Annex II

Information to be included in the compilation and accounting database

Tables 1–5 include the information to be included in the compilation and accounting database for Cyprus. Data shown are from the original annual submission of the Party, including the latest revised estimates submitted, adjustments (if applicable) and the final data to be included in the compilation and accounting database.

Table 1

Information to be included in the compilation and accounting database for 2017, including on the commitment period reserve, for Cyprus

(t CO₂ eq)

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
CPR	Not reported	–	–	42 705 115
Annex A emissions for 2017	–	–	–	–
CO ₂ ^a	7 538 492	–	–	7 538 492
CH ₄	863 988	881 964	–	881 964
N ₂ O	293 055	–	–	293 055
HFCs	249 565	–	–	249 565
PFCs	NO	–	–	NO
Unspecified mix of HFCs and PFCs	NO	–	–	NO
SF ₆	165	–	–	165
NF ₃	NO	–	–	NO
Total Annex A sources	8 945 265	8 963 241	–	8 963 241
Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2017	–	–	–	–
AR	–37 125	–	–	–37 125
Deforestation	366	–	–	366
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2017	–	–	–	–
FM	–133 010	–	–	–133 010

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

Table 2

Information to be included in the compilation and accounting database for 2016 for Cyprus

(t CO₂ eq)

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
Annex A emissions for 2016	–	–	–	–
CO ₂ ^a	7 362 105	–	–	7 362 105
CH ₄	845 965	863 758	–	863 758
N ₂ O	287 818	–	–	287 818
HFCs	245 281	–	–	245 281
PFCs	NO	–	–	NO
Unspecified mix of HFCs and PFCs	NO	–	–	NO
SF ₆	165	–	–	165
NF ₃	NO	–	–	NO
Total Annex A sources	8 741 333	8 759 127	–	8 759 127
Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2016	–	–	–	–

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
AR	-36 556	-	-	-36 556
Deforestation	474	-	-	474
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2016	-	-	-	-
FM	-22 622	-	-	-22 622

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

Table 3

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

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
Annex A emissions for 2015	-	-	-	-
CO ₂ ^a	6 956 590	-	-	6 956 590
CH ₄	815 516	833 034	-	833 034
N ₂ O	280 483	-	-	280 483
HFCs	250 454	-	-	250 454
PFCs	NO	-	-	NO
Unspecified mix of HFCs and PFCs	NO	-	-	NO
SF ₆	164	-	-	164
NF ₃	NO	-	-	NO
Total Annex A sources	8 303 207	8 320 725	-	8 320 725
Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2015	-	-	-	-
AR	-41 641	-	-	-41 641
Deforestation	581	-	-	581
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2015	-	-	-	-
FM	-141 224	-	-	-141 224

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

Table 4

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

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
Annex A emissions for 2014	-	-	-	-
CO ₂ ^a	6 931 338	-	-	6 931 338
CH ₄	799 343	816 489	-	816 489
N ₂ O	272 870	-	-	272 870
HFCs	213 031	-	-	213 031
PFCs	NO	-	-	NO
Unspecified mix of HFCs and PFCs	NO	-	-	NO
SF ₆	148	-	-	148
NF ₃	NO	-	-	NO
Total Annex A sources	8 216 730	8 233 876	-	8 233 876
Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2014	-	-	-	-
AR	-42 979	-	-	-42 979
Deforestation	700	-	-	700
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2014	-	-	-	-

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
FM	-145 631	-	-	-145 631

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

Table 5

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

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
Annex A emissions for 2013	-	-	-	-
CO ₂ ^a	6 550 827	-	-	6 550 827
CH ₄	799 521	816 139	-	816 139
N ₂ O	277 696	-	-	277 696
HFCs	214 832	-	-	214 832
PFCs	NO	-	-	NO
Unspecified mix of HFCs and PFCs	NO	-	-	NO
SF ₆	150	-	-	150
NF ₃	NO	-	-	NO
Total Annex A sources	7 843 026	7 859 644	-	7 859 644
Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2013	-	-	-	-
AR	-37 753	-	-	-37 753
Deforestation	823	-	-	823
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2013	-	-	-	-
FM	-144 594	-	-	-144 594

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

Annex III

Additional information to support findings in table 2 in this report

Missing categories that may affect completeness

The categories for which 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.2.c chemicals (CO₂, CH₄ and N₂O) (see ID# E.20 in table 5 in this report);
- (b) 1.A.3.b.ii light-duty trucks (N₂O) (see ID# E.27 in table 5 in this report);
- (c) 2.F.1 refrigeration and air conditioning (HFCs) (see ID# I.18 in table 3 in this report);
- (d) 2.F.1 refrigeration and air conditioning (HFCs) (see ID# I.22 in table 5 in this report);
- (e) 4 general (LULUCF) (CO₂, CH₄ and N₂O) (see ID# L.9 in table 3 in this report)
(V) biomass burning (CO₂, CH₄ and N₂O) (see ID# L.17 in table 3 in this report);
- (f) 4(V) biomass burning (CO₂, CH₄ and N₂O) (see ID# L.17 in table 3 in this report);
- (g) 5.A solid waste disposal on land (CH₄) (see ID# W.12 in table 5 in this report);
- (h) 5.C.1 waste incineration (CO₂, CH₄ and N₂O) (see ID# W.14 in table 5 in this report).

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 <http://www.ipcc-nggip.iges.or.jp/public/gp/english/>.

IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendía, 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 <http://www.ipcc-nggip.iges.or.jp/public/kpsg>.

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 <http://www.ipcc-nggip.iges.or.jp/public/wetlands/>.

B. UNFCCC documents

Annual review reports

Reports on the individual reviews of the 2013, 2015, 2016 and 2017 annual submissions of Cyprus, contained in documents FCCC/ARR/2013/CYP, FCCC/ARR/2015/CYP, FCCC/ARR/2016/CYP and FCCC/ARR/2017/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%202019.pdf>.

Annual status report for Cyprus for 2019.

Available at <http://unfccc.int/resource/docs/2019/asr/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.
