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Report on the individual review of the annual submission of Cyprus submitted in 2015*

Note by the expert review team

Summary

Each Party included in Annex I to the Convention must submit an annual greenhouse gas (GHG) inventory covering emissions and removals of GHG 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 required 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 2015 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 12 to 17 September 2016 in Nicosia, Cyprus.

* In the symbol for this document, 2015 refers to the year in which the inventory was submitted, not to the year of publication.

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Contents

I. Introduction[1]

1. This report covers the review of the 2015 annual submission of Cyprus organized by the UNFCCC secretariat, in accordance with the "Guidelines for review under Article 8 of the Kyoto Protocol" (decision 22/CMP.1, as revised by decision 4/CMP.11) (hereinafter referred to as the Article 8 review guidelines). As indicated in the Article 8 review guidelines, this review process also encompasses the review under the Convention, as described in the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention" (hereinafter referred to as the UNFCCC review guidelines) and particularly part III, "UNFCCC guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention". The review took place from 12 to 17 September 2016 in Nicosia, Cyprus, and was coordinated by Mr. Vlad Trusca, Mr. Wojtek Galinski and Ms. Claudia do Valle (UNFCCC secretariat). Table 1 provides information on the composition of the expert review team (ERT) that conducted the review of Cyprus.

Table 1
Composition of the expert review team that conducted the review of Cyprus

Area of expertise	*Name*	*Party*
Generalist	Mr. Mikhail Gitarskiy	Russian Federation
Energy	Mr. Norbert Nziramasanga	Zimbabwe
IPPU	Mr. Marius Țăranu	Republic of Moldova
Agriculture	Mr. Donald Kamdonyo	Malawi
LULUCF	Ms. Thelma Krug	Brazil
Waste	Mr. Gustavo Mozzer	Brazil
Lead reviewers	Mr. Mikhail Gitarskiy	
	Mr. Norbert Nziramasanga	

Abbreviations: IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry.

2. This report contains findings based on the assessment by the ERT of the 2015 annual submission against the Article 8 review guidelines. The ERT has made recommendations to resolve those findings related to issues,[2] including issues related to problems.[3] Other findings, and, if applicable, the ERT's encouragements to resolve them, are also included.

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

4. Annex I shows annual greenhouse gas emissions for Cyprus, including totals excluding and including the land use, land-use change and forestry sector and indirect carbon dioxide emissions, and emissions by gas and by sector. Annex I also contains background data related to emissions and removals from activities under Article 3, paragraph 3, forest management under Article 3, paragraph 4, and additional activities

[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, paragraph 6, pending the entry into force of the amendment.

[2] Issues are defined in decision 13/CP.20, annex, paragraph 81.

[3] Problems are defined in decision 22/CMP.1, annex, paragraphs 68 and 69, as revised by decision 4/CMP.11.

under Article 3, paragraph 4, of the Kyoto Protocol if elected, by gas, sector and activity for Cyprus.

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

6. The ERT notes that Cyprus's 2015 annual submission was delayed, consistent with decision 6/CMP.9, paragraph 4. As a result, the review of the 2015 annual submission is being held in conjunction with the review of the 2016 annual submission, in accordance with decision 10/CMP.11, paragraph 1. To the extent that identical information is presented in both annual submissions, the ERT has reviewed this information only once, and, as appropriate, has replicated the findings below in both the 2015 and 2016 annual review reports.

II. Summary and general assessment of the 2015 annual submission

7. Table 2 provides the ERT assessment 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 below.

Table 2
Summary of review results and general assessment of the inventory of Cyprus

Assessment				*Issue or problem ID#(s) in tables 3 and/or 5*[a]
Dates of submission	Original submission: 15 June 2016 (NIR), 15 June 2016, version 12 (CRF tables), SEF tables not submitted as at the date of publication of this report			
	Revised submission: 31 October 2016 and 27 January 2017 (NIR), 4 November 2016 and 27 January 2017, version 14 (CRF tables)			
	The values from the latest submission are used in this report			
Review format	In-country			
	Have any issues been identified in the following areas:			
	1.	Identification of key categories	Yes	G.14, E.19
	2.	Selection and use of methodologies and assumptions	Yes	G.15, E.8, E.20, E.21, I.20, I.21, A.3, A.6, L.3, L.7, L.19, W.11
	3.	Development and selection of emission factors	Yes	E.8
	4.	Collection and selection of activity data	Yes	E.16
	5.	Reporting of recalculations	No	
	6.	Reporting of a consistent time series	Yes	E.8, E.16
	7.	Reporting of uncertainties, including methodologies	Yes	G.6, G.17
	8.	QA/QC	QA/QC procedures were assessed in the context of the national system (see below)	
	9.	Missing categories/completeness[b]	Yes	G.3, I.1, I.4, I.11, I.14, I.15, I.19, L.10, L.12, L.13

Assessment			*Issue or problem ID#(s) in tables 3 and/or 5*[a]
	10. 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?	Yes	
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	
	Have any issues been identified in the following areas:		
	1. National system:		
	(a) The overall organization of the national system, including the effectiveness and reliability of the institutional, procedural and legal arrangements	Yes	G.4, G.9, G.10, G.11
	(b) Performance of the national system functions	Yes	G.11, G.17, G.18
	2. National registry:		
	(a) Overall functioning of the national registry	Yes	G.19
	(b) Performance of the functions of the national registry and the technical standards for data exchange	No	
	3. ERUs, CERs, AAUs and RMUs and on information on discrepancies reported in accordance with decision 15/CMP.1, annex, chapter I.E, taking into consideration any findings or recommendations contained in the SIAR	Yes	G.20
	4. 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, including any changes since the previous annual submission	Yes	G.21
	5. LULUCF activities under Article 3, paragraphs 3 and 4 of the Kyoto Protocol:		
	(a) Reporting in accordance with the requirements of decision 2/CMP.8, annex II, paragraphs 1–5	Yes	KL.1, KL.2
	(b) The Party has demonstrated methodological consistency between the reference level and reporting on forest management in accordance with decision 2/CMP.7, annex, paragraph 14	No	
	(c) The Party has reported information in accordance with decision 6/CMP.9	Yes	KL.1
	(d) The Party plans to apply the provisions for natural disturbances to afforestation and reforestation	No	
	(e) The Party plans to apply the provisions for natural disturbances to forest management	No	
	(f) Country-specific information has been reported to support provisions for natural disturbances, in accordance with decision 2/CMP.7, annex,	Yes	KL.3

Assessment			*Issue or problem ID#(s) in tables 3 and/or 5[a]*
	paragraphs 33 and 34		
	(g) Other issues	No	
CPR	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	
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	
Recommendation for an exceptional in-country review	On the basis of the issues identified, does the ERT recommend that the next[c] review be conducted as an in-country review?	Yes	List of questions and issues to be considered during this in-country review is provided in annex III
Question of implementation	Did the ERT list a question of implementation?	No	

Abbreviations: AAU = assigned amount unit, CER = certified emission reduction unit, CPR = commitment period reserve, CRF = common reporting format, ERT = expert review team, ERU = emission reduction unit, LULUCF = land use, land-use change and forestry, NIR = national inventory report, QA/QC = quality assurance/quality control, RMU = removal unit, SEF = standard electronic format, SIAR = standard independent assessment report, 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", Wetlands Supplement = *2013 Supplement to the 2006 Intergovernmental Panel on Climate Change Guidelines for National Greenhouse Gas Inventories: Wetlands*.

[a] The ERT identified additional issues in all sectors that are not specifically listed in table 3 but are included in table 5.

[b] Missing categories, for which methods are provided in the Intergovernmental Panel on Climate Change (IPCC) *2006 IPCC Guidelines for National Greenhouse Gas Inventories*, may affect completeness and are listed in annex III to this document.

[c] Owing to the timing of the review of the 2015 annual submission, "next" in this context refers to the review of the 2017 annual submission.

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

8. Table 3 compiles all the recommendations made in the previous review report. Cyprus was not subject to an individual inventory review of its 2014 inventory submission, therefore the recommendations reflected in table 3 are from the review of the 2013 inventory submission, published on 11 July 2014. 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 2015 annual submission and provided the rationale for its determination, taking 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

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
General			
G.1	QA/QC and verification (table 3, 2013) Transparency*	Provide more detail in its NIR on the QA/QC procedures carried out and review the inventory (sector by sector) using independent national experts after completing the inventory	Addressing. Cyprus included a description of specific QA/QC procedures in the NIR; however, the QA/QC plan was not included (see also G.9 and G.13 in table 5)
G.2	Inventory planning (table 3, 2013) Transparency*	Improve the transparency of its reporting on all sectors	Addressing. The previous review report included specific recommendations on transparency (see paras. 56, 58, 63, 70, 73, 76, 83, 86, 87, 90, 93 and 95 in document FCCC/ARR/2013/CYP). Cyprus has been able to resolve some of these recommendations but others were evaluated by the current ERT as "addressing" or "not resolved" (see individual evaluation of each recommendation below)
G.3	Activity data (9, 2013) Completeness*	Give priority to the collection of the necessary AD for the energy and industrial processes and product use sectors in order to complete the inventory	Addressing. The enhancement of the AD collection for the energy and IPPU sectors is ongoing
G.4	Inventory planning (10, 2013) Adherence to 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	Addressing. A workplan has been developed for enhancing the legal and institutional arrangements and increasing inter-agency cooperation for the preparation of the national GHG inventory, including for the reporting of the LULUCF sector
G.5	Uncertainty analysis (table 4, 2013) Transparency	Include the revised uncertainty analysis in chapter 1.7 of the NIR as well as the annex to the NIR	Resolved. Cyprus included the required information in its NIR, chapter 1.7
G.6	Uncertainty analysis (table 4, 2013) Transparency*	Include an uncertainty analysis for LULUCF after the LULUCF reporting has been completed	Not resolved. The ERT noted, however, that the Party, in response to the list of potential problems raised by the ERT, has developed a workplan with a view to completing its LULUCF reporting (see also G.17 in table 5)

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
G.7	Inventory planning (tables 3 and 4, 2013) Comparability*	Report notation keys in the CRF tables instead of leaving cells blank and/or reporting zeros	Addressing. The notation key "NE" has been widely used throughout the CRF tables in the Party's submission. However, the ERT noted instances where the cells for emission estimates in the CRF tables were blank (e.g. some cells for the IPPU sector). The ERT is of the view that notation key "NO" must be used when the respective activity does not occur in Cyprus
G.8	Inventory planning (table 4, 2013) Comparability*	Provide relevant explanations in CRF table 9(a), specifically for all cases of notation key "NE" being reported and for sources reported as "IE" (e.g. for indirect emissions from agricultural soils). In addition, correct the allocation of emissions used by the Party that is erroneously reported in the column "allocation per IPCC Guidelines"	Not resolved. The Party did not complete CRF table 9 (previously CRF table 9(a))
Energy			
E.1	1. General (energy sector) – all fuels – all gases (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	Not resolved. Cyprus provided some information in table 1.10 of the NIR (p.50) and under the categories (e.g. for 1.A.1, see p.85 of the NIR). However, the NIR does not include transparent information on how time-series consistency for emission estimates is ensured when using different AD sources
E.2	1. General (energy sector) – all fuels – all gases (35, 2013) Adherence to UNFCCC Annex I inventory reporting guidelines	Harmonize the information presented in the NIR and the CRF tables on the methods (default or country-specific) applied to estimate emissions	Resolved. The Party stated in NIR section 1.4.1 that it used the default EFs from the 2006 IPCC Guidelines and the EFs available from plant-specific information contained in EU ETS reports. In NIR chapter 3.1.2, the Party explained that emissions from the energy sector are based on the EFs included in the 2006 IPCC Guidelines and, where data are available for installations included in the EU ETS, on country- or plant-specific EFs
E.3	Fuel combustion – reference approach – all fuels – CO_2 (24, 2013)	Report apparent energy consumption in CRF table 1.A(c)	Resolved. The Party reported apparent energy consumption correctly in CRF table 1.A.c

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
	Comparability		for all years
E.4	Fuel combustion – reference approach – liquid fuels – CO_2 (25, 2013) Transparency	Provide an explanation for the difference in the import values for petroleum products between the International Energy Agency data and the values reported in CRF table 1.A(b) for all years in the NIR	Resolved. The NIR (section 3.2.9, section 3.2.2 and annex III) describes the Party's efforts to reconcile all versions of the energy balance for Cyprus
E.5	International bunkers and multilateral operations – liquid fuels – CO_2, CH_4 and N_2O (26, 2013) Comparability	Collect separate AD for domestic and international aviation (bunkers) and report the domestic aviation under civil aviation (category 1.A.3.a)	Resolved. The Party reported separate emission estimates for domestic aviation and international aviation in its CRF tables, and explains the estimations in sections 3.2.5.2 (p.95) and 3.5.1 (p.111) of the NIR. Compared with the 2014 submission, the data source for domestic and international aviation for 2005–2014 has been changed from the Statistical Service of Cyprus to Eurocontrol (see table 10.4 of the NIR). For the period 1990–2004, the Party considered domestic aviation to have had the same contribution to the total aviation consumption as in 2005 (see also E.20 in table 5)
E.6	International bunkers and multilateral operations – liquid fuels – CO_2, CH_4 and N_2O (27, 2013) Comparability	Collect separate AD for international navigation and report the related emissions under marine bunkers	Resolved. The Party reported separate emission estimates for domestic navigation and marine bunkers in its CRF tables, and explains the estimations in sections 3.2.5.2 (p.97) and 3.5.1 (p.111) of the NIR. Data for domestic navigation were obtained from the Statistical Service of Cyprus for fuel consumption for the years 1998–2013, and additional assumptions were made to maintain time-series consistency for the years 1990–1997 and 2014 (see also E.21 in table 5)
E.7	Feedstocks, reductants and other NEU of fuels – all fuels – CO_2 (28, 2013) Comparability	Change the reported notation key to "NO" for lubricants and bitumen, if emissions are determined not to be occurring	Resolved. The Party reported emission estimates for lubricants and bitumen in CRF table 1.A.d
E.8	1.A.1.a Public electricity and heat	Use country- and/or plant-specific EFs for the earlier years in the time series, when available	Addressing. Cyprus uses country-specific methods and

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
	production – 1.A.2.f Non-metallic minerals – all fuels – CO_2, CH_4 and N_2O (30, 2013) Consistency*		EFs to estimate emissions for public electricity (1.A.1.a) and non-metallic minerals (1.A.2.f). The Party estimates emissions for 1990–2004 based on 2005 EU ETS data. The Party no longer uses two different sources of EFs. However, the ERT identified some issues with the values of the EFs reported in the NIR and the CRF tables for category 1.A.1.a (see E.10 below). In addition, the EFs for category 1.A.1.a are based on oxidation factors lower than one, and in the cases where country- or plant-specific oxidation factors are used, these should be transparently documented so that the ERT is able to assess the accuracy of the emission estimates
E.9	1.A.2 Manufacturing industries and construction – 1.A.4 Other sectors – all fuels – CO_2, CH_4 and N_2O (31, 2013) Consistency	Conduct research to determine whether the fuel allocation reported for 2005 onwards is reflective of the situation in previous years from the time series	Resolved. In the current submission, NIR figures 3.3 and 3.5 no longer present large differences in trends. For category 1.A.2, the Party estimates emissions for 1990–2004 based on 2005 data from the EU ETS (instead of using two different data sources as was the case in the 2013 submission). For category 1.A.4, the Party explained in NIR section 3.2.6.1 that, to avoid issues of consistency and comparability, it had completed the missing data by using assumptions
E.10	1.A.1.a Public electricity and heat production – liquid fuels – CO_2 (32, 2013) Transparency*	Investigate and explain the reasons behind the fluctuation in CO_2 IEFs after 2005	Not resolved. The Party did not explain in the NIR the reasons behind the fluctuation in the CO_2 IEFs. The ERT is of the view that the fluctuation probably results from changes in the mix of liquid fuels used in this category over time. In addition, Cyprus reported in its NIR (p.85) that the EFs used are in line with the EU ETS (76.67 t CO_2/TJ for HFO and 72.43 t CO_2/TJ for

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
			diesel). However, the IEF for category 1.A.1.a in CRF table 1.A(a)s1 was 78.38 t CO_2/TJ in 2014 (i.e. above the average for HFO and diesel combined)
E.11	1.A.2 Manufacturing industries and construction – all fuels – CO_2, CH_4 and N_2O (33, 2013) Accuracy*	Report disaggregated AD for manufacturing industries and construction	Resolved. In the current submission, Cyprus reported separately emissions from non-ferrous metals (1.A.2.b); chemicals (1.A.2.c); pulp, paper and print (1.A.2.d); food processing (1.A.2.e); and non-metallic minerals (1.A.2.f); and, under other (1.A.2.g), it reported emissions from mining (1.A.2.g.iii), construction (1.A.2.g.v) and other non-specified (1.A.2.g.viii)
E.12	1.A.5 Other (fuel combustion activities) liquid fuels – CO_2 (34, 2013) Transparency	Investigate the nature and use of liquid fuels (other) and report thereon in the NIR	Resolved. Cyprus indicated the type of liquid fuels used in this category. See section 3.2.7.2 of the NIR
E.13	1.A. Fuel combustion – sectoral approach – solid fuels – CO_2 (36, 2013) Accuracy	Make efforts to generate country-specific CO_2 EFs and use higher-tier methods for the entire reporting period	Resolved. Solid fuel consumption occurs only in category 1.A.2.f (a key category according to tables 1.5 and 1.7 of the NIR). As explained in E.8 above, Cyprus uses country-specific methods and EFs for non-metallic minerals (1.A.2.f) and for deriving emissions for 1990–2004 based on 2005 EU ETS data
E.14	1.A.3.b Road transportation – liquid fuels – CO_2 (38, 2013) Transparency	Provide the reason why the EFs applied deviate from the IPCC default EFs in the NIR	Resolved. In the current submission, CO_2 EFs for gasoline and diesel oil are in line with the default values from the 2006 IPCC Guidelines
E.15	1.A.4.b Residential – biomass – CH_4 and N_2O (39, 2013) Adherence to UNFCCC Annex I inventory reporting guidelines	Correct the inconsistency between the information on solid biomass consumption for the residential sector for 2011 reported in table 3.22 of the NIR (2,300.00 TJ) and that in the CRF tables (229.99 TJ)	Not resolved. In the current submission, there are still inconsistencies between the values reported in NIR table 3.25 (previously NIR table 3.22) and the CRF tables. For example, for 2011, the value reported in NIR table 3.25 for solid biofuels is 123 TJ, while in CRF table 1.A(a)s4 it is

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
			300 TJ (for the residential sector). The same inconsistency occurs for all categories in NIR table 3.25 (e.g. 1.A.4.a – commercial sector). Moreover, the Party did not provide any explanation in the NIR as to the reasons for these differences between the NIR and the CRF tables
E.16	1.A.4 Other sectors – biomass – CH_4 and N_2O (40, 2013) Consistency*	Investigate the definition and boundaries of the AD and implement a QA/QC procedure to ensure time-series consistency considering that biomass consumption in 2011 (339.49 TJ) is three times higher than the average of the previous years (121.8 TJ for 2006–2010)	Addressing. The Party revised the AD (see section 3.2.6.1 in the NIR) and, to avoid inconsistencies, is no longer using data from the Statistical Service of Cyprus. In the current submission, in CRF table 1.A(a)s4, the AD for biomass in 2011 for category 1.A.4 is 949 TJ, 34 % higher than the value in 2010 (709.50 TJ). The average value for 2006–2010 is 594.40 TJ. However, the Party did not describe the trends in biomass consumption and, as mentioned in E.15 above, the values in NIR table 3.25 are different from those in CRF table 1.A(a)s4. In addition, the NIR does not include a transparent explanation of the assumption used to estimate fuel consumption and ensure time-series consistency
E.17	1.A.3.b Road transportation – biomass – CH_4 and N_2O (41, 2013) Consistency	Correct inconsistencies in the notation keys used in CRF table 1.A(a)s3; the Party reported "NA" and "NO" for biomass in transport in 1990–2005, while only "NO" is reported under road transportation	Resolved. In the current submission, Cyprus reported AD and emissions in CRF table 1.A(a)s3, for the period 1990–2005, as "NO" for biomass in road transportation – cars (category 1.A.1.b.i) and as "IE" for biomass in road transportation – light duty trucks (category 1.A.1.b.ii), which result in "NO, IE" for biomass in transport (category 1.A.3)
IPPU			
I.1	2. General (IPPU) (43, 2013)	Conduct the improvement plan to significantly increase the number of categories reported and	Addressing. Cyprus increased the number of categories reported for the first time

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
	Completeness*	report emissions for those categories	since the 2013 submission: in the 2014 submission, Cyprus reported CO_2 emissions from category 2.A.3 (limestone and dolomite use); in its 2016 submission, HFC emissions from category 2.F.3 (fire protection) and N_2O emissions from category 2.G.3 (N_2O from product uses); CO_2 emissions from categories 2.D.1 (lubricant use), 2.D.3 (other: urea-based catalysts, printing, road paving with asphalt, domestic solvent use, including fungicides, asphalt roofing, chemical products, coating applications and dry cleaning) and 2.G.4 (other product use – tobacco combustion and fireworks). The Party also presented information on an improvement plan with specific timelines to report emissions for the remaining categories
I.2	2.F. Product uses as substitutes for ozone depleting substances (51, 2013) Completeness	Investigate the final use of HFC-134a bulk imports and revise the estimates for actual emissions, if necessary	Resolved. Cyprus revised the estimates of actual emissions in order to improve time-series consistency (see section 4.4.2 of the NIR). Where AD were lacking, the Party used the annual per capita emissions average of four neighbouring countries (Greece, Italy, Malta and Spain) to calculate HFC stock emissions for four categories (2.F.1, 2.F.2, 2.F.3 and 2.F.4), based on the population of Cyprus in each corresponding year, for the whole time series. However, the ERT identified further issues (see also I.18 in table 5)
I.3	2.F.1 Refrigeration and air conditioning – HFCs (45, 2013) Consistency	Keep up the efforts to ensure time-series consistency in the estimates of HFC emissions from refrigeration and air-conditioning equipment by estimating emissions for historical years	Resolved. In its NIR (section 4.4.2), the Party ensured time-series consistency by recalculating the HFC emissions from refrigeration and air-conditioning equipment for 1990–2013, using the same methodological approach

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
			explained for I.2 above. However, the ERT identified further issues (see also I.18 in table 5)
I.4	2.F.1 Refrigeration and air conditioning – HFCs (46, 2013) Completeness*	Further examine whether emissions from manufacturing of refrigeration and air-conditioning equipment occur in the country and, as appropriate, report values or revise the use of the notation keys reported	Not resolved. Cyprus reported that emissions from manufacturing do not occur in the country (the notation key "NO" is used in CRF table2(II) B-Hs2 to report emissions from manufacturing). However, during the review, the ERT noted that there are data for the manufacture of non-domestic cooling and ventilation equipment (air-conditioning equipment, commercial refrigerators and commercial freezers) in the publication of the Statistical Service of Cyprus, *Industrial Statistics – 2014*[d]
I.5	2.F.1 Refrigeration and air conditioning – HFCs (47, 2013) Completeness	Further investigate whether there is additional information on the disposal of equipment and either report the associated emissions or change the notation key reported to "NE"	Resolved. Cyprus used the notation key "NE" in CRF table 2(II)B-Hs2 to report HFC emissions from the disposal of equipment
I.6	2.F. Product uses as substitutes for ozone depleting substances – HFCs (48, 2013) Accuracy	Compare the reliability of the estimates derived from the model with those derived from national statistics, and estimate and report emissions for this category using a more reliable method and better data	No longer relevant. The Party changed the methodology used to estimate emissions and the previous model was discontinued
I.7	2.F. Product uses as substitutes for ozone depleting substances – HFCs (49, 2013) Transparency	Collect documentation that supports the assumptions used or use the default charges from the IPCC good practice guidance	Resolved. The Party changed the methodology used to estimate emissions to a country-specific methodology and provided sufficient evidence (see Schwarz et al., 2011[e]) to support this approach
I.8	2.F.3 Fire protection – HFCs (50, 2013) Completeness	Continue efforts to collect information on fire-extinguishing equipment and report the relevant emission estimates	Resolved. Cyprus reported HFC emissions from category 2.F.3 (fire protection)
I.9	2.A.4 Other process uses of carbonates – CO_2 (53, 2013) Completeness	Improve the completeness of reporting by including estimates of emissions from dolomite use	Resolved. Cyprus reported CO_2 emissions from limestone and dolomite use

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
Agriculture			
A.1	3. General (agriculture) (56, 2013) Transparency*	Improve the reporting in the NIR by including the information provided to the ERT during the review on the methods, EFs and AD used across the sector	Addressing. Cyprus provided some detailed information in the NIR (e.g. AD and EFs for dairy cattle and non-dairy cattle), but the ERT considers that there is still space to improve the reporting in the NIR on the methods, EFs and AD used
A.2	3.F Field burning of agricultural residues (56, 2013) Transparency*	Provide a description of and justification for the fraction of agricultural residues actually burned in fields	Not resolved. The Party described in its NIR (section 5.7.2) the assumptions used to estimate the fraction of crop residue that is burned ($Frac_{BURN}$). However, the Party did not provide any supporting documents or an indication of expert judgment on the decision to keep the $Frac_{BURN}$ value constant at 0.1 from 2008 onwards
A.3	3. General (agriculture) (56, 2013) Accuracy*	Apply higher-tier methods and collect country-specific data for all key categories	Addressing. The Party applied IPCC tier 2 methods for enteric fermentation emissions (dairy cattle) and manure management emissions (dairy cattle and non-dairy cattle) in accordance with the 2006 IPCC Guidelines. However, it did not apply a tier 2 method for: (1) other significant livestock in the category 3.A (enteric fermentation) (see A.6 below); (2) significant livestock under category 3.B (manure management); and (3) agricultural soils (direct and indirect N_2O emissions). Cyprus informed the ERT that the possibility of applying a tier 2 method for the estimation of CH_4 emissions for animal species other than cattle is under consideration, and the collection of information regarding the manure management systems and livestock breeding practices in the country is planned and will be undertaken as a priority

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
A.4	3. General (agriculture) (57, 2013) Adherence to UNFCCC Annex I inventory reporting guidelines	Improve the consistency of the information between the CRF tables and the NIR	Resolved. Cyprus improved the consistency of the information between the NIR and the CRF tables
A.5	3. General (agriculture) (58, 2013) Adherence to UNFCCC Annex I inventory reporting guidelines	Develop and implement tier 1 QC procedures to prevent incorrect descriptions in the NIR	Resolved. The ERT did not find incorrect descriptions in the NIR
A.6	3.A Enteric fermentation – CH_4 (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	Addressing. Cyprus implemented higher-tier methods for dairy cattle (seeA.3 above), in accordance with the 2006 IPCC Guidelines. However, CH_4 emissions from sheep and swine (significant in Cyprus), are still estimated using tier 1 methodologies
A.7	3.A Enteric fermentation – CH_4 (61, 2013) Transparency	Include the milk productivity data for dairy cattle as the basis for estimating the EFs, verify these data and report them	Resolved. The Party included the required information in NIR table 5.7 (section 5.2.2)
A.8	3.B Manure management – CH_4 and N_2O (62, 2013) Accuracy	Update the Nex values, as planned, and provide the rationale for the use of all default Nex values	Resolved. The Party updated the Nex values and included the required rationale in the NIR (section 5.3.2)
A.9	3.B Manure management – CH_4 and N_2O (63, 2013) Transparency	Include the document on the allocation of manure to the different AWMS in Cyprus as a reference in the NIR	Resolved. Cyprus included a reference to the document (published as part of the proceedings of the 2010 Sustainable Energy and Environmental Protection conference) in section 5.3.1, footnote 18
A.10	3.B Manure management – CH_4 and N_2O (64, 2013) Transparency	Include information on the choice of default EFs, with an additional description of the country's manure management systems for cattle and swine, in the NIR	Resolved. Cyprus included the required information in the NIR (section 5.3.1)
A.11	3.D.a Direct N2O emissions from managed soils – N_2O (65, 2013)	Estimate and report N_2O emissions from the cultivation of histosols	Resolved. The Party changed the notation key from "NE" to "NO" in CRF table 3.D (cultivation of histosols does

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
	Completeness		not occur in Cyprus)
A.12	3.D.a Direct N2O emissions from managed soils – N_2O (66, 2013) Accuracy	Correct the errors in the EFs used for synthetic fertilizers (0.0112 kg N_2O–N/kg N) and animal manure applied to soils (0.00948 kg N_2O–N/kg N)	Resolved. Cyprus revised the estimates using the default EF from the 2006 IPCC Guidelines (volume 4, table 11.1, p.11.11)
A.13	3.D.a Direct N2O emissions from managed soils – N_2O (67, 2013) Accuracy	Use equation 4.25 from the IPCC good practice guidance for the calculation of N_2O emissions from N-fixing crops and document the revised estimates	Resolved. Cyprus revised the estimates in accordance with the 2006 IPCC Guidelines
A.14	3.F Field burning of agricultural residues – CH_4 and N_2O (68, 2013) Not an issue	Revise the parameter values for the dry matter fraction of oats, dry beans and peas as provided in table 4.16 of the IPCC good practice guidance, and document the revised estimates and their impact on time-series consistency	No longer relevant. In the NIR (section 5.7.2), Cyprus stated that emissions were estimated only for wheat because there is no carbon fraction available for the other crops in the 2006 IPCC Guidelines
A.15	3.F Field burning of agricultural residues – CH_4 and N_2O (69, 2013) Not an issue	Revise the values of the default parameters for potatoes by using the values as provided in table 4.16 of the IPCC good practice guidance, and provide a rationale for the use of N/C ratio for barley and oats as well as the carbon fraction of residues for oats, dry beans and peas in the NIR	No longer relevant. In the NIR, Cyprus reported "NE" for potatoes, beans and barley in CRF table 3.F. In addition, as noted in A.14 above, emissions were estimated only for wheat because there is no carbon fraction available for the other crops in the 2006 IPCC Guidelines
A.16	3.F Field burning of agricultural residues – CH_4 and N_2O (70, 2013) Transparency*	Provide the relevant justification for (e.g. an expert judgment) and supporting documentation on the assumption that 100 % of residues were burned on site in 1990 and that this decreased gradually to 10 % until 2008 and later years	Not resolved. The Party did not provide any supporting documents or an indication of an expert judgment for the decision to keep the $Frac_{BURN}$ value constant at 0.1 from 2008 onwards (see also A.2 above)
LULUCF			
L.1	4. General (LULUCF) (73, 2013) Transparency*	Specify in the NIR and the CRF tables which type of land conversions to forest land are included	Not resolved. The Party provided information only for forest land remaining forest land, and all other subcategories in CRF tables 4.A, 4.B, 4.C, 4.D and 4.E are reported as "NE" or "NO"
L.2	4. General (LULUCF) (73, 2013) Comparability	Classify the land areas in accordance with the six land-use categories in the IPCC good practice guidance for LULUCF	Addressing. The Party presents AD for the six broad land-use categories in the 2006 IPCC Guidelines, as

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
			recommended by the previous ERT, in the NIR (table 6.1 in section 6.1) but not in the CRF tables 4.A to 4.E. Cyprus also presents in CRF table 4.1 a complete matrix with areas and changes in areas for all six categories
L.3	4. General (LULUCF) (74, 2013) Accuracy*	Report the areas converted to a different land use under the relevant land-use conversion category for 20 consecutive years before reporting them under the corresponding land remaining category	Not resolved. The Party did not report information and estimates for any land conversion to other land. The NIR indicates that land converted to forest land is included under forest land remaining forest land but does not clarify if the 20-year transition period has been used (see also L.19 in table 5)
L.4	4. General (LULUCF) (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	Addressing. The Party provided the required information in the NIR (section 6.3, p.163), indicating that all forest land is managed. However, the ERT is of the view that Cyprus should have reported related information on the other land-use categories (see the rationale presented for L.10 below). In CRF table 4.A, aggregate estimates are reported for forest land remaining forest land and land converted to forest land
L.5	4. General (LULUCF) (76, 2013) Transparency*	Increase the transparency of the reporting by providing information on the approaches used for the consistent representation of land areas, including definitions and the classification system	Not resolved. The Party provided the overall approach to identify land area and area changes but provided a definition only for forest land. In addition, the land areas are presented for the entire island of Cyprus (see follow-up in L.17 in table 5)
L.6	4. General (LULUCF) (77, 2013) Consistency	Apply interpolation techniques to ensure that the inter-annual variation in the time series for the areas subject to land-use change reflect real changes and are not due to changes in the underlying data and assumptions	Resolved. The Party applied linear interpolation and extrapolation to estimate area change before 2000 and after 2012 (see NIR, section 6.1, p.155)
L.7	4. General (LULUCF) (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,	Not resolved. The Party reported only the category forest land remaining forest

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
		dead wood and litter, and ensure comparability between the land-use changes both to and from a category	land and includes land converted to forest land in that category (see NIR, section 6.3.1). All other land-use conversions are not reported in CRF tables 4.A to 4.E, while areas are included in CRF table 4.1
L.8	4. General (LULUCF) (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/removals or for which net emissions/removals are negligible	Addressing. The Party improved the use of notation keys, including by using mostly "NE" for the pools for which there is no information on emissions/removals (e.g. CRF tables 4.B, 4.C, 4.D and 4.E). Cyprus also provided correct information in the NIR related to the notation key "NO"; however, some adjustments are still necessary in the application of notation key "NO" for the categories mentioned in L.10 below
L.9	4. General (LULUCF) (79, 2013) Comparability*	Do not leave any cells blank in the CRF tables (e.g. for land converted to forest land in CRF table 5.A), thereby ensuring that either an estimate or a notation key is reported in all cells	Not resolved. In CRF table 4.A (previously CRF table 5.A), the Party did not provide an estimate or a notation key for all the land-use categories except forest land remaining forest land
L.10	4. General (LULUCF) (79, 2013) Completeness*	Report all of the mandatory carbon pools	Not resolved. The Party did not report carbon stock changes for several land-use conversions and/or pools, including for cropland, grassland, settlements, wetlands and other land. Even for forest land remaining forest land, the Party used notation key "NO" in CRF table 4.A for the following carbon pools: litter, deadwood and soil organic carbon. This reporting is not consistent with the fact that the category includes land converted to forest land. During the review, Cyprus acknowledged that LULUCF is the most incomplete sector of the national inventory and indicated that the present system for data collection does not allow for the complete reporting of

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
			emissions and removals. Therefore, the Party reported only on the net emissions from forest land remaining forest land and emissions from wildfires. The ERT noted that Cyprus could use default EFs from the 2006 IPCC Guidelines to provide estimates for all land-use categories, in the absence of country-specific data
L.11	4.B.2 Land converted to cropland (80, 2013) Comparability*	Estimate the carbon stock changes in soil organic matter associated with land-use changes, applying the IPCC default methodology and reporting the notation key "NE" instead of a zero value in the CRF tables. When it is not possible to estimate soil organic matterowing to a lack of country-specific data, use default data from the relevant IPCC guidelines to estimate changes in soil organic matterand report the correct notation key	Resolved. Carbon stock changes in organic soils are reported as "NE" in CRF table 4.B
L.12	4. General (LULUCF) (81, 2013) Completeness*	Provide the missing estimates of emissions from forest fires for land converted to forest land for 2011	Not resolved. Cyprus did not report emissions from fires in land converted to forest land in CRF table 4(V), indicating that all reporting is under forest land remaining forest land (NIR, section 6.3.1)
L.13	4. General (LULUCF) (82, 2013) Completeness*	Include information on the missing carbon pools and data	Not resolved. There are still many activities and pools that are not reported (see L.2 and L.10 above)
L.14	4.A.1 Forest land remaining forest land – CO_2 (83, 2013) Transparency	Provide detailed information on the approach and method used to estimate carbon stock changes in living biomass	Resolved. The Party provided the required information in the NIR (section 6.2.1)
L.15	4.A.1 Forest land remaining forest land – CO_2 (84, 2013) Consistency	Use interpolation and extrapolation techniques in calculating annual estimates for carbon stock changes and make efforts to reduce the influence of random variation in the annual estimates for living biomass	Resolved. Cyprus implemented the recommendation as described in the NIR (section 6.2.3.1) (see also L.6 above)
L.16	4.A.1 Forest land remaining forest land – CO_2 (84, 2013) Accuracy	Provide, in the NIR, annual estimates of the carbon gains and losses in forest land	Resolved. Cyprus applied country-specific values, as indicated in the NIR (section 6.3.1)
Waste			
W.1	5.A Solid waste disposal on land – CH_4	Report all details of the assumptions used in the methodology to estimate CH_4	Resolved. New and revised information is included in the revised NIR (submitted on 27

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
	(86, 2013) Transparency		January 2017). The Party provided a description of the assumptions used to estimate CH_4 emissions (see NIR, section 7.2.1)
W.2	5.A Solid waste disposal on land – CH_4 (87, 2013) Transparency	Include information on the sudden decrease in emissions between 2010 and 2011 in the NIR	Resolved. As presented in the NIR (section 7.2.1), the sudden decrease in solid waste disposal in landfills after 2010 is due to: the reduction of waste generated per capita; investments in composting and recycling; and the handling of some of the municipal solid waste by new and alternative waste handling technologies
W.3	5.A Solid waste disposal on land – CH_4 (88, 2013) Transparency	Provide information on the proportions of solid waste disposed of on land going to managed sites for 2007–2011 in the NIR	Resolved. The NIR (section 7.2.1) provides a time series, including information on the proportion of solid waste disposed of on land that has been allocated to managed disposal sites, deep unmanaged disposal sites and shallow unmanaged disposal sites (see NIR table 7.8)
W.4	5.A Solid waste disposal on land – CH_4 (89, 2013) Accuracy	Correct each percentage of waste composition	Resolved. The revised NIR (submitted on 27 January 2017) included the correct percentages (NIR table 7.12) and the sum of the waste composition now amounts to 100%
W.5	5.A Solid waste disposal on land – CH_4 (90, 2013) Accuracy Transparency	Revise the assumption that all unmanaged disposal sites are considered shallow and include it in the NIR in order to enhance the transparency of the reporting	Resolved. Cyprus has revised its assumption and included in the NIR (table 7.8) an appropriate classification for landfills classified as unmanaged, shallow and deep, and landfills classified as managed
W.6	5.A Solid waste disposal on land – CH_4 (91, 2013) Accuracy	Report correct values for the fraction of municipal solid waste disposed of in solid waste disposal sites in CRF table 6.A	Resolved. The revised NIR submitted on 27 January 2017 (pp.188 and 189) includes information about the DOC fraction of municipal solid waste disposed. The Party also noted that default IPCC values have been selected (NIR table 7.13). Regarding the methane generation rate constant (k), the Party revised

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*[c]	*ERT assessment and rationale*
			its value, selecting the default IPCC value (NIR table 7.14). Owing to the changes in the UNFCCC Annex I inventory reporting guidelines, the reporting of this information is no longer required in CRF table 5.A (previously CRF table 6.A)
W.7	5.D Wastewater treatment and discharge – CH_4 and N_2O (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	Not resolved. The NIR (section 7.5) still lacks a consistent presentation of how wastewater is treated. Information on the installed facilities for wastewater treatment both in the municipal and in the industrial sectors is still missing. In particular, there is no clear information on sludge treatment and disposal processes, although some sludge disposal is reported in the agriculture sector (table 5.19 of the NIR)
W.8	5.D.2 Industrial wastewater – CH_4 and N_2O (94, 2013) Transparency	Correct the incorrect description in chapter 8.3.2 of the NIR	Resolved. The NIR has been completely reformulated and the appropriate descriptions are presented for industrial wastewater (section 7.5.2)
W.9	5.D Wastewater treatment and discharge – CH_4 and N_2O (95, 2013) Transparency	Provide an explanation for the fluctuation in N_2O emissions in the NIR	Resolved. N_2O emissions have been reported adequately and in accordance with the 2006 IPCC Guidelines, and no major fluctuation in N_2O emissions occurs in the current submission
KP-LULUCF			
		There were no recommendations related to KP-LULUCF in the previous review report	

Abbreviations: AD = activity data, AWMS = animal waste management system, C = carbon, CRF = common reporting format, DOC = degradable organic carbon , EF = emission factor, ERT = expert review team, EU ETS = European Union Emissions Trading System, $Frac_{BURN}$ = fraction of crop residue that is burned, GHG = greenhouse gas, HFO = heavy fuel oil, IE = included elsewhere, IEF = implied emission factor, IPCC = Intergovernmental Panel on Climate Change, IPCC good practice guidance = *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, IPCC good practice guidance for LULUCF = *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, IPPU = industrial processes and product use, KP-LULUCF = LULUCF emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, LULUCF = land use, land-use change and forestry, N = nitrogen, NA = not applicable, NE = not estimated, NEU = non-energy use, Nex = nitrogen excretion, NIR = national inventory report, NO = not occurring, QA/QC = quality assurance/quality control, 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", 2006 IPCC Guidelines = *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

[a] References in parentheses are to the paragraph(s) and the year(s) of the previous review report(s) where the issue was raised. Issues are further classified as defined in decision 13/CP.20, annex, paragraph 81. In the review of the supplementary information reported in accordance with Article 7, paragraph 1, of the Kyoto Protocol, the ERT has applied the classification in decision 22/CMP.1, annex, paragraph 69, in conjunction with decision 4/CMP.11.

[b] An asterisk is included next to each issue type for all issues that are also problems, as defined in decision 22/CMP.1, annex, paragraphs 68 and 69, including those that lead to an adjustment or a question of implementation.

[c] Cyprus was not subject to an individual inventory review in 2014. Therefore, the recommendations reflected in table 3 are from the 2013 annual review report. For the same reason, the year 2014 is excluded from the list of years in which the issue has been identified.

[d] Available at <http://www.mof.gov.cy/mof/cystat/statistics.nsf/industry_construction_61main_en/industry_construction_61main_en?OpenForm&sub=1&sel=4>.

[e] Schwarz W, Gschrey B, Leisewitz A, Herold A, Gores S, Papst I, Usinger J, Oppelt D, Croiset I, Pedersen H, Colbourne D, Kauffeld M, Kaar K and Lindborg A. 2011. *Preparatory Study for a Review of Regulation (EC) No. 842/2006 on Certain Fluorinated Greenhouse Gases - Final Report.* Prepared for the European Commission in the context of Service Contract No. 070307/2009/548866/SER/C4.

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

9. In accordance with paragraph 83 of the UNFCCC review guidelines, and as documented in table 4 below, the ERT has assessed that there are no issues to be included in a prominent paragraph.

Table 4
Issues identified in three successive reviews and not addressed by Cyprus

ID#	*Previous recommendation for the issue identified*	*Number of successive reviews issue not addressed*[a]
General		
	No such general issues were identified	
Energy		
	No such issues for the energy sector were identified	
IPPU		
	No such issues for the IPPU sector were identified	
Agriculture		
	No such issues for the agriculture sector were identified	
LULUCF		
	No such issues for the LULUCF sector were identified	
Waste		
	No such issues for the waste sector were identified	
KP-LULUCF		
	No such issues for KP-LULUCF activities were identified	

Abbreviations: IPPU = industrial processes and product use, KP-LULUCF = LULUCF emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, LULUCF = land use, land-use change and forestry.

[a] Cyprus was not subject to an individual inventory review in 2014. Therefore, 2014 is excluded from this table.

V. Additional findings made during the 2015 technical review

10. Table 5 contains findings made by the ERT during the technical review of the 2015 annual submission of Cyprus that are additional to those identified in table 3 above.

Table 5
Additional findings made during the 2015 technical review of the annual submission of Cyprus[a]

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue*[b] *and/or a problem*[c]*? If yes, classify by type*
General			
G.9	National system	During the review, the ERT noted several potential problems related to the functions of the national system of Cyprus, in particular the following that are addressed as specific issues: (a) The information on the national system presented in the NIR lacks a description of the single national entity to be established pursuant to decision 19/CMP.1, annex, paragraph 12(a) and (b), in conjunction with decision 3/CMP.11 (see also G.10) (b) A legal framework has not yet been established in Cyprus to define the roles and responsibilities of specific ministries, agencies and other entities in relation to timely data provision and national GHG inventory preparation as outlined in decision 19/CMP.1, annex, paragraph 12(c), in conjunction with decision 3/CMP.11 (see also G.11) (c) There is limited supplementary information on the LULUCF sector, in particular, the information required by decision 2/CMP.7 and decision 2/CMP.8, annex II, paragraphs 2 and 5 (see also KL.1) (d) There is no detailed QA/QC plan for the national GHG inventory (see also G.13) (e) The information on key category analysis is not presented in line with tables 4.2 and 4.3 from volume 1 of the 2006 IPCC Guidelines (see also G.14) (f) GHG emissions and removals have been estimated with default methods and parameters for most categories, including those identified as key, and the notation key "NE" has been widely used throughout the CRF tables (see also G.15) The ERT concluded, after reviewing the NIR and the information provided during the in-country review, that the national system of Cyprus does not fully follow the requirements outlined in decision 19/CMP.1 in conjunction with decision 3/CMP.11. In particular, the ERT considers that the national system of Cyprus is not performing some of the general functions defined in the annex to decision 19/CMP.1 in conjunction with decision 3/CMP.11, as follows: (a) Establish and maintain the institutional, legal and procedural arrangements necessary to perform the functions defined in the guidelines for national systems, as appropriate, between the government agencies and other entities responsible for the performance of general and specific functions referred to decision 19/CMP.1, annex, paragraph 10, reaffirmed by decision 3/CMP.11 (see	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
		also G.11) (b) Ensure sufficient capacity for the timely performance of the functions defined in the guidelines provided in the annex to decision 19/CMP.1, including data collection for estimating anthropogenic GHG emissions by sources and removals by sinks and arrangements for the technical competence of the staff involved in the inventory development process (c) Designate a single national entity with overall responsibility for the national inventory (see also G.10) (d) Prepare and provide supplementary information in a timely manner in accordance with Article 5 and with Article 7, paragraphs 1 and 2, of the Kyoto Protocol, and relevant decisions of the Conference of the Parties and/or the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, in particular for the LULUCF sector (see also KL.1) Furthermore, the ERT considers that the Party fails to meet some of the specific functions for national systems as outlined in decision 19/CMP.1, annex, paragraphs 12–16: Inventory planning: (a) Define and allocate specific responsibilities in the inventory development process, including those relating to choice of methods and data collection, particularly AD and EFs from statistical services and other entities, processing and archiving, and QA/QC, including definition of the roles of, and cooperation between, government agencies and other entities involved in the preparation of the inventory, as well as the institutional, legal and procedural arrangements made to prepare the inventory (b) Elaborate an inventory QA/QC plan that describes specific QC procedures to be implemented during the inventory development process, facilitate the overall QA procedures to be conducted, to the extent possible, for the entire inventory, and establish quality objectives (see also G.13) (c) Consider ways to improve the quality of AD, EFs, methods and other relevant technical elements of inventories based, inter alia, on the information obtained from the implementation of the QA/QC programme and the review process under Article 8 Inventory preparation: (a) Identify key categories following the methods described in chapter 4.3, volume 1, of the 2006 IPCC Guidelines (see also G.14) (b) Prepare estimates in accordance with the methods described in the 2006 IPCC Guidelines, as implemented through the UNFCCC Annex I inventory reporting guidelines, the *2013 Revised*	

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue[b] and/or a problem[c]? If yes, classify by type
		Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol and the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*, as implemented in accordance with decisions 24/CP.19 and 6/CMP.9, and ensure that appropriate methods are used to estimate emissions from key categories (see also G.15) (c) Make a quantitative estimate of inventory uncertainty for each category and for the inventory in total, following the 2006 IPCC Guidelines, as implemented through the UNFCCC Annex I inventory reporting guidelines, the *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol* and the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*, as implemented in accordance with decisions 24/CP.19 and 6/CMP.9 (see also G.17) Inventory management: Archive inventory information for each year in accordance with decision 19/CMP.1, annex, paragraph 16, and decision 3/CMP.11 (see also G.18) Therefore, the ERT included a question on the national system in the list of potential problems and further questions raised by the ERT, recommending that Cyprus develop a workplan aimed at enhancing the functionality of its national system and resolving the potential problems identified. In response to this list, Cyprus provided a workplan that includes a description of legal, institutional and procedural arrangements for performing the functions of the national system of Cyprus, including: (a) Inventory planning, in particular, establishing cooperation between government agencies and other entities and definition of their roles and responsibilities for inventory preparation in terms of choice of methods, collection of AD and other parameters, and other arrangements for inventory development (b) Inventory preparation, including the GHG emission estimations, key category analysis and assessment of inventory uncertainty (c) Inventory management, in particular, archiving of inventory information and documentation of external and internal reviews and other QA/QC procedures Furthermore, the ERT noted that the workplan also includes a timeline for implementation of specific activities within the national system. In addition to the workplan, Cyprus provided the ERT with information on the single national entity (see G.10), the roles and responsibilities in the inventory development process (see G.11), a national inventory improvement plan (see G.12) and the QA/QC and verification plans (see G.13) The ERT is of the view that the potential problems relevant to the national system have been	

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
		addressed by Cyprus. The ERT further noted the need for considerable enhancement of the institutional capacity of Cyprus in order to ensure continuous and sustainable reporting on supplementary information under the Kyoto Protocol, in particular on the LULUCF sector The ERT recommends that Cyprus report in its NIR on the progress of implementation of the workplan and explain the ongoing activities established for continuous and sustainable reporting, including, inter alia, the enhancement of reporting capacity for supplementary information under the Kyoto Protocol, in particular on the LULUCF sector	
G.10	Inventory planning	During the review, the ERT noted that the national inventory submission of Cyprus does not include information on the single national entity to be established under Article 5 of the Kyoto Protocol as outlined in decision 19/CMP.1 in conjunction with decision 3/CMP.11 In response to the list of potential problems and further questions raised by the ERT during the review (see G.9 above), Cyprus explained that MADRE has been assigned the functions of the designated governmental body responsible for the coordination and implementation of climate-related policy in Cyprus. The Party further explained that MADRE has been assigned the single national entity established in line with the provisions of Article 5 of the Kyoto Protocol and provided the names, affiliations and contact details of persons responsible for overall inventory management The ERT recommends that Cyprus provide in its NIR information on the single national entity	Yes. Transparency*
G.11	Inventory planning	During the review, the ERT noted that a legal framework had not yet been established in Cyprus to define the roles and responsibilities of specific ministries, agencies and other entities in relation to timely data provision and national GHG inventory preparation as outlined in decision 19/CMP.1 in conjunction with decision 3/CMP.11 In response to the list of potential problems and questions raised by the ERT during the review (see G.9 above), Cyprus developed a workplan with the aim of enhancing the functionality of the national system. In the workplan, the Party explained the legal, institutional and procedural arrangements for the performance of the functions of the national system and in particular for the preparation of the inventory MADRE has overall responsibility for national GHG inventory preparation. The designated departments under MADRE perform AD collection, choose the methods and parameters used, calculate GHG emission estimates and compile the national inventory submission. Other institutions involved in the preparation of the inventory include the Energy, Industry and Technology Services of the Ministry of Energy, the Ministry of Transport, the Department for Labour Inspection of the Ministry of Labour, the Statistical Service of the Ministry of Finance, the Electricity Authority of	Yes. Transparency*

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
		Cyprus and private companies such as Vassiliko Cement Works plc and EME Ltd. Their specific responsibilities for inventory development are mainly as data and information providers	
		In order to enhance the legal framework and institutional arrangements for the preparation of the national GHG inventory, Cyprus drafted a decision by the Council of Ministers. The draft decision was elaborated and sent for peer review to the stakeholders involved in the performance of the national system. The Party anticipated that the decision will be taken by the Council of Ministers in 2016 or 2017	
		The ERT recommends that Cyprus include in its NIR a description of institutional arrangements for and the assignment of responsibilities among the ministries and agencies for the timely data provision and national GHG inventory preparation	
G.12	Inventory planning	The ERT noted that Cyprus does not have an inventory improvement plan as a part of its inventory planning	Not an issue
		During the review, Cyprus presented a national inventory improvement plan with the workplan for enhancing national system functionality. The ERT noted that the national inventory improvement plan includes the identification of general and sector-specific priorities for GHG inventory improvements based on institutional arrangements, methods, data availability, key category analyses, QA/QC procedures, and outreach and training activities	
		The ERT encourages Cyprus to include the national inventory improvement plan, and any updates, in the NIR	
G.13	QA/QC and verification	The ERT noted that although the national inventory submission of Cyprus includes a description of specific QA/QC procedures, the QA/QC plan is not included in the NIR (see G.1 in table 3). The ERT also noted that it is not clear from the NIR what time frames for specific QA/QC procedures are and how they are applied to specific sectors and categories	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
		In response to the list of potential problem and further questions raised by the ERT (see G.9 above), Cyprus developed a QA/QC and verification plan and provided it to the ERT in conjunction with the workplan for enhancing national system functionality. The ERT noted that the QA/QC and verification plan includes a detailed description of general and sector-specific QA/QC procedures along with a tentative timeline for their implementation. The ERT also noted that some references provided in the QA/QC plan (e.g. previous IPCC inventories and UNFCCC Annex I inventory reporting guidelines, such as for example IPCC (1997), IPCC (2000) and UNFCCC (2007)) need to be updated for the next inventory submission	

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
		The ERT recommends that Cyprus include the updated QA/QC and verification plan in its NIR	
G.14	Key category analysis	The ERT noted that the presentation of the outcomes of key category analysis in the NIR does not follow the format of tables 4.2 and 4.3 from volume 1 of the 2006 IPCC Guidelines	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
		The ERT recommends that Cyprus present the results of key category analysis following the format of tables 4.2 and 4.3 from volume 1 of the 2006 IPCC Guidelines	
G.15	Methods	The ERT noted that the NIR provides limited information on the methods and parameters used to derive the GHG emission estimates. The ERT also noted that the NIR contains insufficient justification for the choice of methods, assumptions and parameters used, including limited references to literature and other information sources supporting the choice. In particular, EU ETS data and parameters from neighbouring countries were used in the national inventory estimates without sufficient justification. The limited information in the NIR makes it difficult to cross-check and verify GHG emission estimates and the ERT was unable to check the sources of emission parameters and methods used for the estimates	Yes. Transparency*
		In order to enhance the transparency of reporting in the NIR and the CRF tables, the ERT recommends that Cyprus provide sufficient justification of methods, assumptions and emission parameters used in national inventory preparation, including through the provision of supporting references in the literature and other information sources, and ensure that appropriate methods are used to estimate emissions from key categories	
G.16	Other	The ERT noted that a chapter on indirect CO_2 emissions from atmospheric oxidation and N_2O emissions from sources other than agriculture and LULUCF is not included in the NIR	Not an issue
		The ERT encourages Cyprus to explore ways to obtain additional information and report on indirect CO_2 and N_2O emissions	
G.17	Uncertainty analysis	The ERT noted that the uncertainty assessment was performed excluding the LULUCF sector (see G.6 in table 3). The ERT also noted that the uncertainty assessment was made for the GHG inventory as a whole, while category-specific uncertainty assessments were not undertaken, which is not in line with the UNFCCC Annex I inventory reporting guidelines	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
		The ERT recommends that Cyprus report uncertainty assessment with and without the LULUCF sector. The ERT also recommends that Cyprus undertake a quantitative uncertainty assessment for each category of the national inventory and report the results in the NIR	

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
G.18	Archiving	The ERT noted that although Cyprus has a centralized archiving system for storing AD, EFs and inventory estimates in one place, the system is designed in a simplified way and does not allow for the annual archiving of all disaggregated EFs, AD and documentation on how these factors and data have been generated and aggregated during the preparation of the inventory. The ERT also noted that the archiving system applied by the Party may not be capable of storing internal documentation on QA/QC procedures, outcomes of external and internal reviews, documentation on annual key category analyses, and planned inventory improvements as required by decision 19/CMP.1, annex, paragraphs 12–16. The ERT is of the view that the existing archiving system is not secure and self-sustaining	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
		The ERT recommends that Cyprus enhance the security and performance of its data archiving and storage system. This could be achieved, for example, through the establishment of a database or other independent archive with the aim of storing copies of communication records, information on AD and parameters used for GHG estimation, key category analyses and QA/QC procedures applied to the inventories in different years, documentation of external and internal reviews, and planned inventory improvements	
G.19	National registry	The ERT noted that Cyprus has joined the European Union registry consolidated system and that the national registry of Cyprus is currently under development in collaboration with the European Commission. The ERT also noted that the description of the national registry in the NIR does not fully comply with the information required by the annex to decision 5/CMP.1 and the annex to decision 13/CMP.1 in conjunction with decision 3/CMP.11. Specifically, the submission does not include contact information for a designated organization and registry administrator, or a description of the standardized electronic database used for registry performance and publicly accessible information. During the review, Cyprus indicated that MADRE has been assigned the designated organization responsible for registry administration. Furthermore, the ERT was provided with access to publicly available information through the European Union registry website. The ERT also noted that the national registry infrastructure of Cyprus is expected to be finalized in 2016 or 2017	Yes. Transparency*
		The ERT recommends that Cyprus include in the NIR information on the national registry in accordance with the annex to 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	
G.20	Kyoto Protocol units	The ERT noted that the national registry of Cyprus under the Kyoto Protocol is under development in collaboration with the European Commission. As a result of this, the Party has not yet submitted its annual SEF tables, which have not yet been included in the scope of the SIAR	Yes. Transparency*
		The ERT recommends that Cyprus report in its NIR information in accordance with decision 15/CMP.1, annex, paragraphs 12–17, in conjunction with decision 3/CMP.11 and its annex II	

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
G.21	Article 3, paragraph 14, of the Kyoto Protocol	The ERT noted that the information related to Article 3, paragraph 14, of the Kyoto Protocol is not included in the NIR. This information was provided during the review. The information is in accordance with decision 15/CMP.1 The ERT recommends that Cyprus 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	Yes. Transparency*
G.22	Commitment period reserve	The ERT concluded that the commitment period reserve reported by the Party was calculated in accordance with the annex to decision 18/CP.7, the annex to decision 11/CMP.1 and decision 1/CMP.8, paragraph 18	Not an issue
Energy			
E.18	1. General (energy sector) – all fuels – CO_2, CH_4 and N_2O	The energy balance is the main source of AD for the energy sector. The Party presented fuel consumption data by sector in the NIR (table 3.4) but did not present the overall primary energy supply and transformation. Therefore, a comparison with data published by other agencies such as the International Energy Agency is not possible. The absence of primary energy data reduces transparency as its presence would be a quick check on completeness The ERT encourages Cyprus to include summary data on primary energy supply in the NIR in addition to the fuel consumption data and provide, in an annex to the NIR, the full energy balance and associated documentation	Not an issue
E.19	1.A.3.b.i Cars – liquid fuels – CO_2, CH_4 and N_2O	The 2006 IPCC Guidelines recommend the use of higher-tier methods for key categories. The ERT noted that for the key category 1.A.3.b.i (road transportation – cars), the Party estimated GHG emissions without considering the fleet composition. The ERT is of the view that the use of lower tier methods for AD and EFs may result in an underestimation or overestimation of emissions. During the review, the Party explained that it intends to use data from COPERT to calculate emissions for category 1.A.3.b.i in the next submission. The ERT recommends that Cyprus apply higher-tier methods to estimate emissions for category 1.A.3.b.i	Yes. Accuracy*
E.20	1.A.3.a Domestic aviation – liquid fuels – CO_2, CH_4 and N_2O	Data from Eurocontrol, available for the period 2005–2014, are used by the Party to estimate disaggregated AD and emissions for domestic aviation and international aviation. For the period 1990–2004 there are no disaggregated data, so the Party assumes that in that period the ratio of domestic aviation to international aviation is the same as that in 2005 (see E.5 in table 3). The ERT considers, however, that this approach for 1990–2004 should be supported by other parameters such as	Yes. Accuracy*

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		passenger numbers, consumption of light fuel oil and fleet size in order to estimate these emissions more accurately by using higher-tier methods. During the review, the Party informed the ERT that efforts will continue to be made to identify additional data that can be used to improve backward projections from 1990 to 2004	
		The ERT recommends that Cyprus make an effort to collect data to enable the application of higher-tier methods and improve the consistency of the time series. The ERT also recommends that the Party report in the NIR on any progress achieved	
E.21	1.A.3.d Domestic navigation – liquid fuels – CO_2, CH_4 and N_2O	Similar to civil aviation (see E.20 above), Cyprus split fuel data from its energy balance for fuel consumption in navigation between international and domestic marine navigation for the period 1990–1997. Data from the Statistical Service of Cyprus, available for the period 1998–2013, are used by the Party. For the period 1990–1997, the Party considered domestic navigation to have had the same contribution to the total navigation consumption as it did in 1998; for 2014, the contribution of domestic navigation was assumed to be the same as in 2013 (see also E.6 in table 3). The ERT notes, however, that the Party should provide supporting information or references when splitting fuel usage and making backward projections of fuel use in navigation	Yes. Accuracy*
		Cyprus uses a single year fuel split to allocate fuel use over a range of years (see also E.6 in table 3). This introduces greater uncertainty for the estimates for navigation. The ERT considers that, to improve the accuracy of the emissions by using higher-tier methods, there is a need for supporting information on drivers such as the volume of traffic, registered vessels, passengers, the number of trips and the distance covered. During the review, the Party informed the ERT that an effort will be made to identify additional data that can be used to improve the backward projection of emissions from 1990 to 1997	
		The ERT recommends that Cyprus make an effort to collect data to enable the application of higher-tier methods and improve the consistency of the time series. The ERT also recommends that the Party report in the NIR on any progress achieved	
E.22	1.A.3.b Road transportation – liquid fuels – CO_2, CH_4 and N_2O	The energy balance includes biofuels, especially biodiesel. The CRF tables also include biomass fuels in transport (category 1.A.3.b). However, the ERT noted that there is no description in the NIR of the composition of the biodiesel being mixed with the diesel (%), and information on whether all diesel is mixed with biodiesel and whether there are other types of biofuels being used in the country or in road transportation. The inclusion of such a description and information would increase transparency as EFs for the various categories depend on the fuel type. Moreover, the Party did not report CO_2 emissions from biomass fuels in the memo items (CRF table 1.A(a)s4)	Yes. Transparency*
		The ERT recommends that Cyprus provide in the NIR a description of the composition of the biofuels	

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
		used in category 1.A.3.b; that is, the composition of the biodiesel being mixed with the diesel (in per cent), and information explaining whether all diesel is mixed with biodiesel and whether there are other types of biofuels being used in the country or in road transportation The ERT also encourages the Party to report CO_2 emissions from biomass fuels as a memo item in CRF table 1.A(a)s4	
IPPU			
I.10	2.A.1 Cement production – CO_2	As identified in the 2013 ARR (FCCC/ARR/2013/CYP, paragraph 44), in the 2013 submission Cyprus estimated emissions from cement production using three sources for AD: national statistics for 1990–1996, data submitted by installations for the National Allocation Plan under the EU ETS for 1997–2005 and verified EU ETS reports for 2005–2011. During the review of the 2013 annual submission, Cyprus explained that it considered the EF for the earliest year for which verified data are available (1997) to be more realistic and more consistent to use for the years before 1997. The reported value for 1997 in the 2013 annual submission was 0.5347 t CO_2/t clinker. However, for its 2015 and 2016 submissions, Cyprus chose not to use the EF for 1997 for the years 1990–1996, but rather used the higher EF for 2005 based on verified EU ETS data (0.5581 t CO_2/t clinker). Cyprus did not provide adequate information in the NIR to justify the use of the higher factor from 2005, or to explain why the Party no longer considers the value from 1997 appropriate for use for the earlier years in the time series During the review, Cyprus explained that the reason for the change was to reduce the number of different methodological approaches and data sources used. The ERT concludes that Cyprus has not provided a sufficiently robust rationale for the use of the IEF from 2005, as opposed to the use of the IEF from 1997, in the 2013 submission, and that there is a potential overestimation of emissions in the base year. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT. In response to this list, Cyprus provided revised estimates using the EF for 1997 also for the years 1990–1996, which reduced emissions from category 2.A.1 by 4.4 % in 1990. The ERT agreed with the revised estimates The ERT recommends that Cyprus update the description of the methodology used to calculate CO_2 emissions from category 2.A.1 in its NIR	Yes. Transparency*
I.11	2.A.3 Glass production – CO_2	In the submission, Cyprus reported that CO_2 emissions from glass production do not occur in the country (the notation key "NO" was used to report these emissions in CRF table 2(I).A-Hs1). However, during the review, the ERT noted that there are data on the manufacture of flat glass, fibreglass and glass articles in the publication *Industrial Statistics – 2014*[c] (p.159) from the Statistical	Yes. Completeness*

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
		Service of Cyprus The ERT recommends that Cyprus report estimates of CO_2 emissions from glass production	
I.12	2.A.4 Other process uses of carbonates – CO_2	Cyprus estimated CO_2 emissions from category 2.A.4.a (ceramics production) for the period 1990–2014. In its submission, the Party assumed a constant value for the EFs for 1990–2000, the same EF as that for 2003 (0.1598 t CO_2/t ceramics, which is based on a verified emissions report considered in the first EU ETS National Allocation Plan of Cyprus for 2001–2004), without providing adequate justification in the NIR The ERT noted that Cyprus chose the value from 2003 while lower CO_2 EF values were reported before 2003. For instance, the 2001 EF (0.1241 t CO_2/t ceramics) is 22.4% lower than the 2003 value. In addition, the ERT noted that the 2006 IPCC Guidelines provide a method to estimate emissions from ceramics based on carbonate inputs, while Cyprus applies direct measurements from 2001 onwards During the review, Cyprus explained that the reason for its use of a higher EF value was to ensure the application of a more conservative approach for calculating CO_2 emissions from ceramic production, given that collecting the AD on limestone and dolomite consumption and other related plant-specific information for the period 1990–2000 was difficult. The ERT considered that the use of the 2003 EF for the period 1990–2000 caused a potential overestimation of base-year emissions and included this issue in the list of potential problems and further questions raised by the ERT during the review. In response to this list, Cyprus submitted revised estimates using the annual EF for 2001 (0.1241 t CO_2/t ceramic). As a result, CO_2 emissions from ceramic production decreased by approximately 30 % for the years 1990–2000 The ERT agreed with the revised estimates and recommends that Cyprus describe in its NIR the methodology used to calculate CO_2 emissions from category 2.A.4.a	Yes. Transparency*
I.13	2.A.4 Other process uses of carbonates – CO_2	Cyprus reported that CO_2 emissions from category 2.A.4.b (other uses of soda ash) do not occur in the country ("NO" was used in CRF table 2(I).A-Hs1). During the review, the ERT noted that according to the Statistical Service of Cyprus publication *Industrial Statistics – 2014*[c] (pp.154, 156 and 159), the manufacture of corrugated paper and paperboard, soap and detergents is registered in Cyprus, as is the manufacture of fibreglass and technical glassware. According to the 2006 IPCC Guidelines (volume 3, chapter 2, p.2.32), soda ash is used in a variety of applications, including glass production, the manufacture of soaps and detergents, flue gas desulphurization, and the production of chemicals, pulp and paper, and other common consumer products During the review, Cyprus agreed that most probably soda ash is used in certain applications in the country, but the Party had not collected information on soda ash imports and exports before the review	Yes. Transparency*

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
		took place. The ERT noted that excluding the emissions from soda ash consumption would represent a possible underestimation of the CO_2 emissions in all years of the time series and included this issue in the list of potential problems and further questions raised by the ERT. In response to this list, Cyprus obtained information from the customs service and informed the ERT that soda ash in the country is imported for consumption in a bentonite quarry, laboratories and swimming pools, and for the manufacture of building materials and cleaning products. The Party submitted revised estimates of CO_2 emissions from category 2.A.4.b (other uses of soda ash) using the tier 1 methodology proposed by the 2006 IPCC Guidelines (volume 3, p. 2.34, equation 2.14). The ERT agreed with the revised CO_2 estimates provided by Cyprus The ERT recommends that Cyprus describe in its NIR the methodology used to calculate CO_2 emissions from category 2.A.4.b	
I.14	2.B.5 Carbide production – CO_2 and CH_4	Cyprus reported "NO" in CRF table 2(I).A.Hs1 for AD, CO_2 and CH_4 emissions from category 2.B.5.b (calcium carbide). However, during the review, the ERT noted that the production of acetylene is included in the publication *Industrial Statistics – 2014* (p.155).[c] According to the 2006 IPCC Guidelines acetylene (C_2H_2) is produced by reacting calcium carbide (CaC_2) with water, or from the partial oxidation of natural gas. The guidelines also indicate that a substantial use of acetylene is in welding applications, and CO_2 emissions can be derived from the quantity of calcium carbide used in the production of this acetylene The ERT recommends that Cyprus investigate whether acetylene production in Cyprus is based on calcium carbide use and, depending on the results of the investigation, the ERT recommends that Cyprus report estimates of CO_2 emissions from calcium carbide used in acetylene production or revise the use of the notation key "NO"	Yes. Completeness*
I.15	2.D.1 Lubricant use – CO_2	It is stated in the 2015 NIR (annex III) that lubricants in Cyprus are mostly consumed in transport but are also used in industrial applications. The ERT noted that according to the information provided in CRF table 2(I).A-Hs2, the CO_2 emissions from category 2.D.1 (lubricant use) are reported only for the period 1993–2013. There is no information in the NIR explaining the reasons CO_2 emissions for the earliest inventory years (1990–1993) were not calculated. During the review, the Party explained that there are no data available on lubricant use for these specific years The ERT recommends that Cyprus use one of the splicing techniques (i.e. overlap and/or surrogate data) available in the 2006 IPCC Guidelines to fill the gap in the AD for the years 1990–1993 and report CO_2 emission estimates from lubricant use for those years	Yes. Completeness *
I.16	2.D.2 Paraffin wax use –	In CRF table 2(I).A-Hs2, the Party reported CO_2 emissions from category 2.D.2 (paraffin wax use (e.g. for candles, corrugated boxes, paper coating, board sizing, food production, wax polishes,	Yes. Transparency*

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	CO_2	surfactants used in detergents)) using the notation keys "IE" for the period 1990–1998 and "NO" for the period 1999–2010, while no notation key was used (cells were left blank) for more recent years	
		The NIR states that CO_2 emissions from category 2.D.2 (paraffin wax use) have been reported in category 2.G.4 (other product use) and calculated following a CORINAIR methodology for NMVOC emissions that are then converted into CO_2, although the 2006 IPCC Guidelines provide methodological approaches for calculating CO_2 emissions for this category	
		During the review, the ERT noted that AD on paraffin wax consumption are not available in the energy balances of Cyprus, but the customs service of Cyprus would be able to provide data on imports and exports of paraffin wax. The ERT also noted that there are no data available on imports and exports of paraffin wax for the period 1990–2003 and that no paraffin wax production is registered in the country. In addition, the ERT noted that category 2.G.4 (other product use) includes only NMVOC emissions from tobacco combustion and fireworks, and not the CO_2 emissions from paraffin wax use	
		The ERT is of the view that not reporting CO_2 emissions from category 2.D.2 (paraffin wax use) represents a potential underestimation of the CO_2 emissions and therefore included this issue in the list of potential problems and further questions raised by the ERT. In response to this list, Cyprus submitted revised estimates for category 2.D.2 using the tier 1 methodology proposed in the 2006 IPCC Guidelines (volume 3, equation. 5.4, p.5.11), AD calculated based on import, export and consumption of paraffin wax, and default EFs. The ERT agreed with the revised CO_2 estimates	
		The ERT recommends that Cyprus describe in its next NIR the methodology used to calculate CO_2 emissions from category 2.D.2	
I.17	2.D.3 Other (non-energy products from fuels and solvent use) – CO_2	The ERT noted discrepancies in the values for AD used for the estimation of emissions from urea-based catalysts between the NIR and the CRF tables. In NIR table 4.15 the values of AD (2 % of the total annual diesel consumption in Cyprus) are presented in kt (e.g. 4.47 kt for 2014). In CRF table 2(I).A-Hs2, the values should also be in kt; however, they are in TJ (e.g.192.25 TJ for 2014)	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
		The ERT recommends that Cyprus report the AD for urea-based catalysts in kt, instead of TJ, in CRF table 2(I).A-Hs2	
I.18	2.F. Product uses as substitutes for ozone depleting substances – HFCs	Cyprus calculated HFC emissions for F-gases based on the annual per capita emission average of four countries with similar socioeconomic circumstances (Greece, Italy, Malta and Spain) (see NIR, section 4.4.2). The ERT accepted this approach as a temporary solution, until the Party succeeds in collecting enough detailed country-specific information and AD for the entire time series. However, the ERT found some inconsistencies in the methodology applied to categories 2.F.1 and 2.F.4, as follows:	Yes. Accuracy *

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		For category 2.F.1 (refrigeration and air conditioning): An outstandingly high value for the per capita HFC emissions of Malta in 1995 (42.17 kg CO_2 eq/capita) when compared with the previous year's value (0.003 kg CO_2 eq/capita in 1994) and the following years' values (0.01 kg CO_2 eq/capita in 1996–1997, 0.02 kg CO_2 eq/capita in 1998 and 0.03 kg CO_2 eq/capita in 1999); using such a high value of per capita emissions from Malta significantly increased the average value of per capita emissions used by Cyprus in 1995 (13.60 kg CO_2 eq/capita) when compared with the previous year's value (1.09 kg CO_2 eq/capita in 1994) and the following years' values (5.35 kg CO_2 eq/capita in 1996, 8.91 kg CO_2 eq/capita in 1997 and 13.54 kg CO_2 eq/capita in 1998), thus indicating a potential overestimation of the Party's HFC emissions in 1995, which is the base year for HFCs in Cyprus For category 2.F.4 (aerosols): (a) Only the emissions from metered dose inhalers have been taken into account, as aerosols do not occur in Cyprus, as explained by the Party in the NIR (p.132) (b) The annual per capita HFC emission average of Malta has been excluded from the calculation model by mistake, meaning that the annual per capita emission average value for the other three countries (Greece, Italy and Spain) was used instead of the average value for all four countries for the period 2004–2014. This indicates a potential underestimation of HFC emissions from category 2.F.4 (aerosols) in the period 2004–2014; the emissions for 2014 being underestimated by about 23.3 % Owing to the potential overestimation of the base-year emissions (1995 for category 2.F.1) and the underestimation of emissions for the period 2004–2014 (for category 2.F.4), the ERT included these issues in the list of potential problems and further questions raised by the ERT. In response to this list, Cyprus submitted revised estimates for HFC emissions for both categories: (a) For category 2.F.1 (refrigeration and air conditioning), HFC emissions in 1995 were recalculated by using the annual per capita emission average value for three neighbouring countries (Greece, Italy and Spain) (4.08 kg CO_2 eq/capita) instead of the average value for four countries (Greece, Italy, Malta and Spain) (13.60 kg CO_2 eq/capita) (b) For category 2.F.4 (aerosols), HFC emissions were recalculated by using the annual per capita emission average value for four neighbouring countries (Greece, Italy, Malta and Spain) from their original 2015 inventory submissions, for the entire time series. Cyprus stated that it used the original 2015 submission from Spain because Spain had resubmitted its inventory and had revised its emissions for the years 2009–2013 to include pharmaceutical aerosols manufacturing. Cyprus considered that to keep the original 2015 submission as a reference would be better as Spain in that submission provided estimates without pharmaceutical aerosols manufacturing for 2009–2013 The ERT agreed with the revised estimates provided by Cyprus. However, the ERT noted that the	

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		values of total population used for the estimation of emissions from the categories under 2.F (NIR table 4.20, p.131) do not match those used in CRF table 2(I).A-Hs2 for categories 2.F.1 and 2.F.4 The ERT recommends that Cyprus continue its effort to collect AD and report emissions fully in accordance with the 2006 IPCC Guidelines	
I.19	2.F. Product uses as substitutes for ozone depleting substances – PFCs, NF_3	The ERT noted that in NIR table 4.3, PFC emissions have been reported as "NO", while in CRF tables 2(I).s2, 2(II) and 2(II).B-Hs1, no notation keys have been reported. The ERT also noted that the Party has not reported information on NF_3 in NIR table 4.3 and in CRF tables 2(I).s2, 2(II) and 2(II).B-Hs1 no notation keys were reported The ERT recommends that Cyprus examine whether PFC and NF_3 emissions from category 2.F (product uses as substitutes for ozone-depleting substances) occur in the country and, as appropriate, report estimates or use the appropriate notation key (i.e. "NO") in the corresponding CRF tables	Yes. Completeness *
I.20	2.G.1 Electrical equipment – SF_6	Cyprus followed the same methodology applied to F-gases (see I.18 above) to calculate SF_6 emissions in category 2.G.1 (electrical equipment). The methodology applied is based on the annual per capita emission average of four countries (Greece, Italy, Malta and Spain) with similar socioeconomic conditions to Cyprus. Cyprus used the annual per capita emissions to calculate the total annual SF_6 emissions from stocks in the country (expressed in t CO_2 eq) for each corresponding year (see NIR, p.122). The ERT accepted this as a temporary solution, until the Party succeeds in collecting enough detailed country-specific information and AD for the entire time series However, in NIR table 4.17, the ERT noted outstanding values of per capita SF_6 emissions for Malta when compared with other years; specifically, the values for 1995 (0.349 kg CO_2 eq/capita), which is the base year for F-gases in Cyprus, for 2003 (0.342 kg CO_2 eq/capita), 2011 (0.692 kg CO_2 eq/capita) and 2013 (0.397 kg CO_2 eq/capita), which are comparatively high, and for 2012 (0.068 kg CO_2 eq/capita), which is comparatively low. Using such outstanding values for per capita emissions would influence significantly the average values of per capita emissions used by Cyprus in 1995, 2003, 2011, 2012 and 2013 when compared with the values in preceding and following years. At the same time, the ERT noted that the annual per capita SF_6 emission average from stocks for Malta was excluded by mistake from the calculation model, thus potentially leading to an overestimation of SF_6 emissions in 1990 and 1991, and an underestimation of SF_6 emissions in the period 1992–2014 The ERT included this issue in the list of potential problems and further questions raised by the ERT. In response to this list, Cyprus informed the ERT that there were large annual changes in the emissions reported by Malta in its inventory that had not been explained, so Cyprus provided a revised description in its NIR stating that the average value from Malta had not been used in the cluster analysis, and continued to calculate emissions from category 2.G.1 as it had done previously (using	Yes. Accuracy *

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
		stock emissions of Greece, Spain and Italy). The ERT agreed with the approach adopted by the Party The ERT recommends that Cyprus explain in its NIR how the SF_6 emissions from this category are estimated	
I.21	2.G.4 Other (other product manufacture and use) – CO_2	Cyprus reported in the NIR that CO_2 emissions from category 2.G.4 (other product use) are calculated from NMVOC emissions. According to the NIR, NMVOC emissions are obtained from the Department of Labour Inspection, which is responsible for the preparation of the air pollutants inventory for European Union directive 2001/81/EC. The estimation of NMVOC emissions is based on CORINAIR methodology. However, from the information provided in the NIR and CRF table 2(I).A-Hs2, it was not clear to the ERT from which specific "other product manufacture and use" the estimated NMVOC emissions originate. During the review, Cyprus explained that it included in this category emissions from tobacco combustion and fireworks In addition, the ERT noted that according to the information provided in the NIR, the default value for the fossil carbon content fraction of NMVOC emissions used to estimate CO_2 emissions was 60 % by mass, based on information provided in the 2006 IPCC Guidelines (volume 3, p.5.17). However, during the review, while verifying the calculations performed, the ERT noted that the carbon content fraction of the NMVOC emissions used to estimate CO_2 emissions was 85 % by mass instead of 60 % by mass, resulting in an overestimation of CO_2 emissions from "other product manufacture and use" (tobacco combustion and fireworks) The ERT recommends that Cyprus revise the CO_2 emission estimates used in category 2.G.4 using the default value for the fossil carbon content fraction of NMVOC emissions available in the 2006 IPCC Guidelines and that it report them separately for tobacco combustion and fireworks	Yes. Accuracy*
I.22	2.G.4 Other (other product manufacture and use) – CH_4 and N_2O	The Party reported in CRF table 2(I).A-Hs2 the notation key "NE" for CH_4 and N_2O emissions from category 2.G.4 (other (other product manufacture and use)). The NIR does not specify which specific "other product use" has been included in this category. During the review, the Party explained that it included in this category emissions from tobacco combustion and fireworks. The ERT noted that the 2006 IPCC Guidelines do not provide methodologies and EFs for calculating CH_4 and N_2O emissions for these specific sources The ERT recommends that Cyprus examine whether CH_4 and N_2O emissions from category 2.G.4 (other (tobacco combustion and fireworks)) occur in the country and, as appropriate, report estimates or revise the use of the notation keys (i.e. use "NO" rather than "NE") in the corresponding CRF tables	Yes. Comparability*

Agriculture

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
A.17	3.A Enteric fermentation 3.B Manure management 3.D Direct and indirect N2O emissions from agricultural soils – CH_4 and N_2O	The annual population numbers for horses, mules and asses have remained constant throughout the time series (1990–2014); horses at 5,500 head (except for 2002 and 2006, with 6,000 and 5,000 head, respectively) and mules and asses together at 6,700 head. The use of the constant data may lead to underestimation or overestimation of emissions for the two categories. During the review, Cyprus explained that the data used are from the database of the Food and Agriculture Organization of the United Nations (FAOSTAT), as the Party could not identify national data. Based on the documents available during the review, the ERT identified information on livestock censuses in Cyprus for 1985, 1994 and 2010 from which national data could be interpolated. The 2010 livestock census gives the population for horses as 752 head and for mules and asses as 520 head. These numbers are significantly lower than the FAOSTAT numbers that Cyprus has used. The ERT assessment is that by using the FAOSTAT numbers Cyprus is potentially overestimating emissions in the base year and therefore included this issue in the list of potential problems and further questions raised by the ERT. In response to this list, Cyprus provided revised estimates and recalculated emissions from categories 3.A, 3.B and 3.D, as follows: (a) For category 3.A, the CH_4 and N_2O emissions for the entire time series have been recalculated using AD obtained from the agricultural censuses published by the Statistical Service of Cyprus and linearly extrapolated to complete the times series. The revision of Cyprus's animal population reduced emissions in category 3.A (in t CO_2 eq) by 65 % in 1990 and 88 % in both 2013 and 2014 (b) For categories 3.B (manure management) and 3.B.5 (indirect N_2O emissions from manure management), owing to changes in the animal population, the revised estimates reduced emissions of CH_4 and N_2O (in t CO_2 eq) by 3.7 % in 1990, 5.2 % in 2013 and 4.9 % in 2014 (c) For category 3.D.a.2.a (use of organic N fertilizers – animal manure) and 3.D.b (indirect N_2O from managed soils) owing to changes in the animal population, the revised estimates reduced emissions of CH_4 and N_2O (in t CO_2 eq) by 0.7 % in 1990 and 0.9 % in both 2013 and 2014 The ERT agreed with the revised CH_4 and N_2O estimates provided by Cyprus The ERT recommends that Cyprus describe the methodology used to calculate emissions from categories 3.A, 3.B and 3.D in its next NIR. The ERT also recommends that the Party update table 5.2 of the NIR using the correct notation key	Yes. Transparency*
LULUCF			
L.17	4. General (LULUCF) Activity data	In its original submission, Cyprus estimated the annual area under each broad land-use category for the period 1990–2014 by interpolating and extrapolating data from CORINE land area maps for 2000, 2006 and 2012. However, these land areas referred to the entire island. Cyprus submitted revised estimates in which the Party reviewed the emissions in forest land remaining forest land only for	Yes. Transparency*

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
		Cyprus (NIR, p.163). However, there is no information in the NIR on how these areas have been estimated The ERT recommends that Cyprus provide a description of the methodology and assumptions used to identify the forest area	
L.18	4. General (LULUCF) Activity data	Cyprus provides information in the NIR (section 6.3) on managed and unmanaged forest land, and indicates that all forest land is managed (see also L.4 in table 3). However, the ERT noted an inconsistency in CRF table 4.1, which reports 35.65 ha of unmanaged forest land remaining unmanaged land. The ERT also noted that Cyprus does not provide any information in the NIR on the land under grassland or wetlands being managed or unmanaged and in CRF table 4.1 the notation key "NO" is used in the cells unmanaged grassland and unmanaged wetlands The ERT recommends that Cyprus 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. The ERT also recommends that Cyprus provide information in the NIR on managed and unmanaged land in the grassland and wetlands categories	Yes. Transparency*
L.19	4.A Forest land – CO_2	Cyprus includes estimates of net emissions for land converted to forest land under the single land-use category reported (i.e. forest land remaining forest land). This procedure would only be accepted in those cases where the land converted remained in this category for the default period (20 years), but is unlikely to ever be the case. The EFs used for reporting forest land remaining forest land and for land converted to forest land are very different before the default period of 20 years The ERT recommends that Cyprus clearly separate land under forest land remaining forest land and areas of land converted to forest land, applying the appropriate EFs. In the absence of country-specific values, the ERT recommends that Cyprus use the appropriate default values from the 2006 IPCC Guidelines so as to ensure completeness of reporting. The ERT notes that forest land is a key category and that Cyprus should report using country-specific values unless the Party can show that change in carbon stock is insignificant	Yes. Accuracy*
L.20	4.A.1 Forest land remaining forest land	The ERT noted during the review that some country-specific forestry data were available which could provide a more accurate and transparent estimate for some of the parameters used and included this issue in the list of potential problems and further questions raised by the ERT. In response to this list, Cyprus provided revised estimates where: (a) The annual biomass growth per unit area, Gw, for conifers was recalculated using the average annual increment, Iv, of *Pinus brutia* for the years 2000–2014 from data provided by the Department of Forest multiplied by the BCEFI of *Pinus brutia* found in Turkey as published in a study by Tolunay	Not an issue

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue[b] and/or a problem[c]? If yes, classify by type
		(2009).[e] Average Iv was found to be equal to 0.8444 and the BCEFI value used was 0.645, thus Gw for conifers was recalculated to be 0.5446 (b) For broadleaves, the average annual increment of 2.0, which is an estimation, was used after consultation with the Department of Forests, and for BCEFI the default value of 0.550 was used from the 2006 IPCC Guidelines, volume 4, p.4.51, table 4.5 (hardwoods, Mediterranean dry tropical, subtropical, growing stock level: 41–100 m^3). Thus, Gw for broadleaves was recalculated to be 1.1 t dry matter/ha/year (c) Regarding the default values for root-to-shoot ratio, R, and the fraction of carbon in dry matter, CF, the recommendations of the ERT were adopted and these were changed to 0.28 and 0.47, respectively The ERT agreed with the revised estimates and commends Cyprus for updating the NIR and the CRF tables in the resubmission of 27 January 2017	
L.21	4.A.1 Forest land remaining forest land – CO_2	Cyprus applies the default method from the 2006 IPCC Guidelines to estimate the annual change in carbon stocks in living biomass in forest land remaining forest land. This method requires estimates of the annual increase in carbon stocks due to biomass growth and the annual decrease in biomass stocks due to biomass loss. This loss includes those from commercial felling, from fuelwood gathering and other losses The NIR (section 6.1) indicates that the Party estimates losses from felling and wildfires, and an estimate of the annual loss is provided in CRF table 4.A. However, Cyprus also reports CO_2 emissions from wildfires in CRF table 4(V), which could be characterized as double counting. During the review, the ERT noted that the CO_2 emissions reported in CRF table 4(V) were discounted from the CO_2 emissions reported in CRF table 4.A, but this has not been transparently reported in the NIR The ERT recommends that Cyprus, to increase transparency of the reporting, 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	Yes. Transparency*
Waste			
W.10	5.A Solid waste disposal on land – CH_4	The ERT noted that estimation of CH_4 emissions from category 5.A (solid waste disposal on land) was based on a tier 1 method from the 2006 IPCC Guidelines although it is a key category (by level and trend). The 2006 IPCC Guidelines (volume 5, p.3.7) recommend that estimates of emissions should use the IPCC FOD method (tier 2) with default parameters if good quality country-specific AD are available. In addition, because of the way solid waste disposal has evolved over time in Cyprus, the ERT is of the view that underestimation might be occurring. For example, in the NIR (table 7.15), the	Not an issue

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
		Party reported that: (a) Solid waste disposal in shallow unmanaged disposal sites has diminished from 33.5 % in 1990 to zero in 2012 (MCF = 0.4) (b) Disposal in deep unmanaged disposal sites represents the basis of solid waste disposal practices in Cyprus in a relative steady percentage: more than 60 % for the whole time series (MCF = 0.8) (c) Cyprus has been increasing its use of managed disposal sites since 2006 (d) Owing to the lack of transparency regarding the technologies used at the managed disposal sites, it is difficult to conclude if managed disposal sites in Cyprus are classified under the managed – anaerobic (MCF = 1.0) or managed – semi-aerobic (MCF = 0.5) categories (although it is clear from the NIR that no CH_4 capture practices have been implemented in managed landfills) Moreover, the ERT noted that the Party has not included in CRF table 5.A the same information that is included in the NIR. In CRF table 5.A, the Party reported that all solid waste is disposed of at uncategorized waste disposal sites (category 5.A.3) with an intermediary MCF of 0.6 (in accordance with the 2006 IPCC Guidelines, table 3.1), instead of separating the sites as managed waste disposal sites (5.A.1); anaerobic (5.A.1.a); semi-aerobic (5.A.1.b); and unmanaged waste disposal sites (5.A.2). The ERT considered that there could be potential underestimation or overestimation of emissions and included this issue in the list of potential problems and further questions raised by the ERT requesting the Party to: (a) Report AD for waste management systems in a segregated manner, taking into account the type of landfill operations (managed shallow, managed deep and unmanaged) over time as well as their operational status (active or inactive) (b) Provide an adequate assessment of the volume of waste handled at each type of landfill in a transparent manner (c) Use the country-specific AD for solid waste disposal (already presented in the NIR) and apply the available approach to calculate national emissions for the sector. If country-specific AD are not available for key parameters, the ERT recommends that the Party should estimate emissions using the IPCC FOD method, with default parameters and country-specific AD In response to this list, Cyprus submitted revised estimates using the IPCC FOD method with default parameters and country-specific AD, and reported in the revised NIR (submitted on 27 January 2017), a description of the methodology used for the estimations. The ERT agreed with the revised estimates. The revised estimates increased CH_4 emissions for category 5.A by 2.9 % in 1990 and by 0.6 % in	

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
		2013	
W.11	5.D Wastewater treatment and discharge – CH_4	The ERT noted that Cyprus calculated the CH_4 EF used for wastewater handling (categories 5.D.1 – domestic wastewater and 5.D.2 – industrial wastewater) using the default MCF of zero (selected from table 6.8, p.6.21 and table 6.3, p.6.13, respectively, of the 2006 IPCC Guidelines, volume 5). According to the 2006 IPCC Guidelines the selection of this MCF would be adequate under optimum wastewater operational circumstances for non-key categories (domestic and industrial wastewater is a key category for Cyprus in the current submission) During the review, the Party explained that the majority of effluent from the wastewater treatment plants, serving a population of more than 2,000 people, is used for irrigation purposes. Some effluent is disposed of in the sea during the winter months (when there is no demand for irrigation), and some effluent (from two stations) is used for groundwater recharge. Given the specific uses, the plants are closely and strictly monitored to ensure that the effluent is of sufficient quality. This is the reason for the choice of zero as the MCF for wastewater treatment. However, Cyprus acknowledged the inaccuracy of reporting, especially for the earlier years of the inventory, and informed the ERT that it will use an MCF of 0.3 for 1990 and gradually move to a value of zero in the later years of the time series, based on the evolution of the treatment technologies The ERT included this issue in the list of potential problems and further questions raised by the ERT. In response to this list, Cyprus submitted revised estimates using an MCF of 0.3 for 1990 and gradually moved to a value of zero for subsequent years. The ERT considers that the potential problem has been resolved The ERT, while commending Cyprus for its efforts to enhance the use of country-specific data in the revised version of the NIR (27 january 2017), recommends that by the next inventory the Party further enhance the use of country-specific data to support the choice of MCF values in order to better represent the types of activities that have been implemented in the industrial sector to process and dispose of all the wastewater generated, including in domestic municipal wastewater treatment plants	Yes. Accuracy*
W.12	5.D Wastewater treatment and discharge – CH_4 and N_2O	The ERT noted that Cyprus did not provide an adequate description of wastewater treatment AD in its NIR (categories 5.D.1 and 5.D.2). During the review, the Party provided the ERT with additional information and recognized the necessity to further strengthen the characterization of wastewater treatment pathways for both the domestic and the industrial sectors in the NIR The ERT recommends that Cyprus improve the assessment of the information related to the types of infrastructure, technologies and volume of wastewater treated, considering national circumstances, and that the Party report this information transparently in its NIR	Yes. Transparency*

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
W.13	5.D Wastewater treatment and discharge – CH_4	During the review, the ERT requested clarification regarding the assumptions used when recalculating the protein supply quantity and the percentage of BOD reduction for category 5.D, because the Party changed the "waste disposal in septic tanks" correction factor from 1.25 to 1 without explaining the reasons that supported the decision to change it. During the review, the Party provided the justification that the evolution of national circumstances and the impacts of economic fluctuations supported the change The ERT recommends that Cyprus enhance the transparency of the NIR by describing the evolution of national circumstances and the reasons that were considered relevant to support the decision to change the "waste disposal in septic tanks" correction factor from 1.25 to 1	Yes. Transparency*
W.14	5.D.1 Domestic wastewater – CH_4 and N_2O	The ERT noted that Cyprus did not describe in the NIR how sludge is treated and disposed of under category 5.D.1. During the review, the Party explained that some sludge usage has been reported in the agriculture sector, as described in NIR table 5.21 (p.156): "dry sludge applied to soil and nitrogen sewage sludge in tons". The Party acknowledged the inconsistency between the information reported under category 3.D.2.b (sewage sludge applied to soils) and that reported under category 5.D.1 (domestic wastewater), and provided additional information indicating that sludge is being disposed of in multiple ways in Cyprus, such as: (1) disposal in landfills; (2) use as fuel in cement plants; and (3) application to agricultural soils as fertilizer. Cyprus submitted a revised NIR (27 January 2017) in which it included in section 7.5.1 a description of the technologies applied to urban wastewater treatment and stated that further details on wastewater treatment at the plant level would be provided in subsequent submissions from the Party. The ERT commends the Party for this effort and agrees with the updated information provided by Cyprus	Not an issue
KP-LULUCF			
KL.1	General (KP-LULUCF)	According to decision 2/CMP.7, annex, paragraph 25, the national inventory system established under Article 5, paragraph 1, shall ensure that areas of land subject to KP-LULUCF are identifiable, and information on these areas shall be provided by the Party in its national inventory. In addition, according to decision 2/CMP.8, annex II, paragraph 2, information related to afforestation, reforestation, deforestation and forest management shall be provided by the Party, including information on the geographical location of the boundaries of the areas that encompass these units of land. The ERT noted during the review that Cyprus did not report any emissions/removals from: mandatory Article 3, paragraph 3, activities (afforestation, reforestation and deforestation) or Article 3, paragraph 4, activities (forest management); N fertilizer use; N mineralization in mineral soils; indirect N_2O emissions from managed soils; or biomass burning. The ERT included this issue in the list of potential problems and further questions raised by the ERT (see also G.9 above), recommending that the Party provide a workplan that includes information on how Cyprus intends to address the KP-	Yes. Completeness

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue[b] and/or a problem[c]? If yes, classify by type
		LULUCF reporting issues identified by the ERT in future submissions. In response to this list, Cyprus presented the guidelines of the workplan, which include: (a) A statement that it would apply method 2 in section 2.2.2 ("Reporting methods for lands subject to Article 3.3 and Article 3.4 activities") of the *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol* to address information on the geographical location of the boundaries of the areas (b) An assurance by the Forest Department to the inventory team that by the end of 2018 Cyprus will have a complete map of woody forest vegetation in state and private forests, with a minimum mapping unit of 0.3 ha. The project to provide this map is already in progress and will provide information for other types of land use as well (e.g. cropland areas) though not with the same level of detail. Forest vegetation types will be given in greater detail than what is presently available under CORINE (c) An explanation indicating that in order to get back to 1990 land cover and formulate land transition matrices, Cyprus will have to acquire satellite images for that year or, if images are not available, utilize any available satellite information that will give a better perspective on what the situation was in 1990 and at five-year intervals to 2015 in order to complete the land change matrices. The land categorization will be identical to the one used by the Department of Forests, but at 1 ha precision, which will provide the areas for AD for forest management and the geographical location (d) A recognition of the Party's need for capacity-building and a request for technical assistance in order to be able to provide estimates of non-CO_2 emissions from N fertilizer use, N mineralization, indirect N_2O from managed soils and biomass burning The ERT considers that Cyprus has delineated a workplan that is feasible and that, if fully implemented, will allow the Party to overcome most or all of the issues raised during the review week, in particular the need to develop a consistent land representation that is the basis for the assessment of changes in carbon stock The ERT recommends that Cyprus implement the workplan and report on progress in future annual submissions	
KL.2	General (KP-LULUCF)	The ERT noted that Cyprus did not provide in the NIR information regarding how the emissions associated with losses of carbon stock calculated using the IPCC default biomass gain–loss method are calculated. In particular, no information was provided to clarify whether the losses comprise wood harvest only or include fuelwood removals and disturbances. No EFs were provided in the NIR. The ERT included this issue in the list of potential problems and further questions raised by the ERT. In response to this list, Cyprus provided revised estimates and recalculated the losses using country-specific data provided by the Department of Forests, using roundwood harvest and taking into	Yes. Transparency*

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue[b] and/or a problem[c]? If yes, classify by type*
		consideration salvage logging after fires. The ERT considers that the revised estimates are in accordance with the 2006 IPCC Guidelines	
		The ERT also noted that there is no transparent information in the NIR on how the losses have been calculated and what types of losses have been considered. For instance, the NIR states (p.215) that thinning of trees is common, but it is not clear if the loss of carbon from this type of activity is considered in the estimation of losses. In addition, it is not clear what territorial area is covered in the estimated losses that have been calculated; the area reported in NIR table 4(A) appears to be the full forest area of the island. The forest area used to estimate the carbon losses has not been provided in the NIR	
		The ERT recommends that Cyprus clarify in the NIR how the losses have been calculated and what types of losses have been considered	
KL.3	Forest management – Activity data	The ERT noted that Cyprus has not identified the geographical location of the boundaries of the areas encompassing units of land subject to afforestation, reforestation, deforestation and forest management (see KL.1 above). The ERT considers that the lack of this information prevents Cyprus from calculating an accurate background level and a margin, and included this issue in the list of potential problems and further questions raised by the ERT. In response to this list, Cyprus informed the ERT that it will recalculate the estimate of the background level using the GHG emission estimates provided in CRF table 4(V). The Party also stated that the forest management area has already been recalculated (see L.17 above) and the forest fires data provided by the Department of Forests. In addition, afforestation/reforestation areas will be deduced by using the CORINE land-cover transition matrices of 2000–2006 and 2006–2012. This will give the final areas of forest management and areas affected by fires using the method suggested by the ERT. The corrected background level estimate and the complete methodology will be included with the 2017 submission. The ERT agreed with this information	Yes. Accuracy*
		The ERT recommends that Cyprus include estimates of the background level and margin in the 2017 submission	

Abbreviations: AD = activity data, BCEFI = biomass conversion and expansion factors , BOD = biochemical oxygen demand, COPERT = road transport model, CORINAIR = air pollutant emission inventory guidebook , CORINE = coordination of information on the environment , CRF = common reporting format, EF = emission factor, ERT = expert review team, EU ETS = European Union Emissions Trading System, F-gas = fluorinated gas, FOD = first order decay, GHG = greenhouse gas, IE = included elsewhere, IEF = implied emission factor, IPCC = Intergovernmental Panel on Climate Change, IPCC good practice guidance for LULUCF = *Good Practice Guidance for Land Use, Land-Use Change and Forestry* , IPPU = industrial processes and product use, KP-LULUCF = LULUCF emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, LULUCF = land use, land-use change and forestry, MADRE = Ministry of Agriculture, Rural Development and Environment, MCF = methane conversion factor, N = nitrogen, NA = not applicable, NE = not estimated, NIR = national inventory report, NMVOC = non-methane volatile organic compound , NO = not occurring, QA/QC = quality assurance/quality control, SEF = standard electronic format, SIAR = standard independent assessment report, 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", 2006 IPCC Guidelines = *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

[a] The review of the 2015 GHG annual submission is being held in conjunction with the review of the 2016 annual submission, in accordance with decision 10/CMP.11, paragraph 1. The ERT has reviewed both the 2015 and the 2016 inventory submission, and in accordance with the conclusions from the 13th meeting of greenhouse gas inventory lead reviewers (para. 9) has started with the review of the 2016 submission. This table includes all findings that are relevant for both the 2015 and the 2016 annual submission (i.e. this table excludes findings that, although they may have been relevant for the 2015 annual submission, had already been resolved in the 2016 annual submission).

[b] Recommendations are related to issues as defined in decision 13/CP.20, annex, paragraph 81, or problems as identified in decision 22/CMP.1, annex, paragraph 69, identified by the ERT during the review. Encouragements are made to the Party to address all findings not related to such issues.

[c] An asterisk is included next to each issue type that is also a problem, as defined in decision 22/CMP.1, annex, paragraphs 68 and 69, including those that lead to an adjustment or a question of implementation.

[d] Available at <http://www.mof.gov.cy/mof/cystat/statistics.nsf/industry_construction_61main_en/industry_construction_61main_en?OpenForm&sub=1&sel=4>.

[e] NMVOC emission estimates were provided by the Department of Labour Inspection, which is responsible for the preparation of the air pollutants inventory for EU directive 2001/81/EC.

[f] Tolunay. 2009. *Total carbon stocks and carbon accumulation in living tree biomass in forest ecosystems of Turkey*. Available at <http://dergipark.gov.tr/download/article-file/119597>.

VI. Application of adjustments

11. The ERT has not identified the need to apply any adjustments to the 2015 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 activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol are not applicable for the 2015 review.

VIII. Questions of implementation

13. No questions of implementation were identified by the ERT during the review.

Annex I

Overview of greenhouse gas emissions and removals for Cyprus for submission year 2015 and data and information on activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol

1. Tables 6–9 provide an overview of total greenhouse gas emissions and removals, as submitted by Cyprus.

Table 6
Total greenhouse gas emissions for Cyprus, base year[a]–2013[b]
(kt CO_2 eq)

	Total GHG emissions excluding indirect CO_2 emissions		*Total GHG emissions including indirect CO_2 emissions[c]*		*Land-use change (Article 3.7 bis as contained in the Doha Amendment)[d]*	*KP-LULUCF activities (Article 3.3 of the Kyoto Protocol)[e]*	*KP-LULUCF activities (Article 3.4 of the Kyoto Protocol)*	
	Total including LULUCF	*Total excluding LULUCF*	*Total including LULUCF*	*Total excluding LULUCF*			*CM, GM, RV, WDR*	*FM*
FMRL								–157.00
Base year	5 527.35	5 624.65	5 527.35	5 624.65	NA		NA	
1990	5 527.35	5 624.65	5 527.35	5 624.65				
1995	6 927.90	7 046.93	6 927.90	7 046.93				
2000	8 253.22	8 326.89	8 253.22	8 326.89				
2010	9 405.63	9 571.66	9 405.63	9 571.66				
2011	9 127.29	9 296.16	9 127.29	9 296.16				
2012	8 606.44	8 769.37	8 606.44	8 769.37				
2013	7 847.93	8 020.10	7 847.93	8 020.10		NE, NO	NA	NE, NO, IE

Abbreviations: CM = cropland management, FM = forest management, FMRL = forest management reference level, GHG = greenhouse gas, GM = grazing land management, IE = included elsewhere, KP-LULUCF = LULUCF emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, LULUCF = land use, land-use change and forestry, NA = not applicable, NE = not estimated, NO = not occurring, RV = revegetation, WDR = wetland drainage and rewetting.

[a] Base year refers to the base year under the Kyoto Protocol, which is 1990 for CO_2, CH_4 and N_2O, and 1995 for HFCs, PFCs, SF_6 and NF_3. For activities under Article 3, paragraph 3, of the Kyoto Protocol and forest management under Article 3, paragraph 4, only the inventory years of the commitment period must be reported.

[b] Emissions/removals reported in the sector other (sector 6) are not included in total GHG emissions.

[c] The Party has not reported indirect CO_2 emissions in common reporting format table 6.

[d] The value reported in this column refers to 1990.

[e] Activities under Article 3, paragraph 3, of the Kyoto Protocol, namely afforestation and reforestation, and deforestation.

Table 7
Greenhouse gas emissions by gas for Cyprus, excluding land use, land-use change and forestry, 1990–2013[a]
(kt CO_2 eq)

	CO_2[b]	*CH_4*	*N_2O*	*HFCs*	*PFCs*[c]	*Unspecified mix of HFCs and PFCs*[c]	*SF_6*	*NF_3*[c]
1990	4 621.01	693.57	309.90	0.15			0.03	
1995	5 848.04	797.53	398.60	2.70			0.06	
2000	7 095.96	847.45	363.02	20.38			0.08	
2010	8 004.91	943.42	376.83	246.34			0.15	
2011	7 696.67	962.21	362.43	274.70			0.15	
2012	7 160.97	937.20	355.29	315.74			0.16	
2013	6 449.61	918.04	327.60	324.70			0.15	
Per cent change 1990–2013	**39.6**	**32.4**	**5.7**	**222 889.5**			**483.1**	

[a] Emissions/removals reported in the sector other (sector 6) are not included in total greenhouse gas emissions.
[b] Cyprus did not report indirect CO_2 emissions in common reporting format table 6.
[c] Values reported as blank in the Party's submission.

Table 8
Greenhouse gas emissions by sector for Cyprus, 1990-2013[a, b]
(kt CO_2 eq)

	Energy	*IPPU*	*Agriculture*	*LULUCF*	*Waste*	*Other*[c]
1990	3 940.66	765.07	532.00	–97.30	386.92	
1995	5 093.38	856.70	667.61	–119.03	429.24	
2000	6 344.87	883.60	633.50	–73.66	464.91	
2010	7 494.87	907.75	638.76	–166.03	530.27	
2011	7 201.96	920.01	628.44	–168.87	545.75	
2012	6 706.09	916.24	595.18	–162.92	551.85	
2013	5 751.20	1 160.04	551.43	–172.17	557.43	
Per cent change 1990–2013	**45.9**	**51.6**	**3.7**	**77.0**	**44.1**	

Abbreviations: IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry.
[a] Emissions/removals reported in the sector other (sector 6) are not included in total greenhouse gas emissions.
[b] Cyprus did not report indirect CO_2 emissions in common reporting format table 6.
[c] Values reported as blank in the Party's submission.

Table 9
Greenhouse gas emissions/removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol by activity, base year[a, b]–2013, for Cyprus
(kt CO_2 eq)

	Article 3.7 bis as contained in the Doha Amendment[c]	*Article 3.3 of the Kyoto Protocol*		*Forest management and elected Article 3.4 activities of the Kyoto Protocol*				
	Land-use change	*Afforestation and reforestation*	*Deforestation*	*Forest management*	*Cropland management*	*Grazing land management*	*Revegetation*	*Wetland drainage and rewetting*
FMRL				–157.00				
Technical correction				NA				
Base year	NA				NA	NA	NA	NA
2013		NE, NO	NE, NO	NE, NO, IE	NA	NA	NA	NA
Per cent change 1990–2013					**NA**	**NA**	**NA**	**NA**

Abbreviations: FMRL = forest management reference level, IE = included elsewhere, NA = not applicable, NE = not estimated, NO = not occurring.

[a] Base year refers to the base year under the Kyoto Protocol, which is 1990 for CO_2, CH_4 and N_2O, and 1995 for HFCs, PFCs, SF_6 and NF_3. For activities under Article 3, paragraph 3, of the Kyoto Protocol, and forest management under Article 3, paragraph 4, only the inventory years of the commitment period must be reported.

[b] Values in this table include emissions on lands subject to natural disturbances, if applicable.

[c] The value reported in this column refers to 1990.

2. Table 10 provides an overview of relevant key data for Cyprus's reporting under Article 3, paragraphs 3 and 4, of the Kyoto Protocol.

Table 10
Key relevant data for Cyprus under Article 3, paragraphs 3 and 4, of the Kyoto Protocol

Key parameters	*Values*
Periodicity of accounting	(a) Afforestation/reforestation: commitment period accounting
	(b) Deforestation: commitment period accounting
	(c) Forest management: commitment period accounting
	(d) Cropland management: not elected
	(e) Grazing land management: not elected
	(f) Revegetation: not elected
	(g) Wetland drainage and rewetting: not elected
Election of activities under Article 3, paragraph 4	None
Election of application of provisions for natural disturbances	Yes, for forest management
3.5 % of total base-year GHG emissions, excluding LULUCF and including indirect CO_2 emissions	196.953 kt CO_2 eq (1 556.869 kt CO_2 eq for the duration of the commitment period)
Cancellation of AAUs, ERUs, CERs and/or issuance of RMUs in the national registry for:	
1. Afforestation and reforestation in 2013	NA
2. Deforestation in 2013	NA
3. Forest management in 2013	NA
4. Cropland management in 2013	NA
5. Grazing land management in 2013	NA
6. Revegetation in 2013	NA
7. Wetland drainage and rewetting in 2013	NA

Abbreviations: AAU = assigned amount unit, CER = certified emission reduction unit, ERU = emission reduction unit, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, NA = not applicable, RMU = removal unit.

Annex II

Information to be included in the compilation and accounting database

Table 11 includes 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), as well as the final data to be included in the compilation and accounting database.

Table 11
Information to be included in the compilation and accounting database for 2013, including the commitment period reserve, for Cyprus
(t CO_2 eq)

	Original submission	*Revised estimates*	*Adjustment*[a]	*Final*[b]
Commitment period reserve	42 705 115			42 705 115
Annex A emissions for 2013				
CO_2[c]	6 449 420	6 449 610		6 449 610
CH_4	860 404	918 036		918 036
N_2O	328 754	327 597		327 597
HFCs	323 979	324 704		324 704
PFCs[d]				
Unspecified mix of HFCs and PFCs[d]				
SF_6	150			150
NF_3[d]				
Total Annex A sources	**7 962 707**			**8 020 098**
Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2013				
3.3 Afforestation and reforestation	NE, NO			NE, NO
3.3 Deforestation	NE, NO			NE, NO
Forest management and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2013				
3.4 Forest management for 2013	NE, NO, IE			NE, NO, IE

Abbreviations: Annex A sources = sources included in Annex A to the Kyoto Protocol, IE = included elsewhere, NE = not estimated, NO = not occurring.

[a] "Adjustment" is relevant only for Parties for which the expert review team has calculated one or more adjustment(s).

[b] "Final" includes revised estimates, if any, and/or adjustments, if any.

[c] Cyprus has not reported indirect CO_2 emissions in common reporting format table 6.

[d] Values reported as blank in the Party's submission.

Annex III

Additional information to support findings in table 2

A. Missing categories that may affect completeness

1. The categories for which methods are included in the Intergovernmental Panel on Climate Change (IPCC) *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the 2006 IPCC Guidelines) that were reported as "NE" (not estimated) or for which the expert review team otherwise determined that there may be an issue with the completeness of reporting in the Party's inventory are the following:

(a) The quality assurance/quality control (QA/QC) plan was not included in the national inventory report (NIR);

(b) Carbon dioxide from glass production;

(c) Carbon dioxide and methane from carbide production (calcium carbide production);

(d) Hydrofluorocarbon emissions from refrigeration and air conditioning;

(e) Reporting the areas converted to a different land use under the relevant land-use conversion category for 20 consecutive years before reporting these areas under the corresponding land remaining category;

(f) The estimates of emissions from forest fires for land converted to forest land for 2011 were not provided;

(g) The reporting on four broad land-use categories (i.e. grassland, wetlands, settlements and other land) and corresponding carbon pools has not been provided.

B. Recommendation for an in-country review: list of issues

2. The ERT has recommended that the next review for Cyprus be conducted as an in-country review considering the questions and issues presented below. In accordance with decision 13/CP.20, annex, paragraph 64, the ERT has provided a list of questions and issues to be addressed during this in-country review, as set out below, that are in addition to the list of issues identified in tables 3 and 5 above:

(a) Functions of the single national entity established pursuant to Article 5 of the Kyoto Protocol;

(b) Performance of general and specific functions of the national system referred to in the annex to decision 19/CMP.1 and reaffirmed by decisions 3/CMP.11 and 4/CMP.11, such as institutional, legal and procedural arrangements for:

(i) Inventory planning, in particular, cooperation between government agencies and other entities and the allocation of their roles and responsibilities for inventory preparation in terms of choice of method, collection of activity data and parameters, and other arrangements for inventory development;

(ii) Inventory preparation, including the greenhouse gas (GHG) emission estimation, key category analysis and assessment of the inventory uncertainty;

(iii) Inventory management, in particular, the archiving of inventory information, documentation of external and internal reviews and other QA/QC procedures;

(c) Institutional arrangements established for the enhancement of the technical capacity and competence of the personnel involved in the inventory development;

(d) Performance of activity data collection, choice of methods and parameters and estimation of anthropogenic GHG emissions by sources and removals by sinks in

accordance with the 2006 IPCC Guidelines and *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol* (hereinafter referred to as the Kyoto Protocol Supplement) and the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* (hereinafter referred to as the Wetlands Supplement), as stipulated by the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories" (hereinafter referred to as the UNFCCC Annex I inventory reporting guidelines) and in line with decisions 24/CP.19 and 6/CMP.9;

(e) Enhance the estimation of GHG emissions and removals from those categories that are currently not estimated;

(f) Ensure continuous and sustainable reporting of supplementary information in accordance with Article 7, paragraphs 1 and 2, of the Kyoto Protocol, in particular with relation to the land use, land-use change and forestry sector, as required by decisions 15/CMP.1, 2/CMP.7 and annex II to decision 2/CMP.8;

(g) Enhance the QA/QC programme to avoid estimation and data transfer errors and inconsistencies in the NIR and between the NIR and the common reporting format tables. Use the information obtained from the implementation of the QA/QC programme to improve the quality of activity data, emission factors, methods and other relevant technical elements of the inventory;

(h) Identify key categories following the methods described in the 2006 IPCC Guidelines (volume 1, chapter 4.3), as required by revised UNFCCC Annex I inventory reporting guidelines as contained in annex I to decision 24/CP.19. Use higher tier methods and country-specific parameters for the estimation of GHG emissions from the emission and removal categories, identified as key;

(i) Undertake a quantitative estimate of inventory uncertainty for each category and for the entire inventory, following the 2006 IPCC Guidelines, the Kyoto Protocol Supplement and the Wetlands Supplement, as requested by decisions 6/CMP.9 and 24/CP.19;

(j) Annually archive inventory information including, inter alia, disaggregated emission factors, activity data and documentation on how these factors and data have been generated and aggregated for the preparation of the inventory. This information shall also include internal documentation on QA/QC procedures, external and internal reviews, annual key categories and key category identification, and planned inventory improvements.

Annex IV

Documents and information used during the review

A. Reference documents

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 <http://unfccc.int/resource/webdocs/agi/2015.pdf>.

Annual status report for Cyprus for 2015. Available at <http://unfccc.int/resource/docs/2015/asr/CYP.pdf>.

FCCC/ARR/2013/CYP. Report of the individual review of the inventory submission of Cyprus submitted in 2013. Available at <http://unfccc.int/resource/docs/2014/arr/cyp.pdf>.

"Guidelines for national systems for the estimation of anthropogenic greenhouse gas emissions by sources and removals by sinks under Article 5, paragraph 1, of the Kyoto Protocol". Decision 19/CMP.1. Available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=14>.

"Guidelines for review under Article 8 of the Kyoto Protocol". Decision 22/CMP.1. Available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=51>.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories". Annex to decision 24/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=4>.

"Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol". Decision 15/CMP.1. Available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf#page=54>.

"Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention". Annex to decision 13/CP.20. Available at <http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf#page=6>.

"Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol, including those relating to Articles 5, 7 and 8 of the Kyoto Protocol, Part I: implications related to accounting and reporting and other related issues". Decision 3/CMP.11. Available at <http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf#page=5>.

"Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol including those relating to Articles 5, 7 and 8 of the Kyoto Protocol, Part II: implications related to review and adjustments and other related issues". Decision 4/CMP.11. Available at <http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf#page=30>.

Intergovernmental Panel on Climate Change. 2000. *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*. Available at <http://www.ipcc-nggip.iges.or.jp/public/gp/english>.

Intergovernmental Panel on Climate Change. 2003. *Good Practice Guidance for Land Use, Land-Use Change and Forestry*. Available at <http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html>.

Intergovernmental Panel on Climate Change. 2006.*2006 IPCC Guidelines for National Greenhouse Gas Inventories*. Available at <http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html>.

Intergovernmental Panel on Climate Change. 2014. *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol*. Available at <http://www.ipcc-nggip.iges.or.jp/public/kpsg>.

Intergovernmental Panel on Climate Change. 2014. *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*. Available at <http://www.ipcc-nggip.iges.or.jp/public/wetlands/index.html>.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Nicoletta Kythreotou and Mr. Theodoulos Mesimeris, Department of Environment Ministry of Agriculture, Rural Development and Environment of Cyprus, including additional material on the methodology and assumptions used. The following documents[1] were also provided by Cyprus:

Cyprus' National Inventory Improvement Plan. Nicosia, 2015. Department of Environment, Ministry of Agriculture, Rural Development and Environment of Cyprus. 9 pp.

Cyprus' QA/QC and Verification System Manual. Nicosia, 2015. Department of Environment, Ministry of Agriculture, Rural Development and Environment of Cyprus. 26 pp.

[1] Reproduced as received from the Party.

Annex V

Acronyms and abbreviations

AD	activity data
AAU	assigned amount unit
AWMS	animal waste management system
C	carbon
CER	certified emission reduction unit
CH_4	methane
CM	cropland management
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
CORINAIR	air pollutant emission inventory guidebook
CORINE	coordination of information on the environment
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CPR	commitment period reserve
CRF	common reporting format
D	default emission factor
EF	emission factor
ERT	expert review team
ERU	emission reduction unit
EU ETS	European Union Emissions Trading System
F-gas	fluorinated gas
FM	forest management
FMRL	forest management reference level
FOD	first order decay
FracBURN	fraction of crop residue that is burned
GHG	greenhouse gas
GM	grazing land management
HFO	heavy fuel oil
IE	included elsewhere
IEF	implied emission factor
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
KP-LULUCF	LULUCF emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol
kt	kilotonne
LULUCF	land use, land-use change and forestry
MADRE	Ministry of Agriculture, Rural Development and Environment of Cyprus
MCF	methane conversion factor
N	nitrogen
NA	not applicable
NE	not estimated
NEU	non-energy use
Nex	nitrogen excretion
NIR	national inventory report
NMVOC	non-methane volatile organic compound
NO	not occurring
QA/QC	quality assurance/quality control
RMU	removal unit
RV	revegetation
SEF	standard electronic format
SIAR	standard independent assessment report
UNFCCC	United Nations Framework Convention on Climate Change
WDR	wetland drainage and rewetting