COMPLIANCE COMMITTEE **CC/ERT/ARR/2017/29**
1 June 2017

Report of the individual review of the annual submission of Austria submitted in 2015

Note by the secretariat

The report of the individual review of the annual submission of Austria submitted in 2015 was published on 31 May 2017. For purposes of rule 10, paragraph 2, of the rules of procedure of the Compliance Committee (annex to decision 4/CMP.2, as amended by decisions 4/CMP.4 and 8/CMP.9), the report is considered received by the secretariat on the same date. This report, FCCC/ARR/2015/AUT, contained in the annex to this note, is being forwarded to the Compliance Committee in accordance with section VI, paragraph 3, of the annex to decision 27/CMP.1.

United Nations FCCC/ARR/2015/AUT

Framework Convention on Climate Change

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Report on the individual review of the annual submission of Austria 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 Austria, 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 26 September to 1 October 2016 in Bonn, Germany.

* In the symbol for this document, 2016 refers to the year in which the inventory was submitted, not to the year of publication.

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I. Introduction[1]

1. This report covers the review of the 2015 annual submission of Austria 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 26 September to 1 October 2016 in Bonn, Germany, and was coordinated by Mr. Simon Wear and Mr. Vitor Gois Ferreira (UNFCCC secretariat). Table 1 provides information on the composition of the expert review team (ERT) that conducted the review of Austria.

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

Area of expertise	*Name*	*Party*
Generalist	Ms. Lea Kai Aboujaoude	Lebanon
	Mr. Lindsay Pratt	Canada
Energy	Mr. Sangay Dorji	Bhutan
	Ms. Inga Konstantinaviciute	Lithuania
	Ms. Laetitia Nicco	France
	Ms. Awassada Phongphiphat	Thailand
IPPU	Ms. Mausami Desai	United States of America
	Mr. David Kuntze	Germany
	Ms. Emilija Poposka	The former Yugoslav Republic of Macedonia
Agriculture	Ms. Agita Gancone	Latvia
	Ms. Sumaya Ahmed Zakieldeen	Sudan
LULUCF	Ms. María Fernanda Alcobé	Argentina
	Ms. Yasna Rojas Ponce	Chile
	Mr. Nijavalli Ravindranath	India
Waste	Ms. Kaat Jespers	Belgium
	Ms. Hlobsile P. Sikhosana-Shongwe	Swaziland

[1] At the time of publication of this report, Austria had not yet submitted its instrument of ratification of the Doha Amendment, and 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.

Area of expertise	*Name*	*Party*
Lead reviewers	Ms. Lea Kai Aboujaoude	
	Mr. David Kuntze	

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 encouragements to resolve them, are also included.

3. A draft version of this report was communicated to the Government of Austria, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

4. Annex I shows annual greenhouse gas emissions for Austria, including totals excluding and including the land use, land-use change and forestry sector, 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 under Article 3, paragraph 4, of the Kyoto Protocol, if elected, by gas, sector and activity for Austria.

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

6. The ERT notes that Austria'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 the 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.

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

Assessment		*Issue or problem ID #(s) in tables 3 and/or 5*[a]
Date of	Original submission: 15 June 2016 (NIR), 15 June 2016, v3	

[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.

Assessment				*Issue or problem ID #(s) in tables 3 and/or 5[a]*
submission	(CRF tables), 29 May 2015 (SEF-CP1)			
	The values from the latest submission are used in this report			
Review format	Centralized			
Application of the requirements of the UNFCCC Annex I inventory reporting guidelines and Wetlands Supplement (if applicable)	Have any issues been identified in the following areas:			
	1.	Identification of key categories	Yes	G.3
	2.	Selection and use of methodologies and assumptions	Yes	I.6
	3.	Development and selection of emission factors	Yes	E.9, I.7, A.5, W.1, W.2
	4.	Collection and selection of activity data	Yes	E.10, W.4
	5.	Reporting of recalculations	No	
	6.	Reporting of a consistent time series	No	
	7.	Reporting of uncertainties, including methodologies	Yes	L.1
	8.	QA/QC	QA/QC procedures were assessed in the context of the national system (see below)	
	9.	Missing categories/completeness[b]	Yes	L.2, L.3
	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?		The Party did not report "NE" for any insignificant categories	
Description of trends	Did the ERT conclude that the description in the NIR of the trends for the different gases and sectors is reasonable?		Yes	
Supplementary information under the Kyoto Protocol	Have any issues been identified 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	No	
		(b) Performance of the national system functions	No	
	2.	National registry:		
		(a) Overall functioning of the national registry	No	
		(b) Performance of the functions of the national registry and the technical standards for data exchange	No	

Assessment			*Issue or problem ID #(s) in tables 3 and/or 5[a]*
	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	No	
	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	No	
	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	No	
	(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	No	
	(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	Yes	
	(f) Country-specific information has been reported to support provisions for natural disturbances, in accordance with decision 2/CMP.7, annex, paragraphs 33 and 34	Yes	KL.1
	(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?	No	

Assessment			*Issue or problem ID #(s) in tables 3 and/or 5[a]*
Question of implementation	Did the ERT list question of implementation?	No	

Abbreviations: AAU = assigned amount unit, CER = certified emission reduction, CP1 = first commitment period of the Kyoto Protocol, CPR = commitment period reserve, CRF = common reporting format, ERT = expert review team, ERU = emission reduction unit, LULUCF = land use, land-use change and forestry, NE = not estimated, 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 2 but are included in table 3 and/or 5.

[b] Missing categories, for which methods are provided in the *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. 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 Austria

ID#	*Issue and/or problem classification[a, b]*	*Recommendation made in previous review report*	*ERT assessment and rationale*
General			
G.1	QA/QC and verification (13, 2014) Transparency*	The last row in table 10 of the NIR "Tier 1 uncertainty calculation and reporting according IPCC (2000) Table 6.1. – including LULUCF" indicates the sums to be for "excluding LULUCF", and that Austria corrects this to "including LULUCF"	Resolved
G.2	QA/QC and verification (14, 2014) Transparency*	The ERT recommends that Austria correct the column headings in NIR tables 9–11 as well as tables A155–A157 indicating that the detailed results are presented for the key categories only	Resolved
Energy			
E.1	1. General (energy sector) (24, 2014) Transparency*	Include in the NIR the information provided to the ERT during the review regarding the International Energy Agency's inclusion of military jet kerosene data in the jet kerosene consumption data for civil	Resolved The difference between the energy consumption reported in the 2016 submission for

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*	*ERT assessment and rationale*
		aviation	aviation gasoline was 99 TJ and 88 TJ (IEA) while for jet kerosene the 2016 submission had 582 TJ and 1,204 TJ (IEA); however, Austria explained that the IEA data contain AD from 1.A.5.b Military where AD of 667 TJ were reported
E.2	1. General (energy sector) (24, 2014) Accuracy*	Continue efforts to harmonize the fuel consumption data for domestic aviation and navigation between the CRF tables, for which a bottom-up approach is used, and the IEA reports, which rely on a top-down approach, and report the results in the NIR	Resolved In the NIR (page 121), Austria explained the arrangement for Statistik Austria to obtain inventory data for the split between national and international fuel consumption in civil aviation and navigation in the national statistics
E.3	International bunkers and multilateral operations – liquid fuels – CO_2, CH_4 and N_2O (25, 2014) Transparency*	Provide an explanation for the difference in trends and how they reflect the changes in fleet and fuel composition (decreasing trend in N_2O and an increasing trend in CO_2 and CH_4), and improve the QA/QC processes to improve the consistency of data between the CRF tables and NIR	Resolved A transcription error was made for CH_4 and N_2O in 2014
E.4	1.A.3.b Road transportation – liquid fuels – CH_4 and N_2O (29, 2014) Transparency*	Provide the IEFs for mopeds from 1999 to 2012 (NIR table 72)	Resolved Austria reported the IEFs for all years 1990 to 2014 (NIR table 73)
E.5	1.A.3.b Road transportation – biomass – CH_4 and N_2O (30, 2014) (34, 2013) Transparency*	Report N_2O and CH_4 emissions from biomass separately	Not resolved Austria has not reported emissions of CH_4 and N_2O separately from biofuels as it was of the view that these fuels were used in blended diesel and gasoline, and that separating N_2O and CH_4 from these fuels would be artificial. The 2006 IPCC Guidelines require that anthropogenic CH_4 and N_2O emissions be calculated and verified in emission estimates. It is difficult to determine the effect of blending biofuels on

ID#	*Issue and/or problem classification[a, b]*	*Recommendation made in previous review report*	*ERT assessment and rationale*
			the emission factors and subsequently the emissions of these two gases. An analysis of the IEF for CH_4 across Parties indicated that Austria had the one of the lowest IEFs for this subcategory. The IEF has decreased from 23.8 in the base year to 4.65 in 2014
E.6	1.A.3.d Domestic navigation – liquid fuels – CO_2, CH_4 and N_2O (31, 2014) Transparency*	Provide transparent information on how significant technology improvement in gasoline engines and fluctuations in the transport volumes dominate emissions from all other gases	Resolved Austria explained that the inconsistency in the trends of emissions and implied emission factors are due to improved technology and emission classes
E.7	1.A.2.a Iron and steel – solid fuels – CH_4 (27, 2014) (29, 2013) Transparency*	Transparently explain that CH_4 emissions from coke production in the iron and steel industry are reported under manufacturing and construction, and not under the category of solid fuels and other energy industries	Resolved The notation key “IE” was used for emissions from coke production
E.8	1.B.1.c Other (solid fuels) – CH_4 (33, 2014) Accuracy*	Investigate further the production of charcoal and improve the related estimates of CH_4 fugitive emissions for the years 1990–2004 in order to increase the accuracy of the reporting	Resolved Austria reported fugitive emissions (CH_4) from the production of charcoal by using assumed activity data of 1,000 t from the base year (1990) to 2004. Austria began to use activity data from the National Energy Balance between 2005 and 2012 in the 2014 submission. The resulting annual emissions ranged from 0.031 Mg to 0.043 Mg (NIR 2014, page 168, table 98). During the review, Austria explained to the ERT that the fugitive emissions are reported in manufacture of solid fuels and other energy industries (1.A.1.c) in line with the 2006 IPCC Guidelines without transparent information on the reallocation to 1.A.1.c and stated that it will provide the information in the next NIR

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*	*ERT assessment and rationale*
IPPU			
I.1	2.A.2 Lime production – CO_2 (36, 2014) (43, 2013) Transparency*	Include in the NIR a mass balance with data on the lime produced, the CO_2 produced by calcination, the coke consumed and the mass of $CaCO_3$ produced	Resolved Mass balance data were received from producers, the data were included in the NIR and based on these results a changed emission factor was implemented
I.2	2.A.2 Lime production – CO_2 (36, 2014) (43, 2013) Transparency*	Include a description of the use of the total amount of $CaCO_3$ obtained	Resolved The Party was asked for the usage of the $CaCO_3$ obtained from sugar production. See NIR 2016, page 192: "These limestone sediments and bounds the impurities in the raw sugar solution. The majority of CO_2 originating from lime is contained in the sediment. Known as 'Carbokalk', this is a solid by-product, which also contains organic substances and minerals (Wasner 2009), is used as a fertilizer"
I.3	2.F.1 Refrigeration and air conditioning – HFCs (37, 2014) Transparency*	Include a more detailed and transparent description as to where emissions of HFC-23 are included	Not resolved
I.4	2.F.1 Refrigeration and air conditioning – HFCs and PFCs (38, 2014) Transparency*	Correct the description of the data source used for domestic refrigeration in the NIR	Resolved The information was implemented in the NIR 2016. Table 130 on page 238 for "Data sources" was updated. Also the text on page 245 was updated. Now all collected years and interpolated years are in the table
Agriculture			
A.1	3.D.b.2 Nitrogen leaching and run-off – N_2O (51, 2014) Transparency*	Report on the results of specific research activities to establish a country-specific value for $Frac_{LEACH}$	Resolved Austria established a country-specific $Frac_{LEACH}$ which has been applied for the 2015 submission onwards. Information on the results of a

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*	*ERT assessment and rationale*
			peer-reviewed study (Eder et al., 2015) that developed the country-specific factor is available and included in the 2016 NIR, chapter 5.4.2.2, page 327. The study used 22 lysimeters, covering a wide range of soils, climatic conditions and management practices in Austria, to evaluate nitrogen losses through leaching and to calculate a country-specific value of $Frac_{LEACH}$
LULUCF			
L.1	4. General (LULUCF) (55, 2014) Accuracy*	Use the results of the uncertainty analysis to prioritize the aspects of the inventory that require refinement, in order to improve the accuracy and possibly to reduce the overall uncertainty of the LULUCF inventory	Not resolved The Party explained in the NIR that it is in the process of improving the accuracy of the inventory considering among other aspects the uncertainty analysis
L.2	4.A.1 Forest land remaining forest land – CO_2 (57, 2014) (60, 2013) (73, 2012) Completeness*	Provide estimates of the carbon stock changes for forests not in yield when the new NFI data becomes available and use the correct notation key	Addressing The Party explained in the 2016 NIR that estimates of the carbon stock changes for forests not in yield will be provided with the next NFI (at the end of CP2). During the review, the ERT requested information about the state of progress of the new NFI. Austria indicated that the new NFI started in 2016 and that it expects input data for these estimates by the end of CP2
L.3	4.A.1 Forest land remaining forest land – CO_2 (58, 2014) Completeness	Provide estimates of the carbon stock changes in mineral soils for forests not in yield using the best available data. Alternatively, the Party should use the appropriate notation key and provide information justifying its use in its annual submission	Addressing Austria explained in the 2016 NIR that estimates of the carbon stock changes in mineral soils for forests not in yield will be provided with the next NFI (at the end of CP2). During the review, the ERT requested information about the state of progress of

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*	*ERT assessment and rationale*
			the new NFI. Austria indicated that the new NFI started in 2016 and that it expects input data for these estimates by the end of CP2
L.4	4.A.1 Forest land remaining forest land – CO_2 (59, 2014) Transparency*	Enhance the description of the method used to report carbon stock changes in litter and dead wood separately in the dead organic matter and soil pools categories in the annual submission. For example, by including references in the documentation box in the CRF tables, in order to improve the transparency of the reporting	Not resolved The Party addressed this issue in the 2015 NIR, stating "A documentation box in the CRF will be included from the 2017 submission", (see page 472 of NIR 2015). However, the ERT noted that in the 2016 submission, the CRF table does not include references in the documentation box. During the review, the Party explained that it forgot to include this information in the CRF documentation box and that it will include the information in the CRF documentation box of its next submission
Waste			
		There were no recommendations related to the waste sector in the previous review report	
KP-LULUCF			
KL.1	Article 3, paragraph 3, activities – CO (71, 2014) (73, 2013) Transparency*	Explain the approach used and the time period threshold to show how harvesting or disturbances, and replanting or regrowth are distinguished from deforestation	Not resolved The NIR did not include information about the time period threshold to show how harvesting or disturbances, and replanting or regrowth are distinguished from deforestation

Abbreviations: AD = activity data, CP2 = second commitment period of the Kyoto Protocol, CRF = common reporting format, ERT = expert review team, IE = included elsewhere, IEA = International Energy Agency, IEF = implied emission factor, 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, NFI = national forest inventory, NIR = national inventory report, QA/QC = quality assurance/quality control, 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.

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

9. In accordance with paragraph 83 of the UNFCCC review guidelines, the ERT noted that the issues included in table 4 have been identified in three successive reviews, including the review of the 2015 annual submission of Austria, and have not been addressed by the Party.

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

ID#[a]	*Previous recommendation for the issue identified*	*Number of successive reviews issue not addressed*[b]
General		
	No such general issues were identified	
Energy		
E.5	Report N_2O and CH_4 emissions from biomass separately	3 (2013–2015)
IPPU		
	No such issues for the IPPU sector were identified	
Agriculture		
	No such issues for the agriculture sector were identified	
LULUCF		
L.2*	Provide estimates of the carbon stock changes for forests not in yield when the new NFI data becomes available and use the correct notation key	4 (2012–2015)
Waste		
	No such issues for the waste sector were identified	
KP-LULUCF		
KL.1	Explain the approach used and the time period threshold to show how harvesting or disturbances, and replanting or regrowth are distinguished from deforestation	3 (2013–2015)

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, NFI = national forest inventory.

[a] An asterisk is included after any issue ID# where the underlying issue is related to accuracy or completeness of a key category, a missing category or a potential key category, as indicated in decision 13/CP.20, annex, paragraph 83.

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 Austria that are additional to those identified in table 3.

Table 5
Additional findings made during the 2015 technical review of the annual submission of Austria[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.3	Key category analysis	The Party did not include a key category analysis excluding LULUCF in its NIR (page 42, table 8) The ERT recommends that the Party identify its key categories for the base year and the latest reported inventory year, using a tier 1 approach, level and trend assessment, including and excluding LULUCF	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
G.4	CRF	CRF table 9 (Completeness – Information on notation keys) currently provides explanations for the N_2O and CH_4 transportation emissions that are reported as "IE". The ERT notes that the notation key "IE" is used in other areas of the CRF tables (for example; fugitive emissions of N_2O from fuel, CO_2 emissions from petrochemical and carbon black production, CH_4 emissions from iron and steel production and N_2O emissions from industrial wastewater) Where the notation key "IE" is used in the inventory, the ERT recommend the Party to provide in the CRF completeness table in its next submission an indication of where in the inventory the emissions or removals for the displaced source/sink category have been included, and explain such a deviation from inclusion in the expected category, especially if it is due to confidentiality	Yes. Transparency*
G.5	CRF	CRF Summary3s1 and Summary3s2 tables for all years display the notation keys "NA" or "NO" for most cells within the table instead of the notation keys specific to the method applied or the emission factor used, as per instructions for this table The ERT recommends the Party to complete the CRF Summary3s1 and Summary3s2 tables in its next inventory submission using the indicated notation keys to specify the method applied and the emission factor used	Yes. Comparability*
G.6	QA/QC and verification	The ERT notes several inconsistencies found between the NIR and the CRF tables, and therefore recommends that the Party enhance its QC practices, or the application of its existing practices, in order to ensure consistency between the NIR and the CRF tables in the next submission Some examples include: (a) The key categories reported in CRF table 7 do not match with those from NIR	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*
		table 8 (b) NIR table 105 indicates 0 for 2.F for 1990 and 1991, whereas CRF table 10 indicates the notation key "NO" (c) On page 177 of the NIR, it is noted that "PFC emissions decreased remarkably during the period from 1990 to 1993 – from 1,183 kt CO_2 eq to approximately 53 kt CO_2 eq", but in CRF table 10.s.5 is reported 64 kt CO_2 eq for 1993 (d) On page 179 of the NIR it is explained that in 2014 emissions from 2.B Chemical industry were 57% below the level of 1990, but in CRF table 10.s.1 the figure is 48%	
G.7	Recalculations	The Party did submit its original 2015 NIR on 5 November 2015. On 15 June 2016, the Party resubmitted its 2016 submission indicating that its official inventory submission of 2016 constitutes a submission under the UNFCCC for the year 2016, a resubmission under the UNFCCC for the year 2015 and a submission under the Kyoto Protocol for the years 2015 and 2016. The ERT notes that the 2016 submission contains only information on recalculations between the original 2015 submission and the 2016 submission, and that information as to the full extent of the recalculations between the 2014 submission and the final 2015 submission are not included The ERT concludes that the reporting is not transparent but notes that this situation was related to the unique circumstances referred to in paragraph 6 above	Not an issue
Energy			
E.9	1.A.1.a Public electricity and heat production – CO_2	In the 2016 NIR, Austria estimated the emissions from incineration of MSW based on the waste fraction analysis by the local waste authority of Vienna in 1997/1998 and Öko-Institut in 2002 resulting in a 45% fossil share in the overall 261 kg C/t MSW wet matter and heating value from Statistik Austria, sourced from the plant operator The ERT recommends that Austria make efforts to update the waste composition fraction analysis of 1997/1998 and fossil carbon content results from references in 2002 and 2003, and take the resulting changes in the total fossil carbon fraction (currently 45%, according to the 2016 NIR, page 86) into account when calculating the CO_2 emission estimates for the most recent years. If Austria confirms the validity of the fraction analysis from MA 48 (1997/1998), then the ERT recommends that Austria provide this information in its NIR to verify the waste fractions, carbon content and heating value of	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*
		the waste for incineration to generate energy	
E.10	1.A.1.c Manufacture of solid fuels and other energy industries – CO_2, CH_4	The emission estimate for CH_4 and CO_2 is based on the default carbon content from the Revised 1996 IPCC Guidelines for peat, sewage sludge, black liquor, biogas, sewage sludge gas and landfill gas (non-fossil), as reported in the 2016 NIR (pages 86 and 87). During the review, Austria explained to the ERT that the 2006 IPCC Guidelines will be used from the 2017 submission onwards	Yes. Accuracy*
		The ERT recommends that Austria use the 2006 IPCC Guidelines default carbon content if country specific or plant/fuel level studies are not available and report the estimates	
E.11	1.A.2.a Iron and steel – CO_2	Austria explained in the NIR (page 76) that the emissions from residual fuel oil used in blast furnaces were included in the metal industry category (2.c). There was further information from Austria that 10.1 Mt CO_2 emissions were reported under iron and steel production (2.c.1) in the IPPU sector, while 1.4 Mt of CO_2 emissions were reported in the energy sector (1.A.2.a). During the review, Austria informed the ERT that the emissions allocated in iron and steel production were from fuels used as reductants in blast furnaces	Not an issue
		The ERT notes the justification of the emission allocation and encourages Austria to provide explanations	
E.12	1.A.2.c Chemicals – Industrial waste and other waste – CO_2	Austria used an IPCC 2006 tier 2 methodology to estimate emissions using emission factors from country studies by the Federal Ministry for Economic Affairs and Labour (1990, 1996) and the Austrian Environment Agency (2002). The CO_2 emission factor used for CO_2 emissions from industrial waste incineration was 104.17 t/TJ (1990–1999), 78.11 t/TJ (2014). The 2006 IPCC Guidelines default emission factor is 143.0 t/TJ with a 95% confidence interval from 110.0 t/TJ to 183.0 t/TJ. To estimate CO_2 emissions from other waste, an emission factor of 52.09 t/TJ was used. However, the default emission factor is 91.7 t/TJ with a range from 73.3 t/TJ to 121.0 t/TJ. During the review, the Party explained that it considered 90% carbon content and 10% biomass content as the reason for the lower emission factor	Yes. Transparency*
		The ERT notes the explanation provided by Austria and recommends that such explanatory notes be provided to improve transparency	
IPPU			
I.5	2.A.2 Lime	Austria reported in chapter 4.2.2.2 of the 2016 NIR (page 192), that the emissions from	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*
	production – CO_2	lime production in the process of calcium carbide production and in the process of glass production are reported in their CRF categories. Austria quoted the 2006 IPCC Guidelines, volume I, page 8.34, footnote 1: "Under the 2006 IPCC guidelines, emissions that occur from the use of carbonates should be reported in the subcategories (industries) where they occur. Therefore, the part of emissions that were reported in 2.A.3 or 2.A.4 under the Revised 1996 IPCC guidelines should be reported in various relevant subcategories (for example 2.C.1) under the 2006 IPCC guidelines. …" However, according to the 2006 IPCC Guidelines, volumes 2 and 3, these emissions should be allocated to the category lime production. In volume 2, chapter 2.3.1.1, page 20, it is noted that: "All lime production, whether produced as a marketed or a non-marketed product should be reported under 2006 IPCC guidelines subcategory 2.A.2 lime production". The exception is glass production, which should be reported as glass production Volume 2, section 2.3.1.3, page 23, notes that: "Some industries produce lime and consume it for their operations. This quantity of lime may never be introduced into the market. It is important when collecting activity data for lime production that both marketed and non-marketed lime production are included" Volume 3, chapter 3.41, box 3,5, notes that: "Allocation of emissions from CaO production CaO (lime) might be produced in-house or at a plant other than the carbide plant. In either case, the emissions from the CaO step should be reported as emissions from lime production (Section 2.3 of this volume) and only the emissions from reaction of CaO with petroleum coke and use of the product to produce acetylene for welding applications should be reported as emissions from calcium carbide" The ERT encourages that the Party allocate all emissions from lime production, except for glass and cement production, from calcium carbide production to the CRF category 2.A.2 Lime production	
I.6	2.A.3 Glass production – CO_2	The Party reported in its NIR (chapter 4.2.3.2, page 193) that it uses the default emission factors for soda ash, limestone and dolomite for the calculation of the emissions from 1990 to 2004. The emission factors were based on the 2006 IPCC Guidelines (table 2.1, page 2.7), and those used for the calculation and reported in the NIR are rounded compared with the default emission factors and did not agree with the exact values The ERT recommends that Austria use the exact default emission factors from the 2006	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*
		IPCC Guidelines to improve accuracy	
I.7	2.A.4 Other process uses of carbonates – CO_2	Austria reported magnesia sinter production in the wrong part of the CRF table (2.A.4.d). In response to a question by the ERT, Austria explained that the allocation was an error and should in fact be reported under 2.A.4.c The ERT recommends that Austria reallocate the emissions from magnesia sinter production to 2A.4.c	Yes. Comparability*
I.8	2.A.4 Other process uses of carbonates – CO_2	The Party reported other uses of soda ash. Austria explains that it uses the method from the 2006 IPCC Guidelines without providing information as to which tier is used (NIR, chapter 4.2.4.2, page 197). During the review, the Party informed the ERT that is uses the tier 2 methodology from the 2006 IPCC Guidelines The ERT recommends that for more transparency the Party provide the information in the NIR that it provided during the review and that a tier 2 methodology is used	Yes. Transparency*
I.9	2.A.4 Other process uses of carbonates – CO_2	The Party reported emissions from the production of bricks and tiles, but noted that there is no methodology for estimating emissions from brick production in the 2006 IPCC Guidelines. However, the 2006 IPCC Guidelines do provide a general method which can also be used for bricks (chapter 2.5, other process uses of carbonates). The Party informed the ERT during the review that from 2005 onwards, verified CO_2 emissions reported under the EU ETS were used and for 1998 to 2001 emissions were calculated based on carbon contents in raw material used in the various facilities. For the intermediate years, the same IEF was applied The ERT recommends that for more transparency Austria implement this information in its next NIR and explain and identify which method from the 2006 IPCC Guidelines was used to calculate these emissions	Yes. Transparency*
I.10	2.B.1 Ammonia production – CO_2	In Austria, ammonia is produced in the manufacture of the following products: nitric acid, urea, fertilizers and melamine. Austria also reported the CO_2 and CH_4 emissions from urea and fertilizer production in table CRF 2.B.10 (other) and reported CO_2 emissions from nitric acid production using the same value as the 2016 NIR (chapter 4.3.1.2, page 204). In the 2006 IPCC Guidelines, there is no method described to calculate these emissions. In general, countries do not report emissions by emission sources; however, Austria described in detail how these emissions occurred. For nitric acid production, in the 2016 NIR (chapter. 4.3.2.1, page 306) the Party described how: "By burning ammonia on an alloy catalyst – which is the basis of the nitric acid process	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*
		– a small amount of CO_2 is produced and leads to CO_2 emissions in the tail gas". For urea production in the 2016 NIR (chapter 4.3.6.2, page 206), Austria explained that:" The input gases for urea production are NH_3 and CO_2; the latter is a by-product of ammonia production. In urea production, CO_2 is emitted at start-ups of the process and emissions are calculated from the number and duration of start-ups. The ammonia stream entering the process contains a small amount of non-reacted CH_4 that is released when NH_3 reacts to urea". Furthermore, in figure 22 of the 2016 NIR (page 203), the different processes are documented in detail. However, there is no description of how the CO_2 emissions are emitted from fertilizer production and where these are reported The ERT recommends that Austria explain how the CO_2 emissions from fertilizer production are allocated. Furthermore, the ERT encourages the Party to include in the description of products contained in the chapter on ammonia production, links to the relevant chapters or to include an explanation of the emissions of CO_2 from urea, nitric acid and fertilizer production	
I.11	2.B.1 Ammonia production – recovered CO_2	The Party reported in 2016 NIR table 117 (page 206) CO_2 emissions subtracted. However, in CRF table 2(I).A-Hs1, Austria reported the notation key "NO" for the recovery of CO_2 from ammonia production. Austria explained to the ERT that the CO_2 subtracted is not recovered, as it is bound in solid matter, through the production of melamine (or emitted via downstream processes, and reported there). There is no CO_2 recovered as such, thus these emissions are reported as "NO". Austria explained further that the CO_2 is used for fertilizer and urea production; however, melamine, fertilizer and urea production are all processes where CO_2 is bound in the new product and that these are all recovery processes of CO_2 from ammonia production The ERT recommends that Austria change the notation key for the recovery of CO_2 from ammonia production from "NO" to the sum of CO_2 bound in these three products (melamine, fertilizer and urea)	Yes. Comparability*
I.12	2.B.8 Petrochemical and carbon black production – CO_2	Austria reported only ethylene production for petrochemical production under category 2.B.8. All other petrochemicals are reported as "NO". Austria explained in the 2016 NIR that: "all by-products are returned to the refinery. As the refinery and its related emissions are covered under sector 1, all CO_2 emissions related to by-products of ethylene production are reported in this sector" The ERT recommends that the Party contact the producer to confirm that only ethylene is produced or to use publicly available information. The ERT also recommends that	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*
		Austria implement a transparent explanation as to why only ethylene is produced in this refinery and no other products such as propylene, or that it provide estimates if new information is available	
I.13	2.C.3 Aluminium production – SF_6	The Party still reports in chapter 4.4.4 of the 2016 NIR (SF_6 used in aluminium and magnesium foundries (2.C.4)) SF_6 emissions from secondary aluminium production and magnesium production, in accordance with the Revised 1996 IPCC Guidelines; however, according to the 2006 IPCC Guidelines and the 2006 IPCC Guidelines secondary aluminium production must be reported under CRF category 2.C.3, production of aluminium. The Party further reported the SF_6 emissions from secondary aluminium production under CRF category 2.C.7 (as aluminium casting). The ERT notes that in CRF table 2(II).B under source category 2.C.3 there is a subcategory "F-gases used in foundries" with a footnote indicating that according to the 2006 IPCC Guidelines, possible SF_6 emissions from casting are to be included under magnesium production The ERT recommends that Austria reallocate the SF_6 emissions from CRF category 2.C.7 to CRF category 2.C 3, production of aluminium/F-gases used in foundries, for more transparency and comparability. The ERT also recommends that Austria amend its reporting in chapter 4.4.4 as it still includes the old nomenclature and improve chapter 2.C.3	Yes. Comparability*
I.14	2.C.4 Magnesium production – SF_6	The Party reported on magnesium production on page 220 of the 2016 NIR that "Industry introduced alternative cover gases in the last years" but reported only SF_6 emissions. During the review, Austria explained to the ERT that this information is misleading. The company producing magnesium is now producing less than before and has optimized its furnace. Therefore less or no SF_6 is needed, as fewer fires break out The ERT recommends that Austria obtain confirmation from the company producing magnesium that no other gases are used, and include this information in the NIR for more transparency. Furthermore, the ERT recommends that Austria explain in its next NIR why for some years the company had reported no consumption of SF_6	Yes. Transparency*
Agriculture			
A.2	3.A.1 Cattle – CH_4	Austria developed a very good enhanced characterization for cattle which was also well described in the NIR; however, in the CRF tables only option A was used (dairy and non-dairy cattle) for both enteric fermentation (3.A) and manure management (3.B); option B, which accounts for a more detailed characterization, was not used. In response to a question about this choice, Austria indicated that option A was considered more	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*
		convenient because the default grouping of animals in option B (mature dairy/mature other/growing cattle) does not reflect the detailed animal categories used in their calculations. In addition, Austria indicated that option A is also helpful for the comparability of IEFs with other European Union countries as such comparator countries use option A; the ERT found this justification to be acceptable	
A.3	3.B Manure management – CH_4 and N_2O	Austria has presented the distribution of livestock manure per animal subcategory in different animal waste management systems using the results of a study, expert judgment and linear extrapolation in the period 2005–2008. The distribution has held constant since 2008. In the current submission, Austria indicated that the assumptions based on the current distribution of housing and manure management systems were compared with data from the Farm Structure Survey 2010. During the review, Austria referred to its statement from the previous review (2014) that new research would be considered. Austria explained to the ERT that a project which was a follow up to the one it has previously used was in the process of obtaining new representative updated data on agricultural practices (animal husbandry, manure management and manure application), noting that the implementation of the new study results is planned for the submission of 2018	Not an issue
		The ERT considers the animal waste management systems distribution to be acceptable and encourages Austria to use the new research findings when available	
A.4	3.B.5 Indirect N_2O emissions – N_2O	Indirect N_2O emissions from manure management have been identified as a key category. Austria uses an IPCC tier 2 methodology to estimate indirect N_2O emissions through the volatilization of nitrogen from manure management. In response to a question raised by the ERT, the Party stated that there is currently no country-specific emission factor for indirect N_2O emissions through the volatilization of nitrogen from manure management available in Austria	Not an issue
		The ERT encourages Austria to develop a country-specific emission factor for indirect N_2O emissions through the volatilization of nitrogen from manure management	
A.5	3.D Direct and indirect N_2O emissions from agricultural soils – N_2O	Austria uses an IPCC tier 1 methodology for the calculation of N_2O emissions from agricultural soils, which is a key category. In response to a question from the ERT, Austria explained that it does not have a rigorously documented country-specific emission factor, which is needed to support the use of a tier 2 methodology. Accordingly, a tier 1 methodology with country-specific activity data (based on the nitrogen-flow concept) and 2006 IPCC Guidelines default emission factors have been used	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*
		The ERT encourages Austria to develop a rigorously documented country-specific emission factor that would enable the country to use the IPCC tier 2 methodology	
A.6	3.D Direct and indirect N_2O emissions from agricultural soils – N_2O	Austria used weighted annual nitrogen sales data for each of the years 1989 and 1990 as the basis for calculating the weighted values of 1990. During the review, questions were raised about this and about the use of fertilizer sale prices. Austria explained that it had previously used statistics on fertilizer use without employing a smoothing algorithm, resulting in high inter-annual variations in N_2O emissions. In response to the questions raised during the review, Austria stated that the weighted nutrient consumption (t N/year) and the weighted urea consumption (t N/year) figures were developed by calculating the simple average of the two years. The sales figures for 1989 and 1990 were used as the basis for calculating the weighted values for 1990. Austria explained that the method was chosen in order to reduce the effects of storage due to the high elasticity of annual sales figures to marked prices	Yes. Transparency*
		In the 2012 recommendation, Austria indicated that the use of fertilizer sales is fully in line with the 2006 IPCC Guidelines (11.2.1.3) and stated that weighting nutrient consumption data based on official statistics is a reasonable approach	
		The ERT found the explanation provided by Austria to be acceptable; however, it underlined the need for enhancing the transparency of the methodologies used. The ERT recommends that Austria provide an explanation (including information provided during the review) of the methodology in the NIR	
LULUCF			
L.5	4.B.1 Cropland remaining cropland – CO_2	Austria has refined the methodology for the calculation of soil carbon stock change in annual cropland remaining annual cropland and perennial cropland remaining perennial cropland. The new approach calculates the soil carbon stock change for five different cropland management types with impact on the removals in some years of the temporal series. The Party has included detailed information on the emission factor for different cropland management; however, for transparency, the ERT considers it necessary to include information on activity data of different cropland management types	Yes. Transparency*
		The ERT recommends that Austria include information on the activity data of the different cropland management types	
L.6	4.D.1 Wetlands remaining wetlands	The ERT noted a brief description of the subcategory other wetland remaining other wetland, and this subcategory contains the information on flooded land remaining	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*
	– Gen	flooded land, bogs, and rivers and lakes. However, the ERT observed a lack of consistency in the information on notation keys in flooded land remaining flooded land. The Party indicated in its NIR the use of the notation key "IE" of flooded land remaining flooded land, because activity data are contained in the subcategory other wetland remaining other wetland and CRF tables contain the notation key "NE". The Party has information only on activity data and the 2006 IPCC Guidelines indicate that the notation key "IE" is used for emissions by sources and removals by sinks of GHGs estimated but included elsewhere in the inventory instead of under the expected source/sink category The ERT recommends that Austria improve the description of the category wetlands remaining wetlands, obtain the activity data for flooded land remaining flooded land and use the correct notation in its next NIR and the CRF tables	
Waste			
W.1	5.A.1 Managed waste disposal sites – CH_4	Austria uses a value of 0.55 for the fraction of CH_4 in generated landfill gas (fluorine), according to table 268 in the 2016 NIR (page 441). As a reference for this value, Austria refers to "mean value cited in literature, also within the IPCC range". There is no range included in the 2006 IPCC Guidelines, only a default value of 0.50. In response to a question from the ERT, Austria confirmed that the sentence in the NIR was referring to the range of the default value in the Revised 1996 IPCC Guidelines The ERT recommends that Austria include the references from which the country-specific value was derived in the description in the NIR (references were provided during the review). The ERT also recommends that Austria include a justification of the deviation from the 2006 IPCC Guidelines default percentage and recommends that it provide a source for the figure of 0.55 cited or provide revised estimates using the IPCC defaults	Yes. Accuracy*
W.2	5.A.1 Managed waste disposal sites – CH_4	Austria uses different values per waste category for the fraction of degradable organic carbon which decomposes (DOC_f), varying from 0.50 to 0.77 (according to NIR, page 441, table 268). Austria uses the IPCC default value (0.5), taking into account national waste expertise (Umweltbundesamt 2005) to differentiate from the default value depending on the waste category. The 2006 IPCC Guidelines recommend a DOC_f of 0.5 for the bulk of waste. National values can be used, but should be well documented. In response to a question raised during the review, Austria explained to the ERT that the composition of landfilled waste fractions is available (as is that on the included lignin) and that the default DOC_f value is adjusted accordingly. Higher DOC_f values than the	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
		2006 IPCC Guidelines default value (0.5) are applied for most of the waste types (except wood) as the composition data shows a low proportion of lignin. The DOC_f for fats is set to 0.77 as lignin carbon is excluded here. The lower share of lignin carbon in the disposed waste in Austria can be justified by the fact that in Austria a high share of for example garden/park waste is treated biologically (considered under 5.B.1 composting). Austria confirmed that the Umweltbundesamt study (2005) takes into account the different waste types with separate DOC_f values	
		The ERT recommends that, to improve the accuracy of the country-specific DOC_f values used, Austria include in its next NIR this information on the reasoning for its choices	
W.3	5.C.1 Waste incineration – CO_2	In response to a question on the high inter-annual change of the implied CO_2 emission factor for the incineration of non-biogenic MSW (5.C.1.B) between 1990 (162.4 kg/t waste), 1991 (143.2 kg/t waste) and 1992 (1,383.6 kg/t waste), Austria explained that the activity data for 1990 and 1991 in the CRF tables were erroneous and stated that it would correct this in its next submission. The activity data should be 31 kt for 1991, resulting in an IEF of 754 kg CO_2/t waste. Austria explained that the increase in the IEF between 1992 and 1993 was caused by the change in the composition waste streams that were incinerated between 1991 (including MSW, clinical waste and waste oil) and 1992 (including clinical waste and waste oil but excluding MSW)	Yes. Transparency*
		The ERT recommends that Austria correct the AD for 1990 and 1991	
W.4	5.C.1 Waste incineration – CO_2	Austria does not use the default oxidation factor of 100% for MSW (in 1990 and 1991) and clinical waste (1990–2009) incineration for estimating CO_2 emissions, as recommended by the 2006 IPCC Guidelines. Instead, it uses the default oxidation factor of 95%, proposed as default by the Revised 1996 IPCC Guidelines. In response to a question raised by the ERT, Austria explained that changing the combustion rate to 100% would not increase the accuracy of the estimates	Yes. Accuracy*
		The ERT recommends that Austria provide proper justification and documentation for the use of an oxidation factor that is lower than that recommended by the 2006 IPCC Guidelines, or provide revised estimates in accordance with the 2006 IPCC Guidelines	
W.5	5.C.2 Open burning of waste – CO_2, CH_4 and N_2O	Austria did not provide information on the use of the notation key "NO" for emissions of open burning of waste in the NIR. In response to a question raised during the review, Austria explained that national legislation includes the prohibition of burning outside stationary combustion facilities	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*
		The ERT recommends that the Party include a paragraph in the NIR with information on the national prohibition of open burning with references to the national legislation	
W.6	5.D Wastewater treatment and discharge – N_2O	In the 2015/2016 submission Austria applied a new country-specific methodology for estimating N_2O emissions from wastewater treatment and wastewater effluent from industrial and domestic origins. Therefore the nitrogen flows from plants and effluent in Austria were mapped and the methodology in the 2006 IPCC Guidelines was adapted to this mapping. Furthermore, country-specific measurements of nitrogen content in wastewater and effluent were used instead of protein consumption (used in 2006 IPCC Guidelines methodologies). This resulted in lower emission estimates for base year 1990 (–9%) and lower emission estimates for the year 2012 (–38%) compared with the 2014 submission. Austria included the methodology, the activity data and parameters used to derive the emission factors in the NIR in a very transparent way, with references and justification for its choices	Not an issue
		Since the default N_2O emission factor for plants, proposed by the 2006 IPCC Guidelines is very uncertain (based on one field test), the ERT commends Austria for its efforts in trying to make the emission estimates more accurate, taking into account the actual nitrogen flows and up-to-date operating conditions, reflected in the country-specific emission factor for wastewater treatment plants	
KP-LULUCF			
KL.2	Forest management – CO_2	Austria intends to apply the provisions to exclude emissions from natural disturbances for the accounting on forest management under Article 3, paragraph 4, of the Kyoto Protocol. The Party calculated the background level and the margin considering all natural disturbances, without details of different types of natural disturbances. For transparency, the ERT considers it important to provide information on the types of natural disturbance. During the review, the Party provided the information on natural disturbances (wildfires, insects, and snow and storms) and noted this will be included in the next submission	Yes. Transparency*
		The ERT recommends that Austria provide information on natural disturbance types whose emissions the Party wishes to exclude from accounting during the commitment period	
KL.3	Forest management – CO_2	The description of the technical correction of "updated expansion ratios" is not clear. During the review, the Party provided a detailed explanation and noted that this description will be included in its next 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
		The ERT recommends that Austria enhance the description of the technical correction of "updated expansion ratios"	

Abbreviations: AD = activity data, CRF = common reporting format, ERT = expert review team, EU ETS = European Union Emissions Trading System, F-gases = fluorinated gases, GHG = greenhouse gas, 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, LULUCF = land use, land-use change and forestry, MSW = municipal solid waste, NA = not applicable, NE = not estimated, NIR = national inventory report, NO = not occurring, QA/QA = quality assurance/quality control, Revised 1996 IPCC Guidelines = *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*, 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.

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VI. Application of adjustments

11. The ERT has not identified the need to apply any adjustments to the 2015 annual submission of Austria.

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

12. Austria 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. Question 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 Austria 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 Austria.

Table 6
Total greenhouse gas emissions for Austria, 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 3.7bis 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								–6 516.00
Base year	66 002.37	78 855.14	66 002.37	78 855.14	NA		NA	
1990	65 991.86	78 844.63	65 991.86	78 844.63				
1995	65 702.62	79 813.03	65 702.62	79 813.03				
2000	63 511.66	80 429.34	63 511.66	80 429.34				
2010	78 421.03	84 946.02	78 421.03	84 946.02				
2011	75 693.07	82 626.64	75 693.07	82 626.64				
2012	73 545.79	79 897.12	73 545.79	79 897.12				
2013	74 841.10	80 042.54	74 841.10	80 042.54		–1 543.48	NA	–3 397.55

Abbreviations: CM = cropland management, FM = forest management, FMRL = forest management reference level, GHG = greenhouse gas, GM = grazing land management, 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, RV = revegetation, WDR = wetland drainage and rewetting.

[a] Base year refers to the base year under the Kyoto Protocol, which is 1990 for all gases except NF_3, for which the base year is 2000. 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 Austria, excluding land use, land-use change and forestry, 1990–2013[a]
(kt CO_2 eq)

	CO_2[b]	*CH_4*	*N_2O*	*HFCs*	*PFCs*	*Unspecified mix of HFCs and PFCs*	*SF_6*	*NF_3*
1990	62 297.17	10 598.57	4 293.06	2.44	1 182.79	NA, NO	470.61	NO, NA
1995	64 202.16	9 674.05	4 389.00	357.93	83.35	NA, NO	1 100.11	6.44
2000	66 274.74	8 466.37	4 301.70	713.63	87.87	NA, NO	574.53	10.51
2010	72 531.83	7 182.82	3 330.15	1 483.19	78.05	NA, NO	335.87	4.12
2011	70 327.17	6 976.42	3 402.29	1 535.80	73.51	NA, NO	307.35	4.10
2012	67 698.66	6 855.14	3 359.69	1 612.47	50.72	NA, NO	311.88	8.56
2013	67 957.12	6 757.49	3 361.48	1 602.60	49.23	NA, NO	304.87	9.75
Per cent change 1990–2013	**9.1**	**–36.2**	**–21.5**	**65 645.9**	**–95.8**	**NA**	**–35.2**	**NA**

Abbreviations: NA = not applicable, NO = not occurring.
[a] Emissions/removals reported in the sector other (sector 6) are not included in total greenhouse gas emissions.
[b] Austria did not report indirect CO_2 emissions in common reporting format table 6.

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

	Energy	*IPPU*	*Agriculture*	*LULUCF*	*Waste*	*Other*
1990	52 917.25	13 663.05	8 104.08	–12 852.77	4 160.25	NO
1995	54 447.39	13 610.27	7 960.32	–14 110.42	3 795.06	NO
2000	55 312.55	14 642.16	7 423.69	–16 917.68	3 050.93	NO
2010	59 833.19	15 925.85	6 996.11	–6 524.99	2 190.87	NO
2011	57 433.59	16 084.24	7 036.34	–6 933.57	2 072.47	NO
2012	55 265.61	15 696.93	6 965.23	–6 351.33	1 969.35	NO
2013	55 248.16	15 980.83	6 958.64	–5 201.45	1 854.91	NO
Per cent change 1990–2013	**4.4**	**17.0**	**–14.1**	**–59.5**	**–55.4**	**NA**

Abbreviations: IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry, NA = not applicable, NO = not occurring.

[a] Emissions/removals reported in the sector other (sector 6) are not included total greenhouse gas emissions.

[b] Austria did not report indirect CO_2 emissions in common reporting format table 6.

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 Austria

(kt CO_2 eq)

	Article 3.7bis 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				–6 516.00				
Technical correction				5 823.00				
Base year	NA				NA	NA	NA	NA
2013		–2 067.71	524.23	–3 397.55	NA	NA	NA	NA
Per cent change Base year–2013					**NA**	**NA**	**NA**	**NA**

Abbreviations: FMRL = forest management reference level, NA = not applicable.

[a] Base year refers to the base year under the Kyoto Protocol, which is 1990 for all gases except NF_3, for which the base year is 2000. The base year for cropland management and grazing land management under Article 3, paragraph 4, of the Kyoto Protocol is 1990 for Austria. 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 Austria's reporting under Article 3, paragraphs 3 and 4, of the Kyoto Protocol.

Table 10
Key relevant data for Austria 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	NA
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	2 759.930 kt CO_2 eq (22 079.438 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, 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 Austria. 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 Austria
(t CO_2 eq)

	Original submission	*Revised estimates*	*Adjustment*[a]	*Final*[b]
Commitment period reserve	365 141 085			365 141 085
Annex A emissions for 2013				
CO_2[c]	67 957 121			67 957 121
CH_4	6 757 490			6 757 490
N_2O	3 361 483			3 361 483
HFCs	1 602 596			1 602 596
PFCs	49 229			49 229
Unspecified mix of HFCs and PFCs	NA, NO			NA, NO
SF_6	304 869			304 869
NF3	9 752			9 752
Total Annex A sources	**80 042 540**			**80 042 540**
Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2013				
3.3 Afforestation and reforestation	–2 067 711			–2 067 711
3.3 Deforestation	524 231			524 231
Forest management and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2013				
3.4 Forest management for 2013	–3 397 551			–3 397 551

Abbreviation: Annex A sources = sources included in Annex A to the Kyoto Protocol, NA = not applicable, 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.

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Annex III

Additional information to support findings in table 2

Missing categories that may affect completeness

The categories for which methods are included in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* 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) 4.A.1 Forest land remaining forest land CO_2 (see table 3, L.2);

(b) 4.A.1 Forest land remaining forest land CO_2 (see table 3, L.3).

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 Austria for 2016. Available at <http://unfccc.int/resource/docs/2016/asr/aut.pdf>.

FCCC/ARR/2013/AUT. Report of the individual review of the annual submission of Austria submitted in 2013. Available at <http://unfccc.int/resource/docs/2014/arr/aut.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. 1997. *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*. Available at <http://www.ipcc-nggip.iges.or.jp/public/gl/invs1.htm>.

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>.

Standard independent assessment report, part 1, for Austria for 2015. Available at <http://unfccc.int/files/kyoto_protocol/registry_systems/independent_assessment_reports/application/pdf/siar_2015_aut_1_2.pdf>.

Standard independent assessment report, part 2, for Austria for 2015. Available at <http://unfccc.int/files/kyoto_protocol/registry_systems/independent_assessment_reports/application/pdf/siar_2015_aut_2_2.pdf>.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Pazdernik (Environment Agency Austria), including additional material on the methodology and assumptions used. The following documents[1] were also provided by Austria:

EDER, A., FEICHTINGER, F., STRAUSS, P. & BLÖSCHL G. (2013): *Calculation of nitrogen leaching values for the annual greenhouse gas inventory of Austria – Evaluation of long term lysimeter time series. Federal Agency for Water Management*, Institute for Land and Water Management Research, Petzenkirchen, and Institute of Hydraulic Engineering and Water Resources Management, Vienna University of Technology, Austria.

Österreichische Wasser- und Abfallwirtschaftsverband (ÖWAV). 2003. *Arbeitsbehelf zum Abschätzung von Emissionen in Luft und Wasser Reststoff- und Massenabfalldeponie gem. EPER-V (BGBl. 300/2002).* [Wien].

Rettenberger G. et al. 1992. *Der Deponiegashaushalt in Altablagerungen - Leitfaden Deponiegas* - [Karlsruhe, Landesanstalt für Umweltschutz Baden-Württemberg, 1 Auflage].

Floegl Werner. 2002. Klimarelevanz der Deponien in Oberösterreich. [Linz,Amt der OÖ. Landesregierung].

Schachermayer Elisabeth, Lampert Christoph. 2008. *Deponiegaserfassung auf österreichischen Deponien.*

UMWELTBUNDESAMT (2005): Schachermayer, E.: *Vergleich und Evaluierung verschiedener Modelle zur Berechnung der Methanemissionen aus Deponien*. Umweltbundesamt, Wien. Study has not been published, but can be made available upon request.

Zeitreihe 2002 bis 2007 - ERFASSTE DEPONIEGASMENGEN AUF ÖSTERREICHISCHEN DEPONIEN – ZEITREIHE FÜR DIE JAHRE 2002 BIS 2007. [Wien. Umweltbundesamt GmbH, ISBN 3-85457-898-9].

[1] Reproduced as received from the Party.

Annex IV

Acronyms and abbreviations

AD	activity data
Annex A sources	sources included in Annex A to the Kyoto Protocol
AAU	assigned amount unit
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CER	certified emission reduction
CM	cropland management
CP1	first commitment period of the Kyoto Protocol
CP2	second commitment period of the Kyoto Protocol
CPR	commitment period reserve
CRF	common reporting format
ERT	expert review team
ERU	emission reduction unit
EU ETS	European Union Emissions Trading System
F-gases	fluorinated gases
FM	forest management
FMRL	forest management reference level
GHG	greenhouse gas
GM	grazing land management
IE	included elsewhere
IEA	International Energy Agency
IEF	implied emission factor
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
KP-LULUCF	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
MSW	municipal solid waste
NA	not applicable
NE	not estimated
NFI	national forest inventory
NIR	national inventory report
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