COMPLIANCE COMMITTEE **CC/ERT/ARR/2019/1**
1 February 2019

Report of the individual review of the annual submission of Austria submitted in 2018

Note by the secretariat

The report of the individual review of the annual submission of Austria submitted in 2018 was published on 16 January 2019. 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/2018/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/2018/AUT

Framework Convention on Climate Change

Distr.: General
16 January 2019

English only

Report on the individual review of the annual submission of Austria submitted in 2018*

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 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 2018 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 10 to 15 September 2018.

* In the symbol for this document, 2018 refers to the year in which the inventory was submitted, not to the year of publication.

GE.19-00615(E)

1900615

Contents

Abbreviations and acronyms

2006 IPCC Guidelines	*2006 IPCC Guidelines for National Greenhouse Gas Inventories*
AAU	assigned amount unit
AD	activity data
Annex A sources	source categories included in Annex A to the Kyoto Protocol
AR	afforestation and reforestation
Article 8 review guidelines	"Guidelines for review under Article 8 of the Kyoto Protocol"
B_o	maximum methane-producing capacity of manure
CER	certified emission reduction
CH_4	methane
CM	cropland management
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CPR	commitment period reserve
CRF	common reporting format
DOC_f	fraction of degradable organic carbon that can decompose
EF	emission factor
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
HFC	hydrofluorocarbon
IE	included elsewhere
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
ISO	International Organization for Standardization
KP-LULUCF activities	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
NCV	net calorific value
NE	not estimated
NFI	national forest inventory
NF_3	nitrogen trifluoride
NIR	national inventory report
NO	not occurring
N_2O	nitrous oxide
PFC	perfluorocarbon
QA/QC	quality assurance/quality control
RMU	removal unit
RV	revegetation
SEF	standard electronic format

SF_6	sulfur hexafluoride
SIAR	standard independent assessment report
UNFCCC	United Nations Framework Convention on Climate Change
UNFCCC Annex I inventory reporting guidelines	"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories"
UNFCCC review guidelines	"Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention"
WDR	wetland drainage and rewetting
Wetlands Supplement	*2013 Supplement to the 2006 Intergovernmental Panel on Climate Change Guidelines for National Greenhouse Gas Inventories: Wetlands*

I. Introduction[1]

1. This report covers the review of the 2018 annual submission of Austria organized by the secretariat, in accordance with the Article 8 review guidelines (adopted by decision 22/CMP.1, and revised by decision 4/CMP.11). In accordance with the Article 8 review guidelines, this review process also encompasses the review under the Convention as described in the UNFCCC review guidelines, particularly in part III thereof, namely the "UNFCCC guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention" (decision 13/CP.20). The review took place from 10 to 15 September 2018 and was coordinated by Ms. Suvi Monni (secretariat). Table 1 provides information on the composition of the 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	Mr. Domenico Gaudioso	Italy
	Ms. Olia Glade	New Zealand
	Mr. Justin Goodwin	United Kingdom of Great Britain and Northern Ireland
Energy	Mr. Dario Gomez	Argentina
	Mr. Yves Marenne	Belgium
	Ms. Duduzile Nhlengethwa-Masina	Eswatini
IPPU	Mr. Kent Buchanan	South Africa
	Ms. Eva Krtkova	Czechia
Agriculture	Ms. Marci Baranski	United States of America
	Ms. Olga Gavrilova	Estonia
LULUCF	Ms. Diana Marcela Vargas	Colombia
	Ms. Marina Vitullo	Italy
Waste	Mr. Richard Claxton	United Kingdom
	Mr. Ole-Kenneth Nielsen	Denmark
Lead reviewers	Mr. Goodwin	
	Ms. Nhlengethwa-Masina	

2. The basis of the findings in this report is the assessment by the ERT of the Party's 2018 annual submission, in accordance with the Article 8 review guidelines. The ERT notes that the individual inventory review of Austria's 2017 annual submission did not take place during 2017 owing to insufficient funding for the review process.

[1] At the time of publication of this report, Austria 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.

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

4. 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.

5. Annex I shows annual GHG emissions for Austria, including totals excluding and including the LULUCF sector, indirect CO_2 emissions and emissions by gas and by sector. Annex I also contains background data related to emissions and removals from KP-LULUCF activities, if elected, by gas, sector and activity for Austria.

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

II. Summary and general assessment of the 2018 annual submission

7. In accordance with paragraph 76 of the UNFCCC review guidelines and paragraphs 47 and 65 of the Article 8 review guidelines, the ERT has prioritized: the review of issues and/or problems identified in previous review reports or in the initial assessment; recalculations that have changed the emissions or removals estimate for a category by more than 2 per cent and/or national total emissions by more than 0.5 per cent for any of the recalculated years; and supplementary information reported under the Kyoto Protocol. Table 2 provides the assessment by the ERT of the annual submissions with respect to the tasks undertaken during the desk review. Further information on the issues identified, as well as additional findings, may be found in tables 3, 5 and 6.

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

Assessment			*Issue or problem ID#(s) in table 3, 5 and/or 6[a]*
Date of submission	Original submission: 12 April 2018 (NIR), 12 April 2018, v3 (CRF tables), 12 April 2018 (SEF tables)		
Review format	Desk review		
Application of the requirements of the UNFCCC Annex I inventory reporting guidelines and Wetlands Supplement (if applicable)	1. Have any issues been identified in the following areas:		
	(a) Identification of key categories	Yes	I.16
	(b) Selection and use of methodologies and assumptions	No	
	(c) Development and selection of EFs	No	
	(d) Collection and selection of AD	No	
	(e) Reporting of recalculations	Yes	E.5
	(f) Reporting of a consistent time series	No	
	(g) Reporting of uncertainties, including methodologies	No	

[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 table 3, 5 and/or 6[a]*
	(h) QA/QC	QA/QC procedures were assessed in the context of the national system (see para. 2 in this table)	
	(i) Missing categories/completeness[b]	Yes	L.2, L.3
	(j) Application of corrections to the inventory	No	
Significance threshold	For categories reported as insignificant, has the Party provided sufficient information showing that the likely level of emissions meets the criteria in paragraph 37(b) of the UNFCCC Annex I inventory reporting guidelines?	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	2. Have any issues been identified related to the 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	
	3. Have any issues been identified related to the 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	
	4. Have any issues been identified related to reporting of information on ERUs, CERs, AAUs and RMUs and on discrepancies reported in accordance with decision 15/CMP.1, annex, chapter I.E, in conjunction with decision 3/CMP.11, taking into consideration any findings or recommendations contained in the SIAR?	No	
	5. Have any issues been identified in matters related to Article 3, paragraph 14, of the Kyoto Protocol, specifically problems related to the transparency, completeness or timeliness of reporting on the Party's activities related to the priority actions listed in decision 15/CMP.1, annex, paragraph 24, in conjunction with decision 3/CMP.11, including any changes since the previous annual submission?	Yes	G.5
	6. Have any issues been identified related to the reporting of LULUCF activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, as follows:		
	(a) Reporting requirements in decision 2/CMP.8, annex II, paragraphs 1–5	No	
	(b) Demonstration of methodological consistency between the reference level and reporting on	No	

Assessment			*Issue or problem ID#(s) in table 3, 5 and/or 6[a]*
	FM in accordance with decision 2/CMP.7, annex, paragraph 14		
	(c) Reporting requirements of decision 6/CMP.9	No	
	(d) Country-specific information to support provisions for natural disturbances, in accordance with decision 2/CMP.7, annex, paragraphs 33 and 34	Yes	KL.2
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	
	Did the Party submit a revised estimate to replace a previously applied adjustment?	NA	The Party does not have a previously applied adjustment
Response from the Party during the review	Has the Party provided the ERT with responses to the questions raised, including the data and information necessary for the assessment of conformity with the UNFCCC Annex I inventory reporting guidelines and any further guidance adopted by the Conference of the Parties?	Yes	
Recommendation for an exceptional in-country review	On the basis of the issues identified, does the ERT recommend that the next review be conducted as an in-country review?	No	
Question of implementation	Did the ERT list a question of implementation?	No	

[a] The ERT identified additional issues and/or problems in IPPU, LULUCF and waste sectors, as well as general issues that are not listed in this table but are included in tables 3, 5 and/or 6.

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

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

8. Table 3 compiles all the recommendations made in previous review reports that were included in the previous review report, published on 31 May 2017.[4] For each issue and/or problem, the ERT specified whether it believes the issue and/or problem has been resolved by the conclusion of the review of the 2018 annual submission and provided the rationale for its determination, which takes into consideration the publication date of the previous review report and national circumstances.

[4] FCCC/ARR/2016/AUT. The ERT notes that the individual inventory review of Austria's 2017 annual submission did not take place during 2017. As a result, the latest published annual review report reflects the findings of the review of the Party's 2016 annual submission.

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	Key category analysis – (G.3, 2016) (G.3, 2015) Adherence to the UNFCCC Annex I inventory reporting guidelines	Identify 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.	Resolved. The results of the key category analysis for the base year and the latest reported inventory year, using approach 1, level and trend assessment, including and excluding LULUCF have been included in the NIR (annex 1).
G.2	CRF tables– (G.4, 2016) (G.4, 2015) Transparency	Where the notation key "IE" is used in the inventory, provide in the CRF completeness table 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.	Resolved. CRF table 9 provides an explanation of the "IE" notation keys.
G.3	CRF tables – (G.5, 2016) (G.5, 2015) Comparability	Complete the CRF Summary3s1 and Summary3s2 tables using the indicated notation keys to specify the method applied and the EF used.	Resolved. CRF tables Summary3s1 and Summary3s2 are complete.
G.4	QA/QC and verification – (G.6, 2016) (G.6, 2015) Adherence to the UNFCCC Annex I inventory reporting guidelines	Enhance the QC practices, or the application of the existing practices, in order to ensure consistency between the NIR and the CRF tables.	Addressing. During the review Austria indicated that in 2018 it introduced a rule that one member of the sector team, which consists of two experts, carries out random comparisons of data provided in the NIR and the CRF tables. Beyond that the coordinator of the NIR also carries out checks, checking randomly at least five numbers per sector chapter. The Party also explained that if CRF tables are updated during the preparation of the inventory, the data manager informs the whole team to make sure comparisons between CRF and NIR data are done by sector experts with the latest data set. However, the ERT noted that some of the inconsistencies between the NIR and CRF tables identified in the previous review report reoccurred in the 2018 submission: NIR table 120 (corresponding to table 105 in the 2016 submission) presents "0" for category 2.F for 1990–1991 while CRF table 10 includes a notation key "NO"; NIR table 8 identifies CO_2 from land converted to cropland as a key category according to approach 1, level assessment in 2016, but it is not indicated as a key category in CRF table 7. During the review, Austria explained that the key category analysis in the NIR is carried out using both approach 1 and 2 methods and is conducted at a more

ID#	Issue and/or problem classification[a, b]	Recommendation made in previous review report	ERT assessment and rationale
			detailed level compared with the automatically generated key category analysis in the CRF tables. The Party further stated that the key category analysis generated by the CRF reporter software cannot be modified. The ERT agreed with the Party's explanation.
Energy			
E.1	1.A. Fuel combustion – sectoral approach – peat and biomass – CO_2 and CH_4 (E.10, 2016) (E.10, 2015) Accuracy	Use the 2006 IPCC Guidelines default carbon content for peat, sewage sludge, black liquor, biogas, sewage sludge gas and landfill gas (non-fossil), if country-specific or plant/fuel level studies are not available and report the estimates.	Resolved. Austria used the default values reported in the 2006 IPCC Guidelines except for CH_4 EFs for wood/wood waste, sewage sludge, MSW and industrial waste. For sewage sludge, MSW and industrial waste, Austria continued using the country-specific EF (12 kg CH_4/TJ). During the review, Austria informed the ERT that this CH_4 EF value was derived from a country-specific hydrocarbon (C_xH_y) EF of 50 kg/TJ, assuming that CH_4 contributes to about one quarter of total C_xH_y emissions. The ERT was provided with the corresponding reference, which reports the country-specific derived value (BMWA-EB, 1996). Austria also indicated to the ERT that this CH_4 EF was compared with the CH_4 EFs for different MSW incineration technologies reported in section 5.4.2 of the 2006 IPCC Guidelines, volume 5, and that within this information framework the adopted value appears as rather conservative. The ERT agrees with this. For wood/wood waste under energy industries and manufacturing industries and construction Austria selected the lower limit of the range in the 2006 IPCC Guidelines, volume 2, tables 2.2 and 2.3 (10 kg CH_4/TJ). During the review, Austria explained that this choice is based on the fact that the boilers are continuously operated, which is needed to reach the legal flue gas limits for air pollutants such as volatile organic compounds, carbon monoxide and particulate matter (PM10). Austria also informed the ERT that it considers that the selected value of 10 kg CH_4/TJ is appropriate to reflect the technologies and operating conditions used in the country. The ERT agrees with the approach.
E.2	1.A.1.a Public electricity and heat production – other fossil – CO_2 (E.9, 2016) (E.9, 2015) Accuracy	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 per cent, according to the 2016 NIR, p.86) into account when calculating the CO_2 emission estimates for the most recent years. If Austria confirms the validity of the fraction	Resolved. The NIR (p.97) reports that in 2015 a study that estimated CO_2 emissions using determined input and output process parameters from selected Austrian MSW incineration plants was made available to the inventory team. The NIR also reports that the outcome of this study, which was unpublished during the preparation of the 2018 submission (1) did not contradict the average share of fossil carbon in the MSW of about 45 per cent used by Austria and (2) indicated that the selected CO_2 EF was within a "conservative range". During the review Austria provided the ERT with a

ID#	Issue and/or problem classification[a, b]	Recommendation made in previous review report	ERT assessment and rationale
		analysis from the local waste authority of Vienna (MA 48) (1997/1998), then provide this information in the NIR to verify the waste fractions, carbon content and heating value of the waste for incineration to generate energy.	published short version report of the referred study (Schwarzböck, 2015). The report presents the methodology used and the main results of the study. The Party explained that the methodology, standardized under ISO 18466:2016 (Stationary source emissions – Determination of the biogenic fraction in CO_2 in stack gas using the balance method), considers mass balance, ash balance, carbon balance, energy balance, oxygen balance and the difference between oxygen consumption and CO_2 output. The study reports a value of 42.6 ± 0.8 kg CO_2/GJ for the average fossil CO_2 EF for the 10 solid waste incineration plants studied in 2014. During the review, Austria explained that the study included sewage sludge while the selected CO_2 EF value of 48.88 kg CO_2/GJ applied for MSW in the inventory excludes sewage sludge.
E.3	1.A.2.c Chemicals – other fossil – CO_2 (E.12, 2016) (E.12, 2015) Transparency	Provide explanations to support the CO_2 EFs for industrial waste and other waste.	Resolved. The ERT considers that the information in the NIR is sufficiently transparent. According to the NIR (chapter 3.2.11.3), annual CO_2 emissions from industrial waste under chemicals were estimated according to three main components: (1) one plant with a capacity of 150 kt solid waste annually, (2) different amounts of solid waste from other facilities reporting under the EU ETS and (3) other waste, with 50 per cent of its composition being a hydrogen-rich waste gas. The NIR further indicates that (1) for the first component (solid waste) an NCV of 10 TJ/kt and a CO_2 EF of 104.17 t CO_2/TJ were selected, and during the review the Party explained that the NCV is a rounded value of those in the range 9.4–9.9 TJ/kt reported in the national energy balance for the period 2005–2015 for industrial waste used as transformation input and (2) as half of other waste is mostly hydrogen, a value of half of the EF for solid waste burned at an annual rate of 150 kt was selected (i.e. 52.09 t CO_2/TJ). During the review, Austria further confirmed to the ERT that the nature of the solid phase of the third component (other waste) is the same as that for solid waste burned at the one facility at a capacity of 150 kt per year.
E.4	1.A.3.b Road transportation – biomass – CH_4 and N_2O (E.5, 2016) (E.5, 2015) (30, 2014) (34, 2013) Comparability	Report N_2O and CH_4 emissions from biomass separately.	Resolved. N_2O and CH_4 emissions from biomass under transportation are reported separately in CRF table 1.A(a)s3 as explained in the NIR (chapter 3.2.12.2).

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*	*ERT assessment and rationale*
IPPU			
I.1	2.A.3 Glass production – CO_2 (I.6, 2016) (I.6, 2015) Accuracy	Use the exact default EFs from the 2006 IPCC Guidelines for soda ash, limestone and dolomite for 1990–2004.	Resolved. Austria used in its inventory exact default EFs from the 2006 IPCC Guidelines, volume 3, table 2.1, for soda ash, limestone and dolomite, as reported in the NIR (chapter 4.2.3.2).
I.2	2.A.4 Other process uses of carbonates – CO_2 (I.7, 2016) (I.7, 2015) Comparability	Reallocate the emissions from magnesia sinter production to 2.A.4.c.	Resolved. Magnesia sinter production is reported under category 2.A.4.c.
I.3	2.A.4 Other process uses of carbonates – CO_2 (I.8, 2016) (I.8, 2015) Transparency	Provide information in the NIR that a tier 2 methodology from the 2006 IPCC Guidelines is used to estimate emissions from other uses of soda ash.	Resolved. Austria reported in its NIR, chapter 4.2.4.2, that for other uses of soda ash, a tier 2 methodology from the 2006 IPCC Guidelines is used.
I.4	2.A.4 Other process uses of carbonates – CO_2 (I.9, 2016) (I.9, 2015) Transparency	Include in the NIR the information that from 2005 onwards, verified CO_2 emissions reported under the EU ETS were used for estimation of emissions for brick and tiles, for 1998 to 2001 emissions were calculated based on carbon contents in raw material used in the various facilities and for the intermediate years, the same implied emission factor was applied. Explain and identify which method from the 2006 IPCC Guidelines was used to calculate the emissions.	Resolved. Austria included an explanation of the methodology and EFs applied for emission estimation from brick production (NIR chapter 4.2.4.1). The explanation was provided for the entire time series. Austria also explained that the method used for 2005–2016 is a tier 3 method.
I.5	2.B.1 Ammonia production – CO_2 (I.10, 2016) (I.10, 2015) Transparency	Explain how the CO_2 emissions from fertilizer production are allocated.	Addressing. Austria reported in its NIR (p.230) how CO_2 emissions from fertilizer production are allocated (i.e. under CRF category 2.B.5); however, the NIR does not contain any detailed information. During the review Austria informed the ERT that a mistake had occurred in the NIR. Urea and fertilizer production are in fact reported in CRF category 2.B.10.ii (country-specific category, other chemical bulk production) and the related information is reported in the NIR (p.239, chapter 4.3.3, Chemical industry – other: Production of fertilizers and urea). The Party also stated that the information will be corrected in the next NIR. The ERT considers that including the above explanation in the NIR would resolve the issue.
I.6	2.B.1 Ammonia production – CO_2 (I.11, 2016) (I.11, 2015) Comparability	Change the reporting for the recovery of CO_2 from ammonia production from "NO" to the sum of CO_2 bound in the three products (melamine, fertilizer and urea).	Not resolved. Austria did not change the reporting of CO_2 recovery under category 2.B.1 ammonia production. During the review Austria explained that in the next submission, it plans to report in CRF table 2(I).A-Hs1 the amount of CO_2 recovered.

ID#	*Issue and/or problem classification*[a, b]	*Recommendation made in previous review report*	*ERT assessment and rationale*
I.7	2.B.8 Petrochemical and carbon black production – CO_2 (I.12, 2016) (I.12, 2015) Accuracy	Contact the producer to confirm that only ethylene is produced or use publicly available information.	Resolved. The NIR (chapter 4.3.4.2) includes an explanation that, for ethylene production, CO_2 emissions are reported under the energy sector since the products are returned to the refinery. During the review Austria explained that the producer was contacted and it was confirmed that only ethylene is produced in the plant.
I.8	2.B.8 Petrochemical and carbon black production – CO_2 (I.12, 2016) (I.12, 2015) Transparency	Implement a transparent explanation as to why only ethylene is produced in the refinery and no other products such as propylene, or provide estimates if new information is available.	Not resolved. The NIR does not contain any additional information about the possible production of other products. During the review Austria clarified that there is only one plant, which produces ethylene (see also ID# I.7).
I.9	2.C.3 Aluminium production – SF_6 (I.13, 2016) (I.13, 2015) Comparability	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.	Resolved. SF_6 emissions were reported under category 2.C.3 (CRF table 2(II)B-Hs1).
I.10	2.C.3 Aluminium production – SF_6 (I.13, 2016) (I.13, 2015) Transparency	Amend the reporting in chapter 4.4.4 as it still includes the old nomenclature and improve the discussion of category 2.C.3.	Resolved. The reporting in the NIR was updated. NIR chapter 4.4.3 was amended to include a discussion on SF_6 emissions under category 2.C.3. The NIR chapter 4.4.4 was updated to include only SF_6 used in magnesium foundries.
I.11	2.C.4 Magnesium production – SF_6 (I.14, 2016) (I.14, 2015) Transparency	Obtain confirmation from the company producing magnesium that no gases other than SF_6 are used, and include this information in the NIR.	Resolved. The information was included in the NIR (chapter 4.4.4).
I.12	2.C.4 Magnesium production – SF_6 (I.14, 2016) (I.14, 2015) Transparency	Explain in the NIR why for some years the company had reported no consumption of SF_6.	Resolved. An explanation of the fluctuations was provided in the NIR (chapter 4.4.4).
I.13	2.F.1 Refrigeration and air conditioning – HFCs (I.3, 2016) (I.3, 2015) (37, 2014) Transparency	Include a more detailed and transparent description as to where emissions of HFC-23 are included.	Resolved. Information is reported in the NIR (chapter 4.7.2.1). Emissions are calculated for R134a and for two other refrigerant groups. The blends are split into their main components (R32, R125, R134a and R143a). Emissions of other gases (HFC-23 and C_4F_8), which are imported in small quantities only, are not disaggregated but are included in the emissions of the three main components, R32, R125 and R134a.
Agriculture			
A.1	3.D Direct and indirect N_2O emissions from agricultural soils –	Provide an explanation of the methodology used to derive the	Resolved. The Party provided sufficient explanation for both the data source and methodology (average of two years to smooth

ID#	Issue and/or problem classification[a, b]	Recommendation made in previous review report	ERT assessment and rationale
	N_2O (A.6, 2016) (A.6, 2015) Transparency	fertilizer use data for 1990 in the NIR.	the impact of market prices) in the NIR (pp.337–8).
LULUCF			
L.1	4. General (LULUCF) – CO_2, CH_4 and N_2O (L.1, 2016) (L.1, 2015) (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.	Resolved. In the improvement section of its NIR (chapter 10.4.2, table 303) Austria explained that it already uses tier 3 methods for the most relevant subcategories, and that country-specific methods and EFs are used almost exclusively in the LULUCF sector. Therefore Austria considered that there are limited possibilities to further prioritize improvements based on the results of the uncertainty analysis. The ERT agrees with the Party's assessment.
L.2	4.A.1 Forest land remaining forest land – CO_2 (L.2, 2016) (L.2, 2015) (57, 2014) (60, 2013) (73, 2012) Completeness	Provide estimates of the carbon stock changes for forests not in yield when the new NFI data become available and use the correct notation key.	Addressing. During the review, Austria explained that the NFI is currently ongoing and that new data will be ready for submission in 2022, which is the last submission under the second commitment period of the Kyoto Protocol. Austria used the notation key "NE" for carbon stock changes in living biomass for forests not in yield, in accordance with the recommendation from the previous reviews.
L.3	4.A.1 Forest land remaining forest land – CO_2 (L.3, 2016) (L.3, 2015) (58, 2014) Completeness	Provide estimates of the carbon stock changes in mineral soils for forests not in yield using the best available data. Alternatively, use the appropriate notation key and provide information justifying its use in the annual submission.	Addressing. During the review, Austria indicated that the new NFI is currently ongoing (see issue ID# L.2) and, when completed, model runs for the soils of forests not in yield will be carried out. Austria used the notation key "NE" for carbon stock changes in mineral soils for forests not in yield in CRF table 4.A but did not provide information justifying its use.
L.4	4.A.1 Forest land remaining forest land – CO_2 (L.4, 2016) (L.4, 2015) (59, 2014) Transparency	Enhance the description of the method used to report carbon stock changes in litter and deadwood 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.	Resolved. Austria included in the NIR (chapter 6.2.4.1.2 and 6.4.1.2.3) a description of the method used to report carbon stock changes in litter and deadwood. Information has also been included in the documentation box of CRF table 4.A.
L.5	4.B.1 Cropland remaining cropland – CO_2 (L.5, 2016) (L.5, 2015) Transparency	Include information on the AD of the different cropland management types.	Resolved. Austria included in the NIR (chapter 6.3.4.1.4) additional information on AD of the different cropland management types, including in figure 35.
L.6	4.D.1 Wetlands remaining wetlands – CO_2, CH_4 and N_2O (L.6, 2016) (L.6,	Improve the description of the category wetlands remaining wetlands, obtain the AD for flooded land remaining flooded	Resolved. Austria has improved the description in the NIR of the category wetlands remaining wetlands, in particular, the subcategory other wetlands remaining other wetlands. Austria

ID#	Issue and/or problem classification[a, b]	Recommendation made in previous review report	ERT assessment and rationale
	2015) Transparency	land and use the correct notation keys in the next NIR and the CRF tables.	explained in the NIR (chapter 6.5.4.1) that it is not possible to distinguish the areas of managed water bodies from natural lakes and rivers on the basis of the data source used for the wetlands area, and therefore all areas of flooded land remaining flooded land are included under other wetlands remaining other wetlands. In CRF table 4.D Austria used the notation key "IE" for AD of flooded land remaining flooded land (the notation key "NE" was used in the 2016 annual submission).
Waste			
W.1	5.A.1 Managed waste disposal sites – CH_4 (W.1, 2016) (W.1, 2015) Transparency	Include the references from which the country-specific value for the fraction of CH_4 in generated landfill gas was derived in the description in the NIR (references were provided during the review).	Resolved. Austria has included references for parameters used in its NIR (p.487, table 282), including for the country-specific fraction of CH_4 in landfill gas.
W.2	5.A.1 Managed waste disposal sites – CH_4 (W.1, 2016) (W.1, 2015) Accuracy	Include a justification for the deviation from the 2006 IPCC Guidelines default percentage for the fraction of CH_4 in generated landfill gas or provide revised estimates using the IPCC defaults.	Resolved. Austria has provided an appropriate justification for the selection of its country-specific value for the fraction of CH_4 in landfill gas in its NIR (p.490), referring to several literature references.
W.3	5.A.1 Managed waste disposal sites – CH_4 (W.2, 2016) (W.2, 2015) Transparency	Include in the NIR the information on the reasoning for the choices of DOC_f values.	Resolved. Austria has provided an appropriate justification for the selection of its country-specific DOC_f values in its NIR (pp.489–490), particularly where DOC_f values higher than the IPCC default have been used.
W.4	5.C.1 Waste incineration – CO_2 (W.3, 2016) (W.3, 2015) Accuracy	Correct the AD for 1990 and 1991.	Resolved. Austria has corrected the AD presented in CRF table 5.C for the years 1990 and 1991 (33.20 kt and 31.03 kt non-biogenic MSW, respectively).
W.5	5.C.1 Waste incineration – CO_2 (W.4, 2016) (W.4, 2015) Accuracy	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.	Resolved. Austria now applies the IPCC default oxidation factor of 100 per cent in its calculation of CO_2 emissions from waste incineration. This is outlined in the NIR (p.499).
W.6	5.C.2 Open burning of waste – CO_2, CH_4 and N_2O (W.5, 2016) (W.5, 2015) Transparency	Include a paragraph in the NIR with information on the national prohibition of open burning with references to the national legislation.	Resolved. Austria has included a paragraph in its NIR (chapter 7.4, p.497) identifying the Austrian Federal Clean Air Act as justification for the reporting of "NO" for emissions under category 5.C.2 Open burning of waste.

ID#	Issue and/or problem classification[a, b]	Recommendation made in previous review report	ERT assessment and rationale
KP-LULUCF			
KL.1	Article 3.3 activities – CO_2 (KL.1, 2016) (KL.1, 2015) (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.	Resolved. Austria explained in the NIR (chapter 11.4.2) that the criteria to distinguish harvesting or disturbances and replanting or regrowth are based on the criteria to identify deforestation, which include that (1) the forest definition of the Austrian NFI has ceased to apply and (2) there are significant visible changes in soil structure or ground vegetation which do not allow the natural succession of a forest. The Party further stated that because the identification of deforestation is based on the two criteria above, it does not apply any time-period threshold to distinguish harvesting or disturbances, and replanting or regrowth from deforestation.
KL.2	FM – CO_2 (KL.2, 2016) (KL.2, 2015) Transparency	Provide information on natural disturbance types whose emissions the Party wishes to exclude from accounting during the commitment period.	Addressing. As explained in the NIR (chapter 10.4.2 on improvements made in response to the review process) Austria has improved NIR chapter 11.5.2.4 by, for example, presenting in figure 49 the annual natural disturbance emissions in 1990 to 2009 (wildfire, pests, storm and snow). During the review, Austria explained that in the next submission it plans to include a list of the natural disturbance types it wishes to exclude from accounting during the commitment period.
KL.3	FM – CO_2 (KL.3, 2016) (KL.3, 2015) Transparency	Enhance the description of the technical correction of "updated expansion ratios".	Resolved. Austria has included in the NIR (chapter 11.5.2.3) additional information on the technical correction, including information on updated biomass estimates. Austria also reported the current and previously used expansion ratios in NIR table 319.

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

[b] The review of the 2017 annual submission of Austria did not take place during 2017 and as such, the 2017 annual review report was not available at the time of this review. Therefore, the recommendations reflected in table 3 are taken from the 2016 annual review report. For the same reason, the year 2017 is excluded from the list of years in which the issue has been identified.

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, the ERT has assessed that there are no issues identified in three successive reviews that have not been addressed by the Party.

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

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	

[a] The review of the 2017 annual submission of Austria did not take place during 2017. Therefore, the year 2017 is not taken into account when counting the number of successive years in table 4. In addition, as the reviews of the 2015 and 2016 annual submissions were held in conjunction with each other, they are not considered "successive" years and 2015/2016 is considered as one year.

V. Additional findings made during the individual review of the 2018 annual submission

10. Tables 5 and 6 contain findings made by the ERT during the individual review of the 2018 annual submission of Austria that are additional to those identified in table 3. In accordance with paragraph 76(b) of the UNFCCC review guidelines, the ERT has prioritized in table 5 recalculations that changed the total emissions/removals for a category by more than 2 per cent and/or national total emissions by more than 0.5 per cent for any of the recalculated years.

Table 5
Additional findings made during the individual review of the 2018 annual submission of Austria related to recalculations

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue and/or a problem?[a] If yes, classify by type*
Energy			
E.5	1.B.2.b Natural gas – CO_2	The NIR indicates (p.517) that CO_2 emissions from natural gas production were recalculated for the years 2003–2015 because of revision of data reported by the Association of the Austrian Petroleum Industry, which identified that, since 2003, emissions from this category were erroneously reported, including not only fugitive emissions but also pyrogenic emissions by one company. However, the NIR did not indicate whether the subtracted emissions had already been reported elsewhere. During the review, Austria informed the ERT that pyrogenic CO_2 emissions from natural gas production were already taken into account under fuel combustion activities, more specifically under manufacture of solid fuels and other energy industries (category 1.A.1.c). Austria further indicated that recalculations under category 1.B.2.b.2 were performed to avoid double counting, which had occurred in previous submissions. Austria also indicated that a more transparent description of the methodology will be included in its next submission to enhance transparency. The ERT recommends that Austria provide transparent information in the NIR on the allocation of pyrogenic CO_2 emissions from natural gas production.	Yes. Transparency
IPPU			
I.14	2. General (IPPU)	Recalculations were made to the IPPU sector that changed the emission/removal estimate for a category by more than 2 per cent and/or national total emissions by more than 0.5 per cent; however, the ERT did not identify any issues or problems with these recalculations.	Not an issue/problem
Agriculture			
A.2	3. General (agriculture)	Recalculations were made to the agriculture sector that changed the emission/removal estimate for a category by more than 2 per cent and/or national total emissions by more than 0.5 per cent; however, the ERT did not identify any issues or problems with these recalculations.	Not an issue/problem
LULUCF			
L.7	4. General (LULUCF)	Recalculations were made to the LULUCF sector that changed the emission/removal estimate for a category by more than 2 per cent and/or national total emissions by more than 0.5 per cent; however, the ERT did not identify any issues or problems with these recalculations.	Not an issue/problem
Waste			
W.7	5. General (waste)	No recalculations were made to the waste sector that changed the emission/removal estimate for a category by more than 2 per cent and/or national total emissions by more than 0.5 per cent.	Not an issue/problem

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue and/or a problem?[a] If yes, classify by type*
KP-LULUCF			
KL.4	General (KP-LULUCF)	Recalculations were made to KP-LULUCF activities that changed the emission/removal estimate for a category by more than 2 per cent and/or national total emissions by more than 0.5 per cent; however, the ERT did not identify any issues or problems with these recalculations.	Not a problem

[a] Recommendations made by the ERT during the review are related to issues as defined in paragraph 81 of the UNFCCC review guidelines, or problems as defined in paragraph 69 of the Article 8 review guidelines. Encouragements are made to the Party to address all findings not related to such issues or problems.

11. Table 6 contains additional findings made by the ERT during the individual review of the 2018 annual submission that are not covered in table 3 or 5, but are within the scope of the desk review as specified in paragraph 76 of the UNFCCC review guidelines or paragraph 65 of the Article 8 review guidelines and are findings that the ERT wishes to convey to the Party.

Table 6
Additional findings made during the individual review of the 2018 annual submission of Austria

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue and/or a problem?[a] If yes, classify by type*
General			
G.5	Article 3, paragraph 14, of the Kyoto Protocol	Austria reported information on minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol in the NIR (chapter 15) and explained that compared with the previous submission, information regarding reduction of market imperfections had been updated. The ERT noted that the reporting of information under decision 15/CMP.1, annex, paragraph 24(d) and (f), in conjunction with decision 3/CMP.11, was general and not sufficiently transparent. Regarding paragraph 24(d), Austria explained in the NIR that its focus is on renewable energy, but there was no information on any cooperation initiatives involving developing country Parties. Similarly, the section on assistance to developing countries which are highly dependent on the export and consumption of fossil fuels in diversifying their economies (para. 24(f)) referred to activities under IEA joint implementation agreements and did not provide specific information on Austria's involvement and actions. During the review, Austria provided further details on its cooperation with developing countries within the programmes and projects concerning renewable energy sources. It also provided additional information regarding its involvement in assistance to developing countries through the IEA. The ERT recommends that Austria improve the transparency of the information in its NIR by including specific information on the key activities with regard to its assistance to developing countries on renewable energy sources as part of reporting under decision 15/CMP.1, annex, paragraph 24(d), in conjunction with decision 3/CMP.11 and an update of its involvement in IEA joint implementation agreements, in the context of reporting under decision 15/CMP.1, annex, paragraph 24(f).	Yes. Transparency

ID#	*Finding classification*	*Description of the finding with recommendation or encouragement*	*Is finding an issue and/or a problem?[a] If yes, classify by type*
IPPU			
I.15	2.A.3 Glass production – CO_2	Austria reported in its NIR (table 126) that consumption of other carbonates in glass production increased from 2,467 t in 2005 to 23,856 t in 2016. During the review, Austria explained that the mass flow for other carbonates in 2016 is incorrect, owing to the wrong allocation of carbonate use by one company. However, the figure for CO_2 emissions is correct and has been verified by the EU ETS. The Party also indicated that it plans to update the carbonate mass flow data based on the information provided by the Austrian Glass Association. The ERT recommends that Austria include accurate information in the NIR on the mass flow of carbonates in order to increase transparency of the reporting.	Yes. Transparency
I.16	2.C.7 Other (metal industry) – SF_6	Following the recommendation from the previous review, Austria reallocated emissions of SF_6 from secondary production of aluminium from CRF category 2.C.7 to 2.C.3 (see ID# I.9 in table 3). CRF table 2(I)s1 includes blank cells for SF_6 from category 2.C.7 for the entire time series. However, in the NIR, table 121, 2.C.7 (SF_6) is reported as a key category by the trend assessment. Also, tables 8 and 9 of the NIR, and several tables in annex 1 to the NIR include data for SF_6, under CRF category 2.C.7, for the base year and report 2.C.7 as a key category. During the review, Austria explained that the issue was caused by a mistake in the main key category analysis sheets, in which the category code 2.C.7 was still used instead of 2.C.3. The Party also indicated that the key category analysis sheets have already been updated and that it plans to correct the error in the NIR of the next annual submission. The ERT recommends that Austria update the key category analysis in the NIR so that it reflects the reporting of SF_6 from secondary aluminium production in category 2.C.3 instead of 2.C.7.	Yes. Adherence to the UNFCCC Annex I inventory reporting guidelines
Agriculture			
A.3	3.B Manure management – CH_4 and N_2O	Austria has estimated the distribution of livestock manure per animal subcategory in different manure management systems using the results of a study, expert judgment and linear extrapolation (in the period 2005–2008). The distribution has remained constant since 2008. In the NIR (p.316), Austria indicated that, based on a comparison of the assumptions on the current distribution of housing and manure management systems with the Farm Structure Survey 2010, it was decided not to change the estimated distribution. During the review of the 2016 annual submission, Austria referred to its statement from a previous review (2014) that new research would be considered (issue ID# A.3 in document FCCC/ARR/2016/AUT). In the 2016 review Austria also indicated that the new data would be incorporated in the 2018 annual submission. According to the NIR of the 2018 annual submission (p.318), inclusion of the new data has been postponed until the 2019 submission. The ERT encourages Austria to use the new research findings in the 2019 annual submission.	Not an issue/problem
A.4	3.B Manure management – CH_4	Austria uses the IPCC defaults for B_o for cattle (p.323 of the NIR). The value of B_o has a significant impact on the CH_4 emissions from managed manure. According to the 2006 IPCC Guidelines, volume 4, decision tree in figure 10.3, Parties should collect country-specific data to inform B_o for significant species if CH_4 from manure management is a key category. In Austria, CH_4 from manure management is a key category and cattle are a significant species. During	Not an issue/problem

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue and/or a problem?[a] If yes, classify by type
		the review, Austria explained that no measurement data are available that would allow development of a country-specific B_o value. The ERT encourages Austria to develop a country-specific B_o value for cattle.	
LULUCF			
L.8	4. General (LULUCF) – N_2O	The ERT identified differences in table 225 of the NIR compared with the values in CRF table 4. For example, total GHG emissions and removals in NIR table 225 for forest land are reported as –4,292 kt CO_2 eq in 2016, while the sum of CO_2, CH_4 and N_2O emissions and removals for forest land in CRF table 4 is –4,295.03 kt CO_2 eq. During the review, Austria explained that table 225 of the NIR also includes indirect N_2O emissions, and therefore the figures are slightly different from those reported in CRF table 4, which does not include indirect N_2O emissions. The Party further stated that it plans to exclude indirect N_2O emissions from NIR table 225 to improve the consistency of the NIR and CRF tables. The ERT recommends that Austria ensure consistency in the figures in NIR table 225 and CRF table 4 or transparently explain in the NIR that the differences are due to the inclusion of indirect N_2O emissions in the NIR table.	Yes. Transparency
Waste			
W.8	5. General (waste) – CO_2, CH_4 and N_2O	The ERT identified a minor error in the waste tonnages presented in figure 40 of Austria's NIR (p.482), such that the total tonnage did not appear to add up within the mass flow diagram. During the review, Austria explained the reasons for the waste mass flow not adding up, and accepted that part of that is an error due to a waste fraction that had not been included. Austria also indicated its intention to correct the figure for the next submission. The ERT recommends that Austria correct NIR figure 40 to reflect the true mass waste flow, with an explanation in the NIR text of why the mass flow may not sum across its parts.	Yes. Transparency
KP-LULUCF			
		No additional findings beyond those contained in table 3 were made by the ERT during the 2018 individual review for the KP-LULUCF activities.	Not an issue/problem

[a] Recommendations made by the ERT during the review are related to issues as defined in paragraph 81 of the UNFCCC review guidelines, or problems as defined in paragraph 69 of the Article 8 review guidelines. Encouragements are made to the Party to address all findings not related to such issues or problems.

VI. Application of adjustments

12. The ERT has not identified the need to apply any adjustments to the 2018 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

13. Austria has elected commitment period accounting and therefore the issuance and cancellation of units for KP-LULUCF activities is not applicable for the 2018 review.

VIII. Questions of implementation

14. No questions of implementation were identified by the ERT during the individual review of the 2018 annual submission.

Annex I

Overview of greenhouse gas emissions and removals for Austria for submission year 2018 and data and information on activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, as submitted by Austria in its 2018 annual submission

1. Tables 7–10 provide an overview of total GHG emissions and removals as submitted by Austria.

Table 7
Total greenhouse gas emissions for Austria, base year[a]–2016
(kt CO_2 eq)

	Total GHG emissions excluding indirect CO_2 emissions		*Total GHG emissions including indirect CO_2 emissions[b]*		*Land-use change (Article 3.7 bis as contained in the Doha Amendment)[c]*	*KP-LULUCF activities (Article 3.3 of the Kyoto Protocol)[d]*	*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	66 718.67	78 700.56	NA	NA	NA		NA	
1990	66 708.16	78 690.05	NA	NA				
1995	66 468.92	79 730.17	NA	NA				
2000	64 067.45	80 431.54	NA	NA				
2010	79 052.88	84 930.84	NA	NA				
2011	76 344.00	82 449.67	NA	NA				
2012	74 441.28	79 916.89	NA	NA				
2013	75 653.69	80 178.00	NA	NA		–1 481.11	NA	–3 480.36
2014	71 716.10	76 441.57	NA	NA		–1 506.74	NA	–3 672.14
2015	74 410.36	78 855.71	NA	NA		–1 546.98	NA	–3 517.85
2016	75 464.20	79 672.64	NA	NA		–1 585.09	NA	–3 270.26

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

[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. Austria has not elected any activities under Article 3, paragraph 4, of the Kyoto Protocol. For activities under Article 3, paragraph 3, of the Kyoto Protocol and FM under Article 3, paragraph 4, only the inventory years of the commitment period must be reported.

[b] The Party has not reported indirect CO_2 emissions in CRF table 6.

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

[d] Activities under Article 3, paragraph 3, of the Kyoto Protocol, namely AR, and deforestation.

Table 8
Greenhouse gas emissions by gas for Austria, excluding land use, land-use change and forestry, 1990–2016
(kt CO_2 eq)

	CO_2[a]	*CH_4*	*N_2O*	*HFCs*	*PFCs*	*Unspecified mix of HFCs and PFCs*	*SF_6*	*NF_3*
1990	62 292.23	10 405.49	4 336.50	2.44	1 182.79	NA, NO	470.61	NO, NA
1995	64 205.95	9 561.37	4 419.50	353.45	83.35	NA, NO	1 100.11	6.44
2000	66 261.74	8 433.83	4 349.44	713.63	87.87	NA, NO	574.53	10.51
2010	72 383.14	7 255.02	3 391.18	1 483.45	78.05	NA, NO	335.87	4.12
2011	70 115.67	7 052.62	3 489.76	1 406.67	73.51	NA, NO	307.35	4.10
2012	67 661.40	6 942.73	3 456.10	1 485.51	50.72	NA, NO	311.88	8.56
2013	68 001.23	6 850.79	3 450.51	1 511.62	49.23	NA, NO	304.87	9.75
2014	64 253.33	6 708.73	3 519.72	1 583.08	53.03	NA, NO	313.13	10.56
2015	66 703.99	6 631.78	3 527.07	1 620.32	49.55	NO, NA	309.55	13.46
2016	67 402.08	6 567.07	3 613.51	1 640.61	50.39	NO, NA	392.84	6.14
Per cent change 1990–2016	**8.2**	**–36.9**	**–16.7**	**67 205.5**	**–95.7**	**NA**	**–16.5**	**NA**

Note: Emissions/removals reported in the sector other (sector 6) are not included in total GHG emissions.
[a] Austria did not report indirect CO_2 emissions in CRF table 6.

Table 9
Greenhouse gas emissions by sector for Austria, 1990–2016
(kt CO_2 eq)

	Energy	*IPPU*	*Agriculture*	*LULUCF*	*Waste*	*Other*
1990	52 914.08	13 662.30	8 188.65	–11 981.89	3 925.02	NO
1995	54 436.17	13 604.92	8 037.92	–13 261.25	3 651.16	NO
2000	55 322.36	14 639.68	7 506.39	–16 364.09	2 963.11	NO
2010	59 752.28	15 925.86	7 094.75	–5 877.96	2 157.95	NO
2011	57 305.65	15 954.98	7 146.41	–6 105.67	2 042.63	NO
2012	55 325.41	15 569.84	7 079.34	–5 475.61	1 942.30	NO
2013	55 399.86	15 886.75	7 062.84	–4 524.31	1 828.55	NO
2014	51 440.42	16 073.44	7 189.04	–4 725.48	1 738.67	NO
2015	53 352.45	16 669.37	7 177.66	–4 445.35	1 656.22	NO
2016	54 336.38	16 468.38	7 286.42	–4 208.44	1 581.46	NO
Per cent change 1990–2016	**2.7**	**20.5**	**–11.0**	**–64.9**	**–59.7**	**NA**

Notes: (1) Emissions/removals reported in the sector other (sector 6) are not included in total GHG emissions; (2) Austria did not report indirect CO_2 emissions in CRF table 6.

Table 10

Greenhouse gas emissions/removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol by activity, base year[a]–2016, for Austria

(kt CO_2 eq)

	Article 3.7 bis as contained in the Doha Amendment[b]	*Article 3.3 of the Kyoto Protocol*		*FM and elected Article 3.4 activities of the Kyoto Protocol*				
	Land-use change	*AR*	*Deforestation*	*FM*	*CM*	*GM*	*RV*	*WDR*
FMRL				–6 516.00				
Technical correction				5 823.00				
Base year	NA				NA	NA	NA	NA
2013		–2 017.59	536.48	–3 480.36	NA	NA	NA	NA
2014		–2 031.51	524.77	–3 672.14	NA	NA	NA	NA
2015		–2 065.31	518.33	–3 517.85	NA	NA	NA	NA
2016		–2 096.98	511.89	–3 270.26	NA	NA	NA	NA
Per cent change Base year–2016					**NA**	**NA**	**NA**	**NA**

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

[a] Austria has not elected any activities under Article 3, paragraph 4, of the Kyoto Protocol. For activities under Article 3, paragraph 3, of the Kyoto Protocol, and FM under Article 3, paragraph 4, only the inventory years of the commitment period must be reported.

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

2. Table 11 provides an overview of relevant key data for Austria's reporting under Article 3, paragraphs 3 and 4, of the Kyoto Protocol.

Table 11
Key relevant data for Austria under Article 3, paragraphs 3 and 4, of the Kyoto Protocol in the 2018 annual submission

Key parameters	*Values*
Periodicity of accounting	(a) AR: commitment period accounting (b) Deforestation: commitment period accounting (c) FM: commitment period accounting (d) CM: not elected (e) GM: not elected (f) RV: not elected (g) WDR: not elected
Election of activities under Article 3, paragraph 4	None
Election of application of provisions for natural disturbances	Yes, for FM
3.5% of total base-year GHG emissions, excluding LULUCF	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. AR in 2016	NA
2. Deforestation in 2016	NA
3. FM in 2016	NA
4. CM in 2016	NA
5. GM in 2016	NA
6. RV in 2016	NA
7. WDR in 2016	NA

Annex II

Information to be included in the compilation and accounting database

Tables 12–15 include 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 12
Information to be included in the compilation and accounting database for 2016, including on the commitment period reserve, for Austria
($t CO_2 eq$)

	Original submission	*Revised estimates*	*Adjustment*	*Final*
CPR	365 141 085			365 141 085
Annex A emissions for 2016				
CO_2	67 402 083			67 402 083
CH_4	6 567 072			6 567 072
N_2O	3 613 510			3 613 510
HFCs	1 640 611			1 640 611
PFCs	50 390			50 390
Unspecified mix of HFCs and PFCs	NO, NA			NO, NA
SF_6	392 837			392 837
NF_3	6 140			6 140
Total Annex A sources	**79 672 644**			**79 672 644**
Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2016				
3.3 AR	–2 096 978			–2 096 978
3.3 Deforestation	511 889			511 889
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2016				
3.4 FM	–3 270 259			–3 270 259

Table 13
Information to be included in the compilation and accounting database for 2015 for Austria
($t CO_2 eq$)

	Original submission	*Revised estimates*	*Adjustment*	*Final*
Annex A emissions for 2015				
CO_2	66 703 988			66 703 988
CH_4	6 631 779			6 631 779
N_2O	3 527 072			3 527 072
HFCs	1 620 316			1 620 316
PFCs	49 549			49 549
Unspecified mix of HFCs and PFCs	NO, NA			NO, NA
SF_6	309 547			309 547
NF_3	13 459			13 459
Total Annex A sources	**78 855 710**			**78 855 710**
Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2015				

	Original submission	*Revised estimates*	*Adjustment*	*Final*
3.3 AR	–2 065 312			–2 065 312
3.3 Deforestation	518 330			518 330
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2015				
3.4 FM	–3 517 846			–3 517 846

Table 14
Information to be included in the compilation and accounting database for 2014, for Austria
(t CO_2 eq)

	Original submission	*Revised estimates*	*Adjustment*	*Final*
Annex A emissions for 2014				
CO_2	64 253 326			64 253 326
CH_4	6 708 725			6 708 725
N_2O	3 519 717			3 519 717
HFCs	1 583 082			1 583 082
PFCs	53 029			53 029
Unspecified mix of HFCs and PFCs	NA, NO			NA, NO
SF_6	313 131			313 131
NF_3	10 563			10 563
Total Annex A sources	**76 441 572**			**76 441 572**
Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2014				
3.3 AR	–2 031 512			–2 031 512
3.3 Deforestation	524 772			524 772
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2014				
3.4 FM	–3 672 143			–3 672 143

Table 15
Information to be included in the compilation and accounting database for 2013, for Austria
(t CO_2 eq)

	Original submission	*Revised estimates*	*Adjustment*	*Final*
Annex A emissions for 2013				
CO_2	68 001 230			68 001 230
CH_4	6 850 787			6 850 787
N_2O	3 450 509			3 450 509
HFCs	1 511 621			1 511 621
PFCs	49 229			49 229
Unspecified mix of HFCs and PFCs	NA, NO			NA, NO
SF_6	304 869			304 869
NF_3	9 752			9 752
Total Annex A sources	**80 177 997**			**80 177 997**
Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2013				
3.3 AR	–2 017 591			–2 017 591
3.3 Deforestation	536 481			536 481
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2013				
3.4 FM	–3 480 360			–3 480 360

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 that were reported as "NE" or for which the ERT 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, carbon stock change in living biomass for forests not in yield – CO_2 (see table 3, ID# L.2);

(b) 4.A.1 Forest land remaining forest land, carbon stock change in mineral soils for forests not in yield – CO_2 (see table 3, ID# L.3).

Annex IV

Documents and information used during the review

A. Reference documents

IPCC reports

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

IPCC. 2014. *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol*. T Hiraishi, T Krug, K Tanabe, et al. (eds.). Hayama: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/kpsg.

IPCC. 2014. *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*. T Hiraishi, T Krug, K Tanabe, et al. (eds.). Geneva: IPCC. Available at http://www.ipcc-nggip.iges.or.jp/public/wetlands/.

Annual review reports

Reports on the individual review of the 2013, 2014, 2015 and 2016 annual submissions of Austria, respectively, contained in documents FCCC/ARR/2013/AUT, FCCC/ARR/2014/AUT, FCCC/ARR/2015/AUT and FCCC/ARR/2016/AUT.

Other

Aggregate information on greenhouse gas emissions by sources and removals by sinks for Parties included in Annex I to the Convention. Note by the secretariat. Available at https://unfccc.int/sites/default/files/resource/AGI%20report_2018.pdf

Annual status report for Austria for 2018. Available at https://unfccc.int/sites/default/files/resource/asr2018_AUT.pdf.

B. Additional information provided by the Party

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

BMWA-EB. 1996. *Energiebericht 1996 der Österreichischen Bundesregierung*. Vienna: Bundesministerium für Wirtschaftliche Angelegenheiten.

T. Schwarzböck. 2015. *Bestimmung der fossilen Kohlendioxidemissionen aus Österreichischen Müllverbrennungsanlagen (BEFKÖM).* Vienna: Technische Universität Wien.

[1] Reproduced as received from the Party.