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## Report on the individual review of the annual submission of Czechia 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 Czechia, 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 29 August to 3 September 2016 in Bonn, Germany.

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

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## I. Introduction<sup>1</sup>

1. This report covers the review of the 2015 annual submission of Czechia 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 29 August to 3 September 2016 in Bonn, Germany, and was coordinated by Mr. Tomoyuki Aizawa (UNFCCC secretariat). Table 1 provides information on the composition of the expert review team (ERT) that conducted the review of Czechia.

Table 1

### Composition of the expert review team that conducted the review of Czechia

<i>Area of expertise</i>	<i>Name</i>	<i>Party</i>
Generalist	Mr. Christopher Dore	United Kingdom of Great Britain and Northern Ireland
	Ms. Kristina Saarinen	Finland
Energy	Ms. Tahira Munir	Pakistan
	Mr. Peter Seizov	Bulgaria
	Ms. Nina Uvarova	Russian Federation
IPPU	Ms. Pia Forsell	Finland
	Mr. Andrew Neal	New Zealand
Agriculture	Ms. Marci Baranski	United States of America
	Mr. Abdulkadir Bektas	Turkey
	Mr. Paulo Cornejo	Chile
	Mr. Pa Ousman Jarju	Gambia
LULUCF	Mr. Rizaldi Boer	Indonesia
	Mr. Johannes Brötz	Germany
	Ms. Oksana Butrym	Ukraine
	Ms. Naoko Tsukada	Japan
Waste	Mr. Seungdo Kim	Republic of Korea
	Ms. Mayra Rocha	Brazil
Lead reviewers	Ms. Mayra Rocha	

<sup>1</sup> At the time of publication of this report, Czechia 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.

<i>Area of expertise</i>	<i>Name</i>	<i>Party</i>
	Ms. Kristina Saarinen	

*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,<sup>2</sup> including issues related to problems.<sup>3</sup> 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 Czechia, 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 Czechia, including totals excluding and including the land use, land-use change and forestry sector and indirect carbon dioxide emissions, and emissions by gas and by sector. Annex I also contains background data related to emissions and removals from activities under Article 3, paragraph 3, forest management under Article 3, paragraph 4, and additional activities under Article 3, paragraph 4, of the Kyoto Protocol, if elected, by gas, sector and activity for Czechia.
5. Information to be included in the compilation and accounting database can be found in annex II.
6. The ERT notes that Czechia’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 Czechia**

<i>Assessment</i>	<i>Issue or problem ID#(s) in table 3 and/or 5<sup>a</sup></i>
Dates of submission	Original submission: 15 June 2016 (NIR), 15 June 2016, version 2 (CRF tables), 25 August 2016 (SEF tables) Revised submissions: 20 October 2016, version 4 (CRF)

<sup>2</sup> Issues are defined in decision 13/CP.20, annex, paragraph 81.

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

<i>Assessment</i>	<i>Issue or problem ID#(s) in table 3 and/or 5<sup>a</sup></i>		
	tables), 12 April 2017, version 1 (CRF tables)		
	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.11, G.12
	2. Selection and use of methodologies and assumptions	Yes	E.16, W.10
	3. Development and selection of emission factors	Yes	E.12, I.6, L.1 L.4, L.6
	4. Collection and selection of activity data	Yes	L.2, KL.2
	5. Reporting of recalculations	No	
	6. Reporting of a consistent time series	Yes	E.10, A.3, A.21
	7. Reporting of uncertainties, including methodologies	Yes	G.6, G.12, G.13, E.2
	8. QA/QC	QA/QC procedures were assessed in the context of the national system (see below)	
	9. Missing categories/completeness <sup>b</sup>	Yes	E.19, I.3, I.9, I.10, I.11, I.12, I.17, L.2, KL.4, KL.6
	10. Application of corrections to the inventory	No	
Significance threshold	For categories reported as insignificant, has the Party provided sufficient information showing that the likely level of emissions meets the criteria in paragraph 37(b) of the UNFCCC Annex I inventory reporting guidelines?	Yes	
Description of trends	Did the ERT conclude that the description in the NIR of the trends for the different gases and sectors is reasonable?	Yes	
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	Yes	G.14

Assessment	<i>Issue or problem ID#(s) in table 3 and/or 5<sup>a</sup></i>		
	(b) Performance of the functions of the national registry and the technical standards for data exchange	No	
	3. ERUs, CERs, AAUs and RMUs and 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	Yes	G.9
	5. LULUCF activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol:		
	(a) Reporting in accordance with the requirements of decision 2/CMP.8, annex II, paragraphs 1–5	Yes	KL.9
	(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	Yes	KL.8
	(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	No	
	(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	NA	
	(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?	No	G.15
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	Yes	

<i>Assessment</i>	<i>Issue or problem ID#(s) in table 3 and/or 5<sup>a</sup></i>		
	further guidance adopted by the Conference of the Parties?		
Recommendation for an exceptional in-country review	On the basis of the issues identified, does the ERT recommend that the next <sup>c</sup> review be conducted as an in-country review?	Yes	Refer to annex III to this document for a list of questions and issues to be considered during this in-country review
Question of implementation	Did the ERT list a question of implementation?	No	

*Abbreviations:* AAU = assigned amount unit, CER = certified emission reduction unit, CPR = commitment period reserve, CRF = common reporting format, ERT = expert review team, ERU = emission reduction unit, LULUCF = land use, land-use change and forestry, NA = not applicable, 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 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*.

<sup>a</sup> 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.

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

<sup>c</sup> 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, published on 13 April 2015. 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 Czechia**

<i>ID#</i>	<i>Issue and/or problem classification<sup>a,b</sup></i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
<b>General</b>			
G.1	QA/QC and verification (table 3, 2014) (table 3, 2013) Adherence to UNFCCC Annex I inventory reporting guidelines	Enforce the sector-specific QA/QC procedures and report on the respective category-specific checks and results in the NIR	Resolved. The NIR includes information on sector-specific QA/QC throughout the different sectors of the emissions inventory

<i>ID#</i>	<i>Issue and/or problem classification<sup>a,b</sup></i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
G.2	NIR (table 3, 2014) (table 3, 2013) (27, 2012) Transparency	Enhance the transparency of the NIR by reporting information in the sectoral chapters under the correct headings, and by providing more detailed information on the methods and EFs used for the calculation of emission estimates, as well as a description of data sources and assumption used	Resolved. The NIR includes detailed information on data and methodologies used
G.3	National system (12(a), 2014) Transparency	Strengthen the capacity of the national system by solving the issues of budget restrictions and staff shortages	Resolved. The ERT notes that chapter 1.2 of the NIR refers to the inventory management, and roles and responsibilities are identified, and that no reference is made to limitations of resources impacting on performance
G.4	Methods (12(b), 2014) Accuracy	Improve the accuracy of the inventory further by moving to higher-tier estimation methods, prioritizing the introduction of these methods on the basis of the key category and uncertainty analyses	Resolved. During the review, the ERT did not indicate that there was a general issue of needing higher-tier methodologies than those used
G.5	QA/QC and verification (13, 2014) Adherence to UNFCCC Annex I inventory reporting guidelines	Continue the work on sector- and category-specific QA/QC procedures and provide information on progress made	Resolved. The NIR includes information on sector-specific QA/QC throughout the different sectors of the emissions inventory
G.6	Uncertainty analysis (table 4, 2014) Adherence to UNFCCC Annex I inventory reporting guidelines	Report the uncertainty analysis both including and excluding the LULUCF sector	Addressing. Annex 2 to the NIR presents the uncertainty analysis. The ERT noted that this analysis includes LULUCF categories, but no uncertainty analysis is presented without LULUCF. In response to a question during the review week, the Party explained that an uncertainty analysis without LULUCF is undertaken each year, but is not reported in the NIR
G.7	National system (101, 2014) Transparency	Report any change in the national system in accordance with decision 15/CMP.1, annex, chapter I.F, and/or further relevant decisions of the CMP	Resolved. The NIR includes information on the national system and any relevant changes
G.8	National registry (103, 2014), (108 and 109, 2013) Transparency	Include non-confidential up-to-date holding and transaction information in the publicly available information	Resolved. Holdings information is included in the publicly available information



<i>ID#</i>	<i>Issue and/or problem classification<sup>a,b</sup></i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
G.9	Article 3, paragraph 14, of the Kyoto Protocol (108, 2014) Transparency	Report any changes in the information provided under Article 3, paragraph 14, of the Kyoto Protocol in accordance with decision 15/CMP.1, annex, chapter I.H, and/or further relevant decisions of the CMP	Not resolved. The NIR reports updated information on the minimization of adverse impacts but does not report on the changes compared with the previous submission
<b>Energy</b>			
E.1	1. General (energy sector) (20, 2014) Transparency	Improve the transparency of reporting of the recalculations, including the changes in the AD used and the impact of the recalculations made	Resolved. The NIR provides a separate chapter describing the recalculations made and detailed information under each subcategory on the changes in AD
E.2	1. General (energy sector) (21, 2014) (21, 2013) Transparency*	Provide a full elaboration of the method of expert judgment used to improve the uncertainty values	Addressing. Some information is provided in NIR chapters 1.6 and 3.2.5 and annex 2. Further research on uncertainties is planned for 2017
E.3	1. General (energy sector) (22 and 33, 2014) Adherence to UNFCCC Annex I inventory reporting guidelines	Continue the work done so far in order to improve the QA/QC procedures (e.g. for ensuring consistent reporting between CRF tables 1.A(b), 1.A(c) and 1.A(d) for the reference approach) and to avoid typographical errors	Resolved. Czechia improved its QA/QC procedures and the particular inconsistency has been removed
E.4	1. General (energy sector) (33, 2014) Adherence to UNFCCC Annex I inventory reporting guidelines	Improve the QA/QC procedures in order to avoid typographical errors which could lead to reporting problems in the future	Resolved. The ERT did not identify significant typographical errors
E.5	Fuel combustion – reference approach (25, 2014), (28, 2013) Transparency	Address the issue of data alignment between the data reported to IEA and the data in the CRF tables and adequately explain any remaining differences	Resolved. The recommendation was regarding bituminous coal data, which has been resolved. Other issues regarding discrepancies with IEA data have been addressed in the NIR
E.6	Feedstocks, reductants and other non-energy use of fuels (27, 2014) Transparency	Include more detailed explanations of the distribution and use of the liquid fuels used as feedstocks in the energy sector in CRF table 1.A(d) and in the NIR	Resolved. The information is provided in NIR chapter 3.2.3
E.7	1.A.1.c Manufacture of solid fuels and other energy industries –	Include in the NIR further information about the country-specific CO <sub>2</sub> EF for the use of solid fuels in manufacture of solid fuels and	Resolved. The information is provided in NIR chapters 3.2.9.1 and 3.2.9.2

<i>ID#</i>	<i>Issue and/or problem classification<sup>a,b</sup></i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
	solid fuels – CO <sub>2</sub> (29, 2014) Transparency	other energy industries	
E.8	1.A.3.b Road transportation – liquid fuels – N <sub>2</sub> O (30, 2014) Transparency	Include in the NIR more detailed information about different vehicle technologies and their shares in the road transportation sector in order to improve the transparency of reporting	Resolved. The information is provided in NIR chapter 3.2.17.1
E.9	1.A.3.e Other transportation – gaseous fuels – CO <sub>2</sub> (31, 2014) Transparency	Include detailed information to explain and justify the difference in the CO <sub>2</sub> IEF of the gaseous fuels used in different subcategories (road transportation and pipeline transport)	Resolved. The NIR provides sufficient clarifications on the difference of methodologies used in CRF categories 1.A.3.b and 1.A.3.e
E.10	1.B.1.a Coal mining and handling – solid fuels – CH <sub>4</sub> (32, 2014) Consistency*	Ensure time-series consistency for historical data used to estimate the emissions from solid fuels (underground mines)	Not resolved. The Party explained that information is provided in the NIR (pp. 116–119); however there is a discrepancy between the EF in the NIR and the actual EF used for underground mining activities. The issue is being investigated

IPPU

I.1	2.B.2 Nitric acid production – N <sub>2</sub> O (37, 2014) Transparency	Include in the NIR the information on the AD provided during the 2014 review and any further relevant information following the planned change in the data sources	Resolved. The description in the NIR clarifies the issues of the recommendation. AD are still collected through studies, and obtaining data from the EU ETS is in the improvement plan (chapter 10.4.2. of the NIR)
I.2	2.C.1 Iron and steel production – CO <sub>2</sub> (38, 2014) (54, 2013) Transparency*	Include information in the NIR on the changes in iron and steel processes	Not resolved. No new information was included in the NIR
I.3	2.C.3 Aluminium production – PFCs (46, 2014) Completeness*	Include in the NIR information justifying why the CO <sub>2</sub> , CH <sub>4</sub> and PFC emissions are reported as not occurring, together with an explanation of the ‘cover salts’ (fluxes) method	Not resolved. There is no description in the NIR of the process of aluminium production
I.4	2.E.1 Integrated circuit or semi-conductor – HFCs, PFCs and SF <sub>6</sub> (43, 2014) Transparency*	Identify the number of producers of semiconductors, add a description of the trend of F-gas emissions (reasons for the gaps in and cessation of the use of F-gases) and provide details of the method and EFs used	Addressing. The number of producers and details of the method and EFs are included. However, the trend description is still missing
I.5	2.F. Product uses as substitutes for ozone depleting substances – HFCs, PFCs and SF <sub>6</sub>	Consistently implement the new methods, data sources and EFs for the estimation of emissions from refrigeration and mobile air conditioning and transparently document the	Not resolved. F-gas emissions from domestic, industrial and transport refrigeration continue to be reported as “IE” in CRF table 2(II)B-Hs2. The

<i>ID#</i>	<i>Issue and/or problem classification<sup>a,b</sup></i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
	(40, 2014) Accuracy *	underlying information in the NIR, specifying, in particular, from which subcategories (domestic, commercial, industrial and transport refrigeration, mobile and stationary air conditioning) the emissions come and providing documentation on the AD sources, lifetimes and EFs used	emission calculation method has not changed, and the new model has not been used. Czechia informed the ERT that the new model is planned to be implemented for the next annual submission
I.6	2.F. Product uses as substitutes for ozone depleting substances – HFCs, PFCs and SF <sub>6</sub> (41, 2014) Accuracy*	Describe in the NIR how the percentage of the F-gases captured and the percentage of the F-gases emitted are identified and explain the storage of large amounts of F-gases practised in the country	Not resolved. In response to a question raised by the ERT during the review regarding the estimation of emissions from disposal of domestic refrigeration, Czechia explained that percentages of captured and emitted F-gases were estimated by a sectoral expert based on consultation with relevant companies and that the disposal of domestic refrigeration is partly performed by a foreign company
I.7	2.F. Product uses as substitutes for ozone depleting substances – HFCs, PFCs and SF <sub>6</sub> (42, 2014) Adherence to UNFCCC Annex I inventory reporting guidelines	Strengthen the QA/QC procedure before submitting the NIR and include in the NIR the relevant methodological information for the HFC estimates for foam blowing	Resolved. Methodological information is included in the NIR
I.8	2.G.2 SF <sub>6</sub> and PFCs from other product use – HFCs, PFCs and SF <sub>6</sub> (44, 2014) Transparency*	Justify the trend in the emissions of SF <sub>6</sub> from stocks for sound-proof windows in the NIR	Not resolved. The trend is not explained in the NIR
I.9	2.G.2 SF <sub>6</sub> and PFCs from other product use – HFCs, PFCs and SF <sub>6</sub> (45, 2014) Completeness*	Further investigate any possible other uses of SF <sub>6</sub> (military, scientific or other), and, if they occur, estimate and report these emissions to ensure completeness of the estimates	Not resolved. One more category is included; however, no information is given as to whether investigations have been carried out
<b>Agriculture</b>			
A.1	3. General (agriculture) (48, 2014) Adherence to UNFCCC Annex I inventory reporting guidelines	Reallocate all information concerning recalculations, report it in the category-specific subchapters of the NIR and clearly distinguish the recalculations of the current annual submission from recalculations made during previous annual submissions	Resolved. Czechia has clearly described category improvements for the annual submission

<i>ID#</i>	<i>Issue and/or problem classification<sup>a,b</sup></i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
A.2	3. General (agriculture) (49, 2014) Adherence to UNFCCC Annex I inventory reporting guidelines	Enforce the sector-specific QA/QC analysis and report on the category-specific checks and results in the category-specific subchapters of the NIR	Not resolved. Czechia has not implemented category-specific QA/QC or described category-specific procedures. QA/QC is described only in chapter 5.1.3 of the NIR
A.3	3.A Enteric fermentation – CH <sub>4</sub> (52, 2014) Consistency*	Correct the erroneous reporting of the values for body weights in the NIR and transparently describe how time-series consistency is assured in the relevant subchapter of the NIR	Not resolved. Body weight errors are resolved in table 5-4. Time-series consistency of the change in the definition of calves is not resolved (this affects NIR tables 5-4, 5-5 and 5-6)
A.4	3.B Manure management – CH <sub>4</sub> (57, 2014) Transparency*	Improve transparency of the reporting within the category for non-dairy cattle	Resolved. VS is now included for non-dairy cattle
A.5	3.B Manure management – CH <sub>4</sub> (57(a), 2014) Adherence to UNFCCC Annex I inventory reporting guidelines	Consistently report the distribution of AWMS across all emission categories in the NIR as well as in CRF tables 4.B(a) and 4.B(b)	Resolved. The NIR and the CRF tables are consistent on AWMS distribution
A.6	3.B Manure management – CH <sub>4</sub> (57(b), 2014) Transparency*	Provide the data used to estimate the weighted EF for non-dairy cattle on an animal subcategory level in the NIR, including livestock population statistics, body weight, excretion of VS, B <sub>0</sub> and animal waste management system allocation	Not resolved. Czechia has provided only the weighted average statistics for non-dairy cattle in the NIR. Only body weight is resolved (table 5-4). Livestock population statistics, excretion of VS, B <sub>0</sub> and AWMS allocation are not disaggregated by subcategory
A.7	3.B Manure management – CH <sub>4</sub> (57(c), 2014) Transparency*	Provide in the NIR all background information on the development of agricultural policies and structures that support the trends in AWMS allocation	Addressing. Czechia has provided some policy information in chapter 5.2.2 (p. 192) of the NIR but has not provided the year(s) of the policies that support the trends
A.8	3.B Manure management – CH <sub>4</sub> (57(d), 2014) Consistency	Ensure time-series consistency of the estimates	Resolved. Czechia reports time series for dairy/non-dairy cattle AWMS distribution in table 5-15. It has recalculated AWMS distribution for non-dairy cattle in the NIR. The ERT did not identify any issues with the time series
A.9	3.B Manure management – CH <sub>4</sub>	Include data on weight, B <sub>0</sub> and VS for dairy and non-dairy cattle in CRF tables 4.A and	Resolved. Czechia now includes weight, B <sub>0</sub> and VS for dairy and

<i>ID#</i>	<i>Issue and/or problem classification<sup>a,b</sup></i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
	(58, 2014) Transparency	4.B(a)	non-dairy cattle in CRF table 3.B(a)
A.10	3.D.a Direct N <sub>2</sub> O emissions from managed soils – N <sub>2</sub> O (61, 2014) (67, 2013) Not an issue	Enhance the explanations for this category, among other ways by including the information on parameters related to crop residues and nitrogen-fixation (crop yields, Fra <sub>CDM</sub> , Fra <sub>CNCRO</sub> , Fra <sub>CNCRBF</sub> , Res/Crop)	No longer relevant. New methods and parameters for crop residues are provided in the 2006 IPCC Guidelines and Czechia has used these IPCC methods and parameters
A.11	3.D.a Direct N <sub>2</sub> O emissions from managed soils – N <sub>2</sub> O (62, 2014) Transparency	Increase the transparency of reporting of N <sub>2</sub> O emissions from sewage sludge in the NIR by clearly stating where the emissions are reported and for what reason	Resolved. Czechia now discusses emissions from sewage sludge in NIR chapter 5.4.2.2 (p. 202)
A.12	3.D.a Direct N <sub>2</sub> O emissions from managed soils – N <sub>2</sub> O (62, 2014) (80, 2012) Comparability*	Consider reporting separately N <sub>2</sub> O emissions from sewage sludge used as fertilizer in agriculture under the category agricultural soils	Resolved. Czechia now includes sewage sludge in CRF table 3.D and NIR chapter 5.4.2.2 (p. 202)
A.13	3.D.b Indirect N <sub>2</sub> O emissions from managed soils – N <sub>2</sub> O (63, 2014) (68, 2013) Transparency*	Improve reporting of indirect emissions from soils and harmonize the reporting of ammonia emissions to different international bodies	Not resolved. Czechia has not included any information on harmonization of the reporting of ammonia emissions to international bodies such as the Convention on Long-range Transboundary Air Pollution of the United Nations Economic Commission for Europe
<b>LULUCF</b>			
L.1	4. General (LULUCF) (69, 2014) (72, 2013) (87, 2012) Accuracy*	Develop country-specific reference carbon stocks values/change factors (e.g. F <sub>LU</sub> , F <sub>MG</sub> , F <sub>I</sub> ) associated with the tillage and input regimes for the estimates of carbon stock changes in mineral soils	Addressing. The situation is improving. Czechia has elaborated a national value for F <sub>MG</sub> and continues to work on the development of the remaining coefficients
L.2	4.A.1 Forest land remaining forest land – CO <sub>2</sub> (71, 2014) (76, 2013) (90, 2012) Completeness*	Use the results of the next NFI, when they are available, to estimate the carbon stock changes in the dead organic matter pool	Addressing. Czechia continues to use tier 1 to estimate carbon stock changes in dead organic matter (i.e. assuming that net carbon stock changes do not occur) and this category continues to be identified as key, so a higher tier is required. The ERT noted that the next NFI is still not available as of the review  During the review, Czechia informed the ERT that the category 4.A.1 is a key category due to

ID#	Issue and/or problem classification <sup>a,b</sup>	Recommendation made in previous review report	ERT assessment and rationale
			changes in above-ground biomass, not because of changes in DOM, and applying higher-tier methods for changes in DOM is not fully relevant
L.3	4.A.2 Land converted to forest land – CO <sub>2</sub> (72, 2014) (78, 2013) (92, 2012) Transparency*	Either estimate the carbon stock changes in land converted to forest land by collecting information on the area of young forest stands affected by natural disturbances, or provide transparent information substantiating the assumption that areas of younger age classes of forests are not affected by natural disturbances	Resolved  Paragraph 5 on page 225 (4.A.2 LF) of the NIR states that national statistics are available to prove the non-existence of natural disturbances in young stands
L.4	4.A.2 Land converted to forest land – CO <sub>2</sub> (73, 2014) (79, 2013) (93 and 115, 2012) Accuracy*	Revise the biomass increment value for above-ground biomass in land converted to forest land once the information from the ongoing NFI becomes available	Addressing. Czechia continues to use area weights for the main tree species, which could potentially lead to underestimation or overestimation of the mean biomass increment for land converted to forest land, depending on species composition, because increment values differ significantly. The NFI data are not available yet
Waste			
W.1	5. General (waste) (76, 2014) (87, 2013) Adherence to UNFCCC Annex I inventory reporting guidelines	More strictly apply verification and QA/QC procedures	Resolved. The inconsistencies found in the previous reviews between the NIR and the CRF tables were corrected
W.2	5.A Solid waste disposal on land – CH <sub>4</sub> (78, 2014) (84, 2013) Transparency*	Improve the transparency of the inventory and include this information, together with a description of the national legislation concerning landfill management practices, in the NIR	Not resolved. The Party used the methane conversion factor of 1.0 for the entire time series of 1990–2014 for managed waste disposal sites. The Party has explained in previous reviews that in Czechia waste legislation had been established before the European Union landfill directive, and management conditions of landfills had been gradually improving even before 1990. However, it has not included this information in the NIR
W.3	5.A Solid waste disposal on land – CH <sub>4</sub>	Improve the transparency of the inventory and include in the NIR waste composition data,	Addressing. The NIR does not include information on waste

<i>ID#</i>	<i>Issue and/or problem classification<sup>a,b</sup></i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
	(79, 2014) (85, 2013) Transparency*	including the degradable organic carbon values, for all years	composition for the years 1950–1989
W.4	5.A Solid waste disposal on land – CH <sub>4</sub> (79, 2014) Transparency*	Update the information on waste composition	Not resolved. The NIR still does not include information on waste composition for the years 1950–1989
W.5	5.C.1 Waste incineration – CO <sub>2</sub> , CH <sub>4</sub> and N <sub>2</sub> O (83, 2014) (91, 2013) Transparency*	Improve the transparency of the inventory and include in the NIR information regarding the decreasing trend of waste incinerated	Addressing. The Party included the explanation that the decreasing trend of waste incineration is due to energy recovery. However, the trend of waste incineration is not decreasing incineration, it is decreasing emissions from incineration without energy recovery. The Party needs to include more information to make this clear
W.6	5.D Wastewater treatment and discharge – N <sub>2</sub> O (81, 2014) Accuracy	Use the latest available FAO data for the value of protein consumption per capita per year	Resolved. The Party has used the latest available FAO data
<b>KP-LULUCF</b>			
KL.1	General (KP-LULUCF) – CO <sub>2</sub> (86, 2014), (93, 2013) Transparency*	Report the correct notation key “NR” (not reported) in CRF table NIR-1 for the dead wood pool, which is reported as “NO” (not occurring) in CRF table 5(KP-I)B.1	Not resolved. As for forest management, the notation key “R” (reported) is used to indicate that an effort was made to assess the changes in the dead wood pool, which resulted in the reported (hence “R”) conclusion of adopting the assumption of zero changes. The ERT noted that Czechia intends to revise the estimates for dead organic matter with the expected new NFI data, which will make this issue irrelevant
KL.2	Deforestation – CO <sub>2</sub> (87 and 89, 2014) (94, 97 and 98, 2013) Accuracy*	Improve the tracking of deforested lands, including information on subsequent land-use changes and the management practices applied to them in order to enhance the accuracy of the reporting, once information from the NFI becomes available	Addressing. Czechia informed the ERT that it will improve the reporting accuracy by using the information from the NFI when available  During the review, Czechia informed the ERT that tracking deforested lands is a task that is linked to the Czech land-use representation and land-use change

<i>ID#</i>	<i>Issue and/or problem classification<sup>a,b</sup></i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
			identification system based on the Czech cadastral system of land use administered by the Czech Office for Surveying, Mapping and Cadastre (COSMC), which is a full digitalization of the system planned to be finalized in early 2018. This will further increase the accuracy of the spatial assessment and tracking of land-use areas, including deforested land, and it is more useful for this issue than NFI data

*Abbreviations:* AD = activity data, AWMS = animal waste management system, B<sub>0</sub> = methane producing potentials, CMP = Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, CRF = common reporting format, EF = emission factor, ERT = expert review team, EU ETS = European Union Emissions Trading System, FAO = Food and Agriculture Organization of the United Nations, F-gas = fluorinated gas, Frac<sub>CDM</sub>, Frac<sub>NCR0</sub>, Frac<sub>NCRBF</sub>, Res/Crop = parameters related to crop residues and nitrogen-fixation, 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, VS = volatile solids, 2006 IPCC Guidelines = *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

<sup>a</sup> 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.

<sup>b</sup> 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 Czechia, and have not been addressed by the Party.

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

<i>ID#<sup>a</sup></i>	<i>Previous recommendation for the issue identified</i>	<i>Number of successive reviews issue not addressed</i>
<b>General</b>		
	No such general issues were identified	
<b>Energy</b>		
E.2	Provide a full elaboration of the method of expert judgment used to improve the uncertainty values	3 (2013–2015)



<i>ID#<sup>a</sup></i>	<i>Previous recommendation for the issue identified</i>	<i>Number of successive reviews issue not addressed</i>
IPPU		
I.2	Include information on the changes in iron and steel processes in the NIR	3 (2013–2015)
Agriculture		
A.13	Improve the reporting of indirect emissions from soils and harmonize the reporting of ammonia emissions to different international bodies	3 (2013–2015)
LULUCF		
L.1*	Develop country-specific reference carbon stock values/change factors associated with the tillage and input regimes for the estimates of mineral soils carbon stock change	4 (2012–2015)
L.2*	Use the results of the next NFI, when they are available, to estimate the carbon stock changes in the dead organic matter pool	4 (2012–2015)
L.4*	Revise the biomass increment value for land converted to forest land once the information from the ongoing NFI becomes available	4 (2012–2015)
Waste		
W.2	Improve the transparency of the inventory presenting the waste composition data, including the degradable organic carbon values, for all years in the NIR	3 (2012–2015)
W.3	Improve the transparency of the inventory and include in the NIR waste composition data, including the degradable organic carbon values, for all years	3 (2013–2015)
W.5	Improve the transparency of the inventory and include in the NIR information regarding the decreasing trend of waste incinerated	3 (2013–2015)
KP-LULUCF		
KL.1*	Report the correct notation key “NR” (not reported) in CRF table NIR-1 for the dead wood pool, which is reported as “NO” (not occurring) in CRF table 5(KP-I)B.1	3 (2013–2015)
KL.2*	Improve the tracking of deforested lands, including information on subsequent land-use changes and the management practices applied to them, in order to enhance the accuracy of the reporting, once information from the NFI becomes available	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, NIR = national inventory report.

<sup>a</sup> 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 Czechia that are additional to those identified in table 3.

Table 5

**Additional findings made during the 2015 technical review of the annual submission of Czechia<sup>a</sup>**

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding with recommendation or encouragement</i>	<i>Is finding an issue<sup>b</sup> and/or a problem<sup>c</sup>? If yes, classify by type</i>
General			
G.10	Inventory management	<p>Chapter 1 of the NIR (and in particular chapter 1.2.1 “Institutional, legal and procedural arrangements”) presents information on the institutions that are involved in the NIS, and outlines some of the roles and responsibilities within the inventory team. However, the ERT considers the information presented to be limited in transparency – particularly with regard to explaining the way in which the emissions inventory team is organized and managed. During the review, in response to a question raised by the ERT, the Party provided an organizational chart of the institutes involved in the emissions inventory compilation, and explanation on the chart</p> <p>The ERT recommends that the Party include an organizational chart of the institutes involved in the emissions inventory compilation, and explanation on the chart</p>	Yes. Transparency*
G.11	Key category analysis	<p>Annex 1 to the NIR presents the key category analysis; the ERT noted that key categories are identified up to (but not including) the category that steps over the 95% threshold, and that this is not in line with the approach presented in the 2006 IPCC Guidelines (vol. 1, chapter 4). In response to a question raised during the review week, the Party acknowledged that this was not the correct approach to the key category analysis, and committed to undertaking the key category analysis correctly in future years</p> <p>The ERT recommends that the Party provide in its NIR a key category analysis which is prepared in accordance with the 2006 IPCC Guidelines</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
G.12	Key category analysis	<p>The ERT has investigated the data used for the key category analysis and uncertainty analysis, and in particular the base year. While Czechia’s base year for F-gases is defined as 1995 for reporting under the Kyoto Protocol, for the purposes of reporting under the Convention (and hence the key category analysis and uncertainty analysis), the base year is defined as 1990 for all gases.</p> <p>The ERT recommends that the Party use 1990 for the base year for the key category analysis and uncertainty analysis</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
G.13	Uncertainty analysis	<p>Annex 2 to the NIR presents the uncertainty analysis. The ERT noted that for all categories included in categories 4.A–4.G, the AD uncertainty is presented as zero, with no accompanying explanation. In response to a question raised during the review week, the Party explained that the uncertainty reported for the EF represents an overall uncertainty for the relevant sources</p> <p>The ERT recommends that the Party include explanatory information on the source of the</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue <sup>b</sup> and/or a problem <sup>c</sup> ? If yes, classify by type
		uncertainty values for EFs in chapter 1.6 of and annex 2 to the NIR in future submissions	
G.14	Kyoto Protocol units	<p>The ERT noted that the SIAR pointed out that Czechia did not report information on a change to the measures ensuring the integrity of data storage and the recovery of registry services in the event of a disaster, in accordance with decision 15/CMP.1, annex, paragraph 32(i). More specifically the Party has not submitted an additional disaster recovery plan in line with document FCCC/SBI/2015/10</p> <p>The ERT reiterates the recommendation of the SIAR that the Party include a disaster recovery plan in line with document FCCC/SBI/2015/10</p>	Yes. Transparency*
G.15	Commitment period reserve	<p>Section 12.5 of the NIR reports the CPR as 989 205 565 t CO<sub>2</sub> eq, which is eight times higher than in the most recently reviewed inventory. However, the ERT noted this value is higher than 90% of the assigned amount (468 463 683 t CO<sub>2</sub> eq). Further, in the response to the list of potential problems, Czechia reported the CPR at 495 463 683 as 90% of the assigned amount (520 515 203 t CO<sub>2</sub> eq). The ERT noted this calculation is wrong and considers that it should be 468 463 683 t CO<sub>2</sub> eq</p> <p>The ERT recommends that Czechia calculate and report its CPR correctly. The ERT further recommends that Czechia conduct QA/QC procedures on the reporting elements under the Kyoto Protocol</p>	Yes. Transparency*
Energy			
E.11	1.A. Fuel combustion – sectoral approach – solid fuels – N <sub>2</sub> O	<p>In chapters 3.2.7.1, 3.2.9.1 and 3.2.10.1 of the NIR it is reported that for the emission estimates of N<sub>2</sub>O emissions from solid fuels a default N<sub>2</sub>O EF of 1.4 kg/TJ has been applied. The ERT informed the Party that the 2006 IPCC Guidelines provide a revised default N<sub>2</sub>O EF for solid fuels of 1.5 kg/TJ (vol. 2, tables 2.2–2.5). During the review, the Party informed the ERT that the EF used is country-specific, resulting from preliminary research on emission sources, which led to the conclusion that this EF is lower than the default EF. Further research will be conducted and, in case no reliable justification for this EF is found, the default EF will be used in the next annual submission. The ERT considers that the documentation of the country-specific EF is insufficient and there is an underestimate of the emissions for the full time series, including 2013 and 2014. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT</p> <p>In response to this list, the Party submitted revised N<sub>2</sub>O emissions for solid fuels for all relevant subcategories under categories 1.A.1, 1.A.2 and 1.A.4 with the default EF from the 2006 IPCC Guidelines. The ERT accepts the Party's response and considers that the issue has been resolved</p>	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue <sup>b</sup> and/or a problem <sup>c</sup> ? If yes, classify by type
E.12	1.A.1.a Public electricity and heat production – other fossil fuels – CH <sub>4</sub>	<p>The ERT recommends that the Party update the text in its NIR to document the application of the default EF of 1.5kg/TJ for solid fuels</p> <p>The NIR (chapter 3.2.7.1) states that emission estimates for alternative fuels (MSW) in CRF category 1.A.1.a are calculated using the default EFs in the 2006 IPCC Guidelines (all gases). Since the NIR provides a default EF for CH<sub>4</sub> of 0.0208 kg/TJ, which is significantly lower than the 2006 IPCC Guidelines (vol. 2, table 2.2) default value of 30 kg/TJ, the ERT requested more information on the source of the applied CH<sub>4</sub> EF. The Party replied that it is the default IPCC factors for waste incineration from the waste sector (vol. 5, table 5.3). Additionally, the Party explained that all waste incineration plants in this source category are continuous stoker incinerators. The ERT notes, however, that according to the 2006 IPCC Guidelines (vol. 5, chapter 5.4.2), “for continuous incineration of MSW and industrial waste, it is good practice to apply the CH<sub>4</sub> EFs provided in Volume 2, Chapter 2, Stationary Combustion”. The ERT concluded that there was a potential underestimation of CH<sub>4</sub> emissions for this category in the entire time series, including 2013 and 2014. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT. In response to this list, the Party submitted revised estimates for CH<sub>4</sub> emissions on 20 October 2016. The Party also provided the calculation worksheet. The ERT considers that the revised emission estimates for CH<sub>4</sub> provided by the Party in the calculation worksheet are according to the recommendation and in line with the 2006 IPCC Guidelines (Czechia used the default EF of 30 kg/TJ). However, those values are not reflected exactly in the official CRF tables submitted on 20 October 2016; therefore, the issue has not been resolved. Differences between revised estimates in the worksheet and reported values in the CRF tables are 0.17–1.81 kt CO<sub>2</sub> eq or 0.0001–0.0014% of national total GHG emissions. Those are below the insignificance thresholds of the adjustment (500 kt CO<sub>2</sub> eq or 0.05% of national total GHG emissions), according to decisions 22/CMP.1, annex, paragraph 80(b), and 4/CMP.11. Therefore, the ERT decided to provide a recommendation instead of conducting an adjustment</p> <p>The ERT recommends that the Party calculate and report CH<sub>4</sub> emissions in its submission applying the default EFs from the 2006 IPCC Guidelines of 30 kg/TJ or other EF in accordance with the 2006 IPCC Guidelines EF selection for table 2</p>	Yes. Accuracy*
E.13	1.A.1.a Public electricity and heat production – other fossil fuels – CO <sub>2</sub> and N <sub>2</sub> O	<p>The NIR (chapter 3.2.7.1) states that emission estimates for alternative fuels (MSW) in CRF category 1.A.1.a are calculated using the default EFs in the 2006 IPCC Guidelines (all gases). Since the NIR provides a default EF for CO<sub>2</sub> of 145.1 t/TJ, which is significantly higher than the 2006 IPCC Guidelines (vol. 2, table 2.2) default value of 91.7 t/TJ (for N<sub>2</sub>O the applied value is 5.208 kg/TJ and the default value is 4 kg/TJ), the ERT is of the opinion that this is a potential overestimation in the base year. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT</p>	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue <sup>b</sup> and/or a problem <sup>c</sup> ? If yes, classify by type
E.14	1.A.1.b Petroleum refining – liquid fuels – N <sub>2</sub> O	<p>In response to this list, the Party submitted revised CO<sub>2</sub> and N<sub>2</sub>O emissions from this category with default EFs from the 2006 IPCC Guidelines. The ERT accepts the Party's response and considers that the issue has been resolved</p> <p>The ERT recommends that the Party update the text in its NIR to document the application of the default EFs of 91.7 kg/TJ for CO<sub>2</sub> emissions and 4 kg/TJ for N<sub>2</sub>O emissions for alternative fuels (MSW)</p> <p>The NIR (chapter 3.2.8.1) states that a default N<sub>2</sub>O EF of 0.6 kg/TJ for refinery gas has been used. However, the ERT noted that the default EF from the 2006 IPCC Guidelines (vol. 2, table 2.2) is 0.1 kg/TJ. During the review, the Party clarified that the applied EF for N<sub>2</sub>O is country-specific and was based on preliminary research of two refineries. The ERT requested additional supporting documentation (e.g. reports or results of measurements) that could justify this assumption. The Party replied that the decision to use the EFs was made based on personal communications in 2015, but it was not able to obtain any relevant documentation. The Party also indicated that this issue will be further discussed with representatives of refineries and, if no reliable justification for this EF is found, the Party will use the default EF provided by the 2006 IPCC Guidelines in the next annual submission. The ERT considers that there is a potential overestimation of the emissions in the base year. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT</p> <p>In response to this list, the Party submitted revised N<sub>2</sub>O emissions from this category with the default EF from the 2006 IPCC Guidelines. The ERT accepts the Party's response and considers that the issue has been resolved</p> <p>The ERT recommends that the Party update the text in its NIR to document the application of the default EF of 0.1 kg/TJ for N<sub>2</sub>O emissions</p>	Yes. Transparency*
E.15	1.A.2.f Non-metallic minerals – other fuels – CH <sub>4</sub> and N <sub>2</sub> O	<p>The NIR (chapter 3.2.15.2) states that the IPCC default EFs for CH<sub>4</sub> and N<sub>2</sub>O have been applied for the emission estimates for alternative fuels used in the cement industry. NIR table 3-18 provides the values of 10 kg/TJ and 3 kg/TJ for CH<sub>4</sub> emissions and 1.4 kg/TJ and 0.6 kg/TJ for N<sub>2</sub>O emissions from solid and liquid fuels, respectively. During the review, the ERT informed the Party that the default EFs of the 2006 IPCC Guidelines (vol. 2, table 2.3.) are 30 kg/TJ and 4 kg/TJ for CH<sub>4</sub> and N<sub>2</sub>O emissions, respectively, applicable for municipal waste (non-biomass fraction), industrial waste, waste oils and other non-fossil fuels – municipal waste (biomass fraction). The Party clarified that the CH<sub>4</sub> and N<sub>2</sub>O EFs used are country-specific values, which were based on information provided by the Czech Cement Association. Following the ERT request for supporting documentation (e.g. reports or results of measurements) that could justify the assumption of the Czech Cement Association, the Party replied that the decision to use the EFs were made based on personal communications and that relevant documentation was expected to be made available by the</p>	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue <sup>b</sup> and/or a problem <sup>c</sup> ? If yes, classify by type
		<p>end of 2015, but no such documentation has yet been provided. The ERT considered that if no reasonable justification for the currently applied EFs is provided, there is a potential underestimation of emissions for this category for the entire time series, including 2013 and 2014. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT</p> <p>In response to this list, the Party submitted revised CH<sub>4</sub> and N<sub>2</sub>O emissions from this category using the default EFs from the 2006 IPCC Guidelines. The ERT accepts the Party's response and considers that the issue has been resolved</p> <p>The ERT recommends that the Party update the text in its NIR to document the application of the default EF of 30 kg/TJ and 4 kg/TJ for CH<sub>4</sub> and N<sub>2</sub>O emissions, respectively, for alternative fuels used in the cement industry</p>	
E.16	1.A.3.b Road transportation – liquid fuels – CO <sub>2</sub>	<p>The currently applied approach for estimating CO<sub>2</sub> emissions from fuel combustion corresponds to a tier 1 approach according to the 2006 IPCC Guidelines (vol. 2, chapter 3.2.1.1) owing to the use of a default CO<sub>2</sub> EF for gasoline and diesel fuel. Since road transportation is a key category, the use of a tier 2 approach, applying the same methodology, but with a country-specific carbon content of fuels, is necessary</p> <p>The ERT recommends that the Party use a tier 2 approach to estimate CO<sub>2</sub> emissions from liquid fuels in road transportation, applying a country-specific carbon content for fuels, since CO<sub>2</sub> emissions from road transportation (liquid fuels) is identified as a key category and so it is good practice to apply a tier 2 approach for the emission estimates</p>	Yes. Accuracy*
E.17	1.B.1.a Coal mining and handling – solid fuels – CH <sub>4</sub>	<p>The NIR (chapter 3.3.1.1) states that a default value of 1.64 kg CH<sub>4</sub>/t (the CRF tables for the years after 2008 list the value of 1.6415 kg CH<sub>4</sub>/t) has been applied for the emission estimates for post-mining activities for underground mines. According to the 2006 IPCC Guidelines, the default EF for post-mining activities for underground mines for CH<sub>4</sub> is 2.5 m<sup>3</sup>/t, and a default density of 0.67 kg/m<sup>3</sup> (this results in a default factor of 1.675 kg/t), which is 2% higher than the currently used EF. In addition, the IEF for this category shows an unstable trend: for the years 1990–2002 the values are lower (ranging from 1.53 kg CH<sub>4</sub>/t to 1.62 kg CH<sub>4</sub>/t) than the value used for the years 2003–2013 (1.64 kg CH<sub>4</sub>/t)</p> <p>Responding to a question raised by the ERT during the review week, the Party explained that the applied EF for the Ostrava-Karviná area (OKD) mines (table 3-28 of the NIR) is country-specific and it is different from the EF that has been used for the other mines (50% of the value for OKD) in the country owing to different average mining depths. The ERT accepts this explanation regarding the varying trend. However, the Party did not provide additional documentation on the country-specific EF for the OKD mines; therefore the ERT considers that there is a potential underestimation of the emissions for the full time series, including 2013. Therefore, the ERT included this issue in</p>	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue <sup>b</sup> and/or a problem <sup>c</sup> ? If yes, classify by type
E.18	1.B.1.a Coal mining and handling – solid fuels – CH <sub>4</sub>	<p>the list of potential problems and further questions raised by the ERT. In response to this list, the Party submitted revised CH<sub>4</sub> emissions from this category with a default EF from the 2006 IPCC Guidelines of 1.675 kg/t for CH<sub>4</sub> emissions (average) for post-mining activities in underground mines. The ERT accepts the Party's response and considers that the issue has been resolved</p> <p>The ERT recommends that the Party update the text in its NIR to document the application of the default EF of 1.675 kg/t for CH<sub>4</sub> emissions from post-mining activities for underground mines</p> <p>The NIR (chapter 3.3.1.1) reports the use of a default EF of 0.77 kg CH<sub>4</sub>/t (the CRF tables list the value of 0.7705 kg CH<sub>4</sub>/t) for mining activities in surface mines. According to the 2006 IPCC Guidelines, the default average EF for mining activities in surface mines for CH<sub>4</sub> is 1.2 m<sup>3</sup>/t, with a default density of 0.67 kg/m<sup>3</sup> (this results in a default factor of 0.804 kg/t), which is higher than the currently applied value. During the review, the Party explained that the majority of surface mining is from the seams of lignite in northern Bohemia. These seams had proved to have a very low occurrence of CH<sub>4</sub> and there had been no explosions or fires, even when deep mining was occurring. For this reason, the default EF for surface mining has been lowered by approximately 5%. During the review, the ERT noted that the 2006 IPCC Guidelines provide some guidance on how to choose the EFs for this category based on the average overburden depths. In response to a request for additional information, the Party explained that the average overburden depths for four of the mines varies from 120 to 200 m. Based on the information, the Party considered the 5% lowering of the default average IPCC value to be appropriate. According to the 2006 IPCC Guidelines (vol. 2, chapter 4.1.4.2), it is good practice to use the low end of the specific emission range for those mines with average overburden depths of less than 25 m and the high end for overburden depths over 50 m. For intermediate depths, average values for the EFs may be used. Since the Party's justification for applying a 5% reduction of the default average EF was based on the average overburden depth of the mines, which is significantly higher than 50 m, the ERT considers that there is a potential underestimation of the emissions for the entire time series, including for 2013 and 2014. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT. In response, the Party submitted revised CH<sub>4</sub> emissions from this category using the CH<sub>4</sub> EF from the 2006 IPCC Guidelines of 1.34 kg/t (high range, vol. 2, chapter 4.1.4.1), applicable for overburden depths over 50 m. The ERT accepts the Party's response and considers that the issue has been solved</p> <p>The ERT recommends the Party update the text in its NIR to document the application of the default EF of 1.34 kg/t for CH<sub>4</sub> emissions from mining activities in surface mines</p>	Yes. Transparency*
E.19	1.B.2.a Oil – liquid fuels – all gases	<p>The NIR (chapter 3.3.2.2.1) states that oil exploration is “not systematically performed”. The 2006 IPCC Guidelines provide separate EFs for oil exploration related to well drilling, well testing and well servicing in Gg per 10<sup>3</sup> m<sup>3</sup> of total oil production, which should be applicable even if the oil</p>	Yes. Completeness*



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		<p>exploration activities are not very intensive. The ERT asked the Party to provide the rationale for not including those activities in the estimates of the emissions from oil exploration and reporting the emissions from this activity as “NO” (not occurring). The Party clarified that oil exploration is practically not performed at all – there was one drill for a couple of years, and for this reason it does not consider the exploration to be operational. The Party indicated that, in accordance with decision 24/CP.19, such negligible emissions do not have to be reported</p> <p>During the review, Czechia informed the ERT that the Party will consider using “NE” in future submission in line with current IPCC methodology</p> <p>The ERT recommends that Czechia change the notation key for oil exploration to “NE” (not estimated) and indicate in both the NIR and the CRF completeness table why those emissions or removals have not been estimated. The ERT also recommends that the Party provide in the NIR a justification for the exclusion in terms of the likely level of emissions in accordance with paragraph 37(b) of the UNFCCC Annex I reporting guidelines</p>	
E.20	Fuel combustion – reference approach	<p>Following previous encouragement (see document FCCC/ARR/2014/CZE, para. 24) to improve the transparency of the comparison between the approaches provided in the NIR, including explanations of the differences, the ERT requested additional clarification on the significant differences in CO<sub>2</sub> emissions for some of the years (notably 1990 and 2004: 4.44% and –4.68%, respectively). The Party provided several clarifications on the possible reasons for the differences, including difficulties with the allocation of the energy consumption for some particular plants between Czechia and Slovakia, significant statistical differences for solid fuels and others.</p> <p>In order to improve transparency, the ERT recommends that Czechia provide an explanation of the differences in CO<sub>2</sub> emissions between the reference and the sectoral approaches when they are higher than 2% in its next NIR</p>	Yes. Transparency*
IPPU			
I.10	2.A.4 Other process uses of carbonates – CO <sub>2</sub>	<p>The ERT noted that Czechia reports “NO” for CO<sub>2</sub> emissions from mineral wool production for the years 1990–2006 in NIR table 4-6. According to the websites<sup>d</sup> of mineral wool producing companies, such production occurred at the beginning of the time series in Czechia. The ERT considers that this issue should be considered further in future reviews to confirm that there is not an underestimate of emissions</p> <p>The ERT recommends that Czechia collect the missing data on mineral wool production and estimate and report CO<sub>2</sub> emissions</p>	Yes. Completeness*
I.11	2.B.7 Soda ash	<p>The ERT noted possible missing estimations in the inventory of Czechia, for example for emissions from soda ash production. The ERT considers that this issue should be considered further in future</p>	Yes. Completeness*

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	production – CO <sub>2</sub>	<p>reviews to confirm there is not an underestimate of emissions</p> <p>The ERT recommends that Czechia undertake comprehensive surveys to ensure that possible emissions from soda ash production are covered in the national inventory for the whole time series in order to ensure the consistency and completeness of the time series, and report the outcome of the studies in the next inventory submission</p>	
I.12	2.C Metal industry – CO <sub>2</sub> and CH <sub>4</sub>	<p>The ERT noted that Czechia reports “NE” for the AD and CO<sub>2</sub> and CH<sub>4</sub> emissions from ferroalloys production for the years 2004–2007 (the Party reported emissions for 1990–2006 and “C” for 2008–2014) and “NE” for the AD and CO<sub>2</sub> emissions from zinc production for the years 1990–2007 (for 2008–2014, the Party reported “C”)</p> <p>To ensure the completeness of the time series, the ERT recommends that Czechia include the AD and CO<sub>2</sub> and CH<sub>4</sub> emissions from ferroalloys production and from zinc production or report them as “NO” if there is no production of ferroalloys or zinc in the periods mentioned</p>	Yes. Completeness*
I.13	2.C.3 Aluminium production – PFCs and CO <sub>2</sub>	<p>Czechia reports emissions of CO<sub>2</sub> and indirect GHGs and SO<sub>2</sub> from aluminium production as “NO”. In response to a question raised by the ERT during the review, Czechia informed the ERT that there is no primary aluminium production in the country and the emissions are from secondary production</p> <p>The ERT recommends that Czechia report CO<sub>2</sub> and PFC emissions from secondary aluminium production in the correct category (2.C.7 Other) to ensure comparability among Parties, and indicate in its NIR that primary aluminium production does not occur in the time series since 1990</p>	Yes. Comparability*
I.14	2.C.5 Lead production – CO <sub>2</sub>	<p>Czechia reports CO<sub>2</sub> emissions from secondary lead production. The ERT noted that the EF (0.52 t CO<sub>2</sub>/t lead, from the 2006 IPCC Guidelines) used to calculate emissions is incorrect because it is the EF for primary lead production; the EF for secondary lead production (0.2 t CO<sub>2</sub>/t lead) should be used. The ERT noted that it leads to overestimation of emissions for the whole time series, including the base year. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT</p> <p>In response to this list, Czechia submitted revised CO<sub>2</sub> emission estimates for the entire time series using the default IPCC EF for secondary lead production (0.2 t CO<sub>2</sub>/t lead). The ERT agreed with the estimates presented by Czechia and considers that the issue has been resolved</p> <p>The ERT recommends that the Party update the text in its NIR to document the application of the default EF of 0.2 t CO<sub>2</sub>/t lead for secondary lead production</p>	Yes. Transparency*
I.15	2.D.3 Other – non-energy products from fuels and	The ERT noted that Czechia reports CO <sub>2</sub> emissions from road paving with asphalt as “NE” and that there are no estimation methodologies available in the 2006 IPCC Guidelines	Not an issue

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	solvent use – all gases	The ERT encourages Czechia to enhance the transparency of its reporting	
I.16	2.F.1 Refrigeration and air conditioning – HFCs and PFCs	<p>In the NIR (chapter 4.7.2.1, p. 173) Czechia states that the methodology used in the calculation of refrigeration emissions from cars, air conditioners, etc. underestimates real emissions, as the information about marketed products already containing F-gases is not taken into account. In response to a question raised by the ERT during the review, Czechia explained that it is possible that the amount of F-gases in imported products is already included in ISPOP<sup>e</sup> and Custom Office data, but this is not confirmed by custom authorities. Czechia informed also that the new source of AD includes F-gases in imported products from countries outside the European Union and these data will be included in the next submission. The ERT considers that there may be an underestimation of these emissions and included this issue in the list of potential problems and further questions raised by the ERT</p> <p>In response to this list, Czechia submitted information on the AD used (Řeháček's AD) for the calculation of HFC and PFC emissions from refrigeration and mobile air conditioning, custom statistics (in consultation with the biggest importers) and ISPOP data that proved that F-gas emissions from imported products are already included in the estimations. The ERT agreed with the information presented by Czechia</p> <p>The ERT recommends that the Party provide in its NIR an explanation of Řeháček's AD, custom statics and ISPOP data in order to prove the completeness of the emission estimation</p>	Yes. Transparency*
I.17	2.G.2 SF <sub>6</sub> and PFCs from other product use – SF <sub>6</sub>	<p>The ERT noted possible missing estimations in the inventory of Czechia, for SF<sub>6</sub> emissions from the use of SF<sub>6</sub> in double-glazed sound-proof windows, which are reported as “NO”</p> <p>The ERT recommends that Czechia undertake comprehensive surveys to ensure that possible emissions from the use of SF<sub>6</sub> in double-glazed sound-proof windows are covered in the national inventory for the whole time series in order to ensure the consistency and completeness of the time series, and report the outcome of the studies in the next inventory submission</p>	Yes. Completeness*
Agriculture			
A.14	3. General (agriculture) – general	<p>The ERT found it difficult to locate information related to livestock characterization and emission parameters (e.g. GE, VS, Nex, and AWMS distribution). The current layout of the NIR makes it difficult to ascertain where the Party obtained the data for each parameter</p> <p>The ERT encourages the Party to restructure the NIR chapters for enteric fermentation and manure management and provide information on methods and background for GE, VS, Nex, and AWMS distribution grouped together instead of scattered throughout the chapter</p>	Not an issue

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A.15	3. General (agriculture) – general	<p>In the NIR, the Party sometimes provides past improvements in the category under the heading “uncertainty and time-series consistency”</p> <p>The ERT encourages the Party to ensure that the section on “uncertainty and time-series consistency” of the NIR is focused on only these topics</p>	Not an issue
A.16	3. General (agriculture) – general	<p>The ERT noted that there was a difference between the CRF tables and the NIR regarding ratio/percentages of agricultural emissions. Czechia reports that “73% of agricultural CH<sub>4</sub> emissions arose from enteric fermentation source category” (p. 186 of the NIR) and “compared to the cattle, the contribution of other farm animals to the whole CH<sub>4</sub> emissions from enteric fermentation is much smaller, only about 5.4%”. The ERT found a discrepancy between the reported ratio in the NIR and that in the CRF tables. The ERT believes the correct values are 78.57% and 4.4% based on CRF table 10s3 and 4.4 %, respectively. During the review, Czechia informed the ERT that this was owing to a discrepancy in the NIR that will be corrected in the next submission</p> <p>The ERT recommends that Czechia correct the identified discrepancy in the ratios in the NIR</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
A.17	3.A.1 Cattle – CH <sub>4</sub> and N <sub>2</sub> O	<p>The ERT found that the livestock characteristics of non-dairy cattle for enteric fermentation are not described transparently in the NIR, especially for GE, which affects the tier 2 EF for enteric fermentation</p> <p>The ERT recommends that the Party increase transparency by including some of the assumptions behind GE estimation in the NIR and a whole time series of GE values in order to explain the fluctuating EFs for dairy and non-dairy cattle. This is especially needed to increase transparency for non-dairy cattle and to help to explain fluctuations in EFs</p> <p>The ERT also recommends that the Party report the feeding situation and weighted pregnancy percentage in the CRF tables (not reported in the current submission) and explain the values in the NIR</p>	Yes. Transparency*
A.18	3.B Manure management – CH <sub>4</sub>	<p>In its submission, Czechia reports the use of a default EF for CH<sub>4</sub> emissions from manure management for swine of 6 g CH<sub>4</sub> kg/head/year without any explanation. In the 2006 IPCC Guidelines, table 10.14 lists two types of swine (market and breeding) and there are two temperature ranges (≤ 10–11°C) that have 6 g CH<sub>4</sub> kg/head/year for market swine in a cool climate region. During the review, Czechia clarified that its average annual temperature is lower than 10°C, and the default parameter was chosen for this temperature</p> <p>The ERT recommends that Czechia improve the transparency of the reporting of the EF used in the country and include in the NIR the information provided to the ERT during the review to improve the transparency of non-cattle livestock CH<sub>4</sub> EFs</p>	Yes. Transparency*

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A.19	3.B Manure management – CH <sub>4</sub>	<p>The ERT found that the Party did not include MCFs for cattle manure management systems in CRF table 3.B(a)s2. This is required for tier 2 reporting</p> <p>During the review, Czechia informed the ERT that:</p> <ol style="list-style-type: none"> <li>1) Default values for MCF factors for dairy and non-dairy cattle are used</li> <li>2) The MCF factor value will be filled in on CRF Reporter in the new submission period</li> <li>3) Methane emissions for swine are calculated by tier 1 procedures</li> <li>4) There are no relevant country-specific data available</li> </ol> <p>The ERT recommends that the Party include the MCFs for dairy and non-dairy cattle in CRF table 3.B(a)s2, and for swine if tier 2 methods are applied</p>	Yes. Transparency*
A.20	3.B Manure management – CH <sub>4</sub> and N <sub>2</sub> O	<p>The ERT found that the sources of data for AWMS distribution of non-cattle species are not transparently described in Czechia's NIR. During the review, the Party explained that this was based on expert judgment as the source of AWMS distribution of non-cattle species for all years</p> <p>The ERT recommends that the Party provide in its NIR transparent information on the sources of data for AWMS</p>	Yes. Transparency*
A.21	3.B Manure management – CH <sub>4</sub> and N <sub>2</sub> O	<p>The ERT noted that AWMS distribution for dairy cattle has not been updated since 2010 and for non-dairy cattle it has not been updated since 2011. These distribution ratios are based on expert judgment and it is not explained in the NIR</p> <p>The ERT recommends that the Party provide an explanation for the expert judgment on AWMS distribution not being updated after 2010 or 2011, and if necessary update these values to ensure time-series consistency</p>	Yes. Consistency*
A.22	3.B Manure management – N <sub>2</sub> O	<p>The ERT found that cattle Nex rates are significantly higher than the Nex rate calculated using default values from the 2006 IPCC Guidelines. Table 5-14 of the NIR states that the Nex rates for dairy cows are 112.34 kg/head/year in 1990 and 149.69 kg/head/year in 2014, and for non-dairy cattle they are 61.53 kg/head/year in 1990 and 73.58 kg/head/year in 2014. The ERT calculates Nex rates for dairy and non-dairy cattle for the Eastern European region using the values in tables 10A.1, 10A.2 and 10.19 of the 2006 IPCC Guidelines as 70.26 kg/head/year for dairy cattle and 63.88 kg/head/year for mature females. The reason why the Nex rates used by Czechia are higher than the values based on the default values of the 2006 IPCC Guidelines is not provided in the NIR. The ERT believes that this issue should be considered further in future reviews to confirm there is not an underestimate of emissions</p> <p>The ERT recommends that the Party investigate the reason why the Nex rates are higher than the rates that would be calculated using the default of the 2006 IPCC Guidelines and provide the</p>	Yes. Accuracy*

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		explanation in its NIR	
A.23	3.B Manure management – N <sub>2</sub> O	<p>The ERT attempted to replicate the calculation to ascertain Nex values for livestock other than cattle but found inconsistencies between the information provided in the NIR (table 5-16, p. 197, e.g. 20 kg/head/year for sheep) and the values reported in CRF table 3.B(b) (e.g. 15.2 kg N/head/year for sheep for 2014). During the review, the Party clarified that table 5-16 in the NIR was not updated. This value will be corrected in the next submission</p> <p>The ERT recommends that the Party correct the Nex values for livestock other than cattle in table 5.16 in the NIR and improve the QA/QC procedure for its reporting in the NIR and the CRF tables in order to avoid such inconsistencies between the NIR and the CRF tables</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
A.24	3.B.1 Cattle – CH <sub>4</sub>	<p>In table 5-11 of the NIR, the Party states that for cattle, it used an MCF from Daemmgen et al. (2012). The ERT found that the MCF for daily spreading on fields and pasture range and paddock are IPCC defaults for a cool climate</p> <p>The ERT recommends that the Party clarify which MCFs are derived from which source in its NIR</p>	Yes. Transparency*
A.25	3.B.3 Swine – CH <sub>4</sub>	<p>The ERT noted that CH<sub>4</sub> emissions from manure management for swine are 31.6% of total manure CH<sub>4</sub> emissions from manure management; however, the applied method for this subcategory is tier 1</p> <p>The ERT recommends that the Party consider swine a significant species for manure CH<sub>4</sub> emissions and apply a tier 2 method to estimate CH<sub>4</sub> from manure management for swine</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
A.26	3.B.5 Indirect N <sub>2</sub> O emissions – N <sub>2</sub> O	<p>The ERT noted that the Party states in its NIR that a tier 2 method is applied for this estimation in this category. The ERT found that the Party applied 30% of <math>Frac_{LEACH-MS}</math> in equation 10.28 in the 2006 IPCC Guidelines, but the guidelines state that the typical range of this parameter is 1–20%. During the review, the Party stated that it does not have any country-specific <math>Frac_{LEACH-MS}</math> parameters, and claimed that it will apply the correct notation key in CRF table 3B(b) in the next submission. The ERT considers that there is a potential overestimation of the emissions for the full time series, including the base year. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT</p> <p>In response, the Party provide revised estimates as “NE” because the Party does not have a country-specific <math>Frac_{LEACH-MS}</math>. The ERT considers that the overestimation in the base year has been solved, but noted that there is still a possible underestimation in the latest year</p> <p>The ERT believes that this issue should be considered further in future reviews to confirm there is not an underestimate of emissions, and recommends that the Party provide estimations for the whole time series to ensure that there is not an underestimation of emissions for the latest year</p>	Yes. Accuracy*

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A.27	3.D.a.4 Crop residues – N <sub>2</sub> O	<p>The ERT noted that Czechia has reported a Frac<sub>REMOVE</sub> value of 0.5 in the NIR. However, the ERT also noted that according to the 2006 IPCC Guidelines (p. 11.14): “Survey of experts in country is required to obtain data. If data for Frac<sub>REMOVE</sub> are not available, assume no removal”. Responding to a question raised by the ERT during the review week, the Party stated that: “The value 50% recommended by the previous IPCC methodologies as a default factor was revised by expert judgment and verify as a correct value in the Czech conditions”. The ERT concludes that the Party did not provide sufficient information justifying that the Frac<sub>REMOVE</sub> parameter is country-specific and that the use of defaults from the Revised 1996 IPCC Guidelines is not in accordance with the 2006 IPCC Guidelines. The ERT considers that there is a potential underestimation of the emissions for the full time series, including 2013 and 2014. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT</p> <p>In response to this list, the Party provided revised estimates applying Frac<sub>REMOVE</sub> as zero. The ERT confirmed that the estimation of N<sub>2</sub>O emissions is based on equation 11.6 of the 2006 IPCC Guidelines applying each crop type (grains, pulses, potatoes, sugar beets (tubers), N-fixing forage and soybeans) with the provided calculation worksheet, accepts the revised estimates and considers that the issue has been solved</p> <p>The ERT recommends that the Party update the text in the next NIR to document the application of Frac<sub>REMOVE</sub> as zero</p>	Yes. Transparency*
A.28	3.D.a.5 Mineralization/immobilization associated with loss/gain of soil organic matter – N <sub>2</sub> O	<p>The Party has reported emissions from nitrogen mineralization/immobilization associated with loss/gain of soil organic matter as “NO”. The ERT found that this is not consistent with the 2006 IPCC Guidelines, because the Party also reported a loss of soil carbon in cropland mineral soils (CRF table 4.B). The ERT considers that there is a potential underestimation of emission for the full time series, including 2013 and 2014. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT</p> <p>In response to this list, the Party provided the revised estimates applying equation 11.8 from the 2006 IPCC Guidelines. The ERT noted that the Party correctly reports carbon loss in mineral soils for the categories forest land converted to cropland and grassland converted to cropland in CRF table 4.B. The ERT further noted that F<sub>SOM</sub> is estimated using default R value (15) and N<sub>2</sub>O emissions are estimated with the default value EF<sub>1</sub> (0.01). The ERT accepts the revised estimates</p> <p>The ERT recommends that the Party update the text in the next NIR to document the application of equation 11.8 from the 2006 IPCC Guidelines and estimation of F<sub>SOM</sub> with the R value as 15 and EF<sub>1</sub> as 0.01</p>	Yes. Transparency*
A.29	3.D.b Indirect N <sub>2</sub> O emissions from	<p>During the review, the ERT requested that Czechia provide the calculation worksheet for indirect N<sub>2</sub>O from agricultural soils. The ERT noted that the Party was using methodologies different from</p>	Yes. Transparency*

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managed soils – N <sub>2</sub> O	<p>those of the 2006 IPCC Guidelines for both volatilization and leaching/run-off. The ERT also noted that the Party used the appropriate parameters and EFs for their calculation, but omitted several AD (e.g. sewage sludge, animal manure, organic fertilizer and crop residues). The ERT further noted that, in the calculation worksheet, the Party used different AD for 2014 than those reported in the CRF tables for 2014. The emissions from the calculation worksheet were reported in the CRF tables, resulting in an inconsistency between the reported AD and the reported emissions. The ERT considers that there is a potential underestimation for the full time series, including 2013. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT</p> <p>In response, the Party provided revised estimates applying equations 11.9 and 11.10 of the 2006 IPCC Guidelines for the whole time series and consistent AD across subcategories (e.g. animal manure applied to soils). The ERT accepts the estimates and considers that the issue has been resolved</p> <p>The ERT recommends that the Party update the text in the next NIR to document the application of equations 11.9 and 11.10 from the 2006 IPCC Guidelines and describe the method transparently in its NIR with the calculation worksheet provided as supplementary information</p>		
LULUCF			
L.5	4. General (LULUCF) – General	<p>The ERT notes that Czechia continues to report in CRF tables 4.A to 4.F areas of organic soils as “NO” except for category 4.A.1 forest land remaining forest land. In response to questions raised by the ERT during the review, the Party indicated that it has investigated the issue and discussed it with the experts of the Research Institute for Soil and Water Conservation. According to their information, there is approximately 20 kha organic soils located in Czechia. This corresponds well to the reported 18.6 kha of organic soils, which was estimated by the Party from the detailed forest typology maps. Czechia plans to revisit this issue once the overall digitalization of the cadastral system by the Czech Office for Surveying, Mapping and Cadaster is finalized (planned for early 2018)</p> <p>The ERT recommends that the Party report the correct area of organic soils in CRF tables 4.A to 4.F</p>	Yes. Comparability*
L.6	4.B.1 Cropland remaining cropland – General	<p>The ERT noted that the previous ERT encouraged the Party to develop country-specific reference carbon stock values/change factors associated with the tillage and input regimes. In response to questions raised by the current ERT during the review, the Party indicated that last year it started analysing the factors affected by the management regime on cropland remaining cropland areas. The F<sub>LU</sub> factor is based on the national soil survey and on soil maps for forest and agricultural soils in the local conditions. The determined values of soil carbon stock correspond to the appropriate cropland land use; hence the F<sub>LU</sub> factor is set to 1.0. The F<sub>MG</sub> factor is based on the Land Parcel Identification System data and takes into account the organic farming management (ecological agriculture) as</p>	Yes. Accuracy*



ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue <sup>b</sup> and/or a problem <sup>c</sup> ? If yes, classify by type
		<p>described in the NIR. Currently, the information to improve the F<sub>1</sub> factor is not available, but the Party is working on this</p> <p>The ERT recommends that the Party complete the work to develop country-specific reference carbon stock values/change factors associated with the tillage and input regimes and use the updated EF according to national circumstances in cropland management practices for calculations in the next submission</p>	
Waste			
W.7	5.C.1 Waste incineration – CO <sub>2</sub>	<p>According to the NIR (p. 260, table 7-12), the estimate of CO<sub>2</sub> emissions from hazardous/industrial waste incineration is based on default values with the tier 1 approach from the 2006 IPCC Guidelines. However, the EFs in table 7-12 of the NIR (amount of carbon fraction 0.5; combustion efficiency 0.995) are not the default values presented in table 5.2 of the 2006 IPCC Guidelines (total carbon content in % of dry weight 50% (industrial waste), 60% (clinical waste), 40–50% (sewage sludge); oxidation factor in % of carbon input, incineration 100%). The table 7-12 refers to the default EF in table 5.6 of the IPCC good practice guidance. During the review, the Party explained that this was a discrepancy in the NIR, but the EFs were indeed from the 2006 IPCC Guidelines</p> <p>The ERT recommends that the Party correct the information on the source of the CO<sub>2</sub> EF for hazardous/industrial waste incineration in its NIR</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
W.8	5.D.1 Domestic wastewater – N <sub>2</sub> O	<p>The ERT noted that the Party has calculated N<sub>2</sub>O emissions from domestic wastewater using a tier 1 methodology from the 2006 IPCC Guidelines. However, it was not clear to the ERT where the EF (F<sub>non-noc</sub>) of 1.25 shown in NIR table 7-18 came from. The 2006 IPCC Guidelines suggest 1.4 for countries with garbage disposal. During the review, in response to a question raised by the ERT, the Party explained that the factor was calculated as an average of with/without garbage disposal because even though Czechia does have garbage disposal, to some extent other practices are used. The ERT considers that this country-specific F<sub>non-noc</sub> is appropriate for the Party</p> <p>The ERT recommends that the Party provide in the NIR documentation on the value used for F<sub>non-noc</sub> and the rationale for choosing the EF</p>	Yes. Transparency*
W.9	5.D.1 Domestic wastewater – CH <sub>4</sub>	<p>The ERT was not able to reproduce the calculation presented in NIR table 7-17 for CH<sub>4</sub> emissions from domestic wastewater (category 5.D.1) for the years 1990–2013. The ERT believes that this issue should be considered further in future reviews to confirm there is not an underestimate of emissions</p> <p>The ERT recommends that the Party include a detailed description of the calculation of CH<sub>4</sub> emissions from domestic wastewater in the NIR of its next submission</p>	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue <sup>b</sup> and/or a problem <sup>c</sup> ? If yes, classify by type
W.10	5.D.2 Industrial wastewater – CH <sub>4</sub>	<p>The ERT noted that the Party used the MCF (0.0 for completely aerobic system, 1.0 for completely anaerobic system) from the Revised 1996 IPCC Guidelines for calculating CH<sub>4</sub> emissions from industrial wastewater, which is different from the default range of values in table 6.8 of the 2006 IPCC Guidelines (0.1 for untreated; 0 for aerobic treatment plant (well managed); 0.3 for aerobic treatment plant (not well managed); 0.8 for anaerobic digester for sludge; 0.8 for anaerobic reactor; 0.2 for anaerobic shallow lagoon; 0.8 for anaerobic deep lagoon). The MCF values used by Czechia in the calculation are default values from the Revised 1996 IPCC Guidelines, as follows: “The MCF varies between 0.0 for a completely aerobic system to 1.0 for a completely anaerobic system. Countries should contact wastewater experts to determine MCFs. If no data are available, as a default, use 0 for aerobic systems, and 1.0 for anaerobic”. In response to the question raised by the ERT, the Party explained that it used the default factors as it could not provide the same level of accuracy using the updated method because of correct AD availability for the whole time series and verification of country-specific factors with local experts. The ERT considers that there is a potential underestimation for whole time series caused by applying incorrect MCF values, including 2013 and 2014. Therefore, the ERT included this issue in the list of potential problems and further questions raised by the ERT</p> <p>In response to this list, the Party submitted revised CH<sub>4</sub> emission estimates, calculated with the MCF factor from the 2006 IPCC Guidelines (0.8 for anaerobic treatment; 0 for other). The ERT noted that Czechia also revised the values for CH<sub>4</sub> recovered and/or flared in the revised estimates, based on expert judgment. So far, with limited information it is difficult for the ERT to judge whether this expert judgment is appropriate. The ERT concluded that the underestimation caused by applying incorrect MCF values raised in the list of potential problems has been solved, but, in the new estimates (with the revised CH<sub>4</sub> recovered or flared), the estimation for the base year is not an overestimation but the values for the latest years are still in question (i.e. they may be overestimated)</p> <p>The ERT recommends that the Party provide in its NIR information on the expert judgment regarding CH<sub>4</sub> recovery and flaring to ensure that there is not an underestimation of emissions for the latest years</p>	Yes. Accuracy*
KP-LULUCF			
KL.3	Forest management – CO <sub>2</sub>	<p>The ERT noted that for the dead wood pool in CRF table NIR-1 the notation key “R” (reported) is used for the activity forest management. However, the Party reports these carbon stock changes as “NO” in CRF table 4(KP-I)B.1. The notation key “R” is used to indicate that an effort was made to assess the changes in the dead wood pool, which resulted in the reported (hence “R”) conclusion of adopting assumption of zero changes. Taking into account that forest management is a key category, the ERT notes that the Party intends to revise these carbon stock changes in connection with the expected new NFI data</p>	Yes. Comparability*

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding with recommendation or encouragement</i>	<i>Is finding an issue<sup>b</sup> and/or a problem<sup>c</sup>? If yes, classify by type</i>
		The ERT considers that the reporting in table NIR-1 is not consistent with the other tables, and therefore recommends that the Party report the correct notation key “NR” (not reported) in CRF table NIR-1	
KL.4	Afforestation and reforestation – CO <sub>2</sub> , CH <sub>4</sub> and N <sub>2</sub> O	<p>The ERT noted that it is not clear in the Party’s annual submission whether biomass burning occurred in certain afforestation and reforestation areas and it was reported as “NO” in the CRF tables. In particular, the ERT noted that, if biomass burning does occur, it would have to be reported under afforestation/reforestation and not only under forest management</p> <p>The ERT recommends that the Party provide information on biomass burning in afforestation/reforestation areas and if it occurs report the associated emissions</p>	Yes. Completeness*
KL.5	Deforestation – CO <sub>2</sub>	<p>The ERT asked about sources of information for AD on deforestation. The Party described in a detailed way how the AD for deforestation were collected in conjunction with ongoing efforts in relation to the new NFI</p> <p>The ERT recommends that the Party include in its NIR the description of how AD for deforestation were collected for increased transparency and increase ongoing efforts to complete the NFI in order to implement its results in the next GHG inventory</p>	Yes. Transparency*
KL.6	Forest management – CO <sub>2</sub>	<p>The ERT noted that carbon stock change in dead wood is reported as “NO” with an explanation provided in the NIR (chapter 11.3.1.2). In the 2014 NIR submission, the Party provided empirical data for the justification that the dead organic matter carbon pool is not a net source and will use data from the NFI and CzechTerra to verify the identical assessment from the empirical studies</p> <p>The ERT recommends that Czechia assess whether carbon stock changes in dead wood occur and if necessary report these carbon stock changes based on the NFI</p>	Yes. Completeness*
KL.7	Harvested wood products – CO <sub>2</sub>	<p>The ERT noted that the CRF tables include the necessary category split of HWP between wood originating from: land subject to afforestation and reforestation; land subject to deforestation; land subject to forest management; land deforestation events; and other lands. But the NIR does not provide a transparent description of these categories. In response to the question raised by the ERT during the review, the Party provided the necessary information in a transparent manner, explaining that HWP could come from only deforestation, with data shown in tabular format</p> <p>The ERT recommends that the Party include in the NIR information on the category split of HWP with additional explanatory text</p>	Yes. Transparency*
KL.8	Harvested wood products – CO <sub>2</sub>	The ERT noted that the NIR (p. 211) states: “The major quantitative change is attributed to the current estimate of the HWP contribution, which is a result of the use of a different reporting method compared to that in the previous NIR submission”. According to annex II to decision 2/CMP.8 and	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue <sup>b</sup> and/or a problem <sup>c</sup> ? If yes, classify by type
KL.9	Harvested wood products – CO <sub>2</sub>	<p>table 2.4.1 in the Kyoto Protocol Supplement, additional information is to be included in the NIR for reporting HWP on forest management. Among others, a demonstration of methodological consistency between the FMRL and forest management reporting during the second commitment period, including the area accounted for, treatment of HWP and any emissions/removals from natural disturbances. During the review, to explain this aspect, the Party transparently provided a description that is fully consistent with the treatment of HWP for the FMRL. It also used a first-order decay method for setting the FMRL, as noted in the NIR text (p. 329, para. 11.5.3.2). The FMRL was prepared for Czechia in accordance with a method coordinated by the Joint Research Center as the European Commission's science and knowledge service.<sup>f</sup> The methodological consistency between the FMRL and forest management reporting is retained and hence no technical correction has yet been applied to the FMRL (as noted in para. 11.5.3.3)</p> <p>The ERT recommends that the Party extend the part of the NIR that describes the development of the FRML and HWP for increased transparency</p> <p>The ERT noted that the NIR includes information about HWP in chapters 6.10 (CRF 4.G) and 11.4.5, Yes. Transparency* where the HWP category is described. However, this description does not fully comply with the requirements of annex II to decision 2/CMP.8 and table 2.4.1 of the Kyoto Protocol Supplement, because information on demonstration of methodological consistency between the FMRL and forest management reporting during the second commitment period, including area accounted for, treatment of HWP and any emissions/removals from natural disturbances, is not included. During the review, the Party provided structured information on methodological consistency between the FMRL and forest management reporting in accordance with the requirements of decision 2/CMP.8 in a transparent manner with additional explanations</p> <p>The ERT recommends that the Party include the information on HWP according to the requirements of decision 2/CMP.8</p>	

*Abbreviations:* AD = activity data, AWMS = animal waste management system, CMP = Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, CPR = commitment period reserve, CRF = common reporting format, EF = emission factor, ERT = expert review team, F-gas = fluorinated gas, FMRL = forest management reference level, GE = gross energy intake, GHG = greenhouse gas, IEF = implied emission factor, HWP = harvested wood products, IPCC = Intergovernmental Panel on Climate Change, IPCC good practice guidance = *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, 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, Kyoto Protocol Supplement = *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol*, LULUCF = land use, land-use change and forestry, MCF = methane conversion factor, MSW = municipal solid waste, Nex = nitrogen excretion, NFI = national forest inventory, NIR = national inventory report, QA/QA = quality assurance/quality control, Revised 1996 IPCC Guidelines = *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*, 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”, VS = volatile solids, Wetlands Supplement = *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*, 2006 IPCC Guidelines = *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

<sup>a</sup> 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 13<sup>th</sup> 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).

<sup>b</sup> 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.

<sup>c</sup> 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.

<sup>d</sup> <<http://www.knaufinsulation.com/en/content/czech-prime-minister-bohuslav-sobotka-visits-knauf-insulation-glass-mineral-wool-plant>>.

<sup>e</sup> <<https://www.ispop.cz/magnoliaPublic/cenia-project/uvod.html>>.

<sup>f</sup> <The report on the FMRL is available at <<https://unfccc.int/bodies/awg-kp/items/5896.php>>.

## **VI. Application of adjustments**

11. The ERT has not identified the need to apply any adjustments to the 2016 annual submission of Czechia.

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

12. Czechia has elected commitment period accounting and therefore the issuance and cancellation of units for activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol are not applicable for the 2015 review.

## **VIII. Questions of implementation**

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

## Annex I

### Overview of greenhouse gas emissions and removals for Czechia 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 Czechia.

Table 6  
Total greenhouse gas emissions for Czechia, Base year<sup>a</sup>–2013<sup>b</sup>  
(kt CO<sub>2</sub> eq)

	Total GHG emissions excluding indirect CO <sub>2</sub> emissions		Total GHG emissions including indirect CO <sub>2</sub> emissions <sup>c</sup>		Land-use change (Article 3.7bis as contained in the Doha Amendment) <sup>d</sup>	KP-LULUCF activities (Article 3.3 of the Kyoto Protocol) <sup>e</sup>	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								-4 686.00
Base year	189 736.07	196 204.09	191 848.38	198 316.40	NA		NA	
1990	189 731.40	196 199.42	191 843.71	198 311.74				
1995	147 372.93	155 403.35	149 093.62	157 124.04				
2000	139 594.02	148 382.14	140 722.85	149 510.97				
2010	130 854.24	138 031.29	131 776.78	138 953.82				
2011	128 394.61	136 772.65	129 339.54	137 717.57				
2012	124 090.86	132 634.00	125 004.52	133 547.66				
2013	120 800.87	128 717.21	121 614.83	129 531.17		-258.35	NA	-6 405.52

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.

<sup>a</sup> Base year refers to the base year under the Kyoto Protocol, which is 1990 for CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O, and 1995 for HFCs, PFCs, SF<sub>6</sub> and NF<sub>3</sub>. Czechia 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 forest management under Article 3, paragraph 4, only the inventory years of the commitment period must be reported.

<sup>b</sup> Emissions/removals reported in the sector other (sector 6) are not included in total GHG emissions.

<sup>c</sup> The Party has reported indirect CO<sub>2</sub> emissions in common reporting format table 6.

<sup>d</sup> The value reported in this column refers to 1990.

<sup>e</sup> Activities under Article 3, paragraph 3, of the Kyoto Protocol, namely afforestation and reforestation, and deforestation.

Table 7

**Greenhouse gas emissions by gas for Czechia, excluding land use, land-use change and forestry 1990–2013<sup>a</sup>**(kt CO<sub>2</sub> eq)

	<i>CO<sub>2</sub><sup>b</sup></i>	<i>CH<sub>4</sub></i>	<i>N<sub>2</sub>O</i>	<i>HFCs</i>	<i>PFCs</i>	<i>Unspecified mix of HFCs and PFCs</i>	<i>SF<sub>6</sub></i>	<i>NF<sub>3</sub></i>
1990	163 761.84	23 315.24	11 149.44	NO	NO	NO, NE, IE	85.22	NO
1995	131 456.78	17 745.43	7 831.94	0.23	0.01	NO, NE, IE	89.65	NO
2000	126 901.90	14 897.92	7 394.10	203.99	3.95	NO, NE, IE	109.13	NO
2010	116 599.36	13 994.05	6 282.10	1 947.71	49.32	NO, NE, IE	81.29	NO
2011	114 936.07	14 018.71	6 446.54	2 219.11	10.72	NO, NE, IE	86.43	NO
2012	110 629.27	14 087.84	6 333.94	2 395.39	8.74	NO, NE, IE	90.68	1.80
2013	107 164.49	13 437.02	6 204.67	2 621.18	6.61	NO, NE, IE	93.38	3.82
<b>Per cent change 1990–2013</b>	<b>–34.6</b>	<b>–42.4</b>	<b>–44.3</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>9.6</b>	<b>NA</b>

*Abbreviations:* IE = included elsewhere, NA = not applicable, NE = not estimated, NO = not occurring.

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

<sup>b</sup> CO<sub>2</sub> emissions include indirect CO<sub>2</sub> emissions reported in common reporting format table 6.



Table 8  
**Greenhouse gas emissions by sector for Czechia, 1990–2013<sup>a, b</sup>**  
 (kt CO<sub>2</sub>eq)

	<i>Energy</i>	<i>IPPU</i>	<i>Agriculture</i>	<i>LULUCF</i>	<i>Waste</i>	<i>Other</i>
1990	159 765.27	17 828.45	17 588.26	-6 468.02	3 129.76	NO
1995	128 288.99	14 822.07	10 649.01	-8 030.42	3 363.96	NO
2000	121 671.54	14 923.53	9 352.36	-8 788.12	3 563.54	NO
2010	111 794.09	14 872.90	8 011.37	-7 177.05	4 275.46	NO
2011	110 294.49	14 961.42	8 135.81	-8 378.03	4 325.86	NO
2012	106 116.16	14 824.32	8 111.05	-8 543.14	4 496.13	NO
2013	101 746.77	14 840.97	8 182.62	-7 916.34	4 760.81	NO
<b>Per cent change 1990–2013</b>	<b>-36.3</b>	<b>-16.8</b>	<b>-53.5</b>	<b>22.4</b>	<b>52.1</b>	<b>NA</b>

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

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

<sup>b</sup> Totals include indirect CO<sub>2</sub> emissions reported 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<sup>a, b</sup>–2013, for Czechia**  
 (kt CO<sub>2</sub> eq)

	<i>Article 3.3 of the Kyoto Protocol</i>			<i>Forest management and elected Article 3.4 activities of the Kyoto Protocol</i>				
	<i>Land-use change</i>	<i>Afforestation and reforestation</i>	<i>Deforestation</i>	<i>Forest management</i>	<i>Cropland management</i>	<i>Grazing land management</i>	<i>Revegetation</i>	<i>Wetland drainage and rewetting</i>
FMRL				-4 686.00				
Technical correction				NA				
Base year	NA				NA	NA	NA	NA
2013		-492.61	234.27	-6 405.52	NA	NA	NA	NA
<b>Per cent change Base year– 2013</b>					<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>

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

<sup>a</sup> Base year refers to the base year under the Kyoto Protocol, which is 1990 for CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O, and 1995 for HFCs, PFCs, SF<sub>6</sub> and NF<sub>3</sub>. Czechia 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 forest management under Article 3, paragraph 4, only the inventory years of the commitment period must be reported.

<sup>b</sup> Values in this table include emissions on lands subject to natural disturbances, if applicable.

2. Table 13 provides an overview of relevant key data for Czechia's reporting under Article 3, paragraphs 3 and 4, of the Kyoto Protocol.

Table 13

**Key relevant data for Czechia under Article 3, paragraphs 3 and 4, of the Kyoto Protocol**

<i>Key parameters</i>	<i>Values</i>
Periodicity of accounting	(a) Afforestation/reforestation: commitment period accounting (b) Deforestation: commitment period accounting (c) Forest management: commitment period accounting (d) Cropland management: not elected (e) Grazing land management: not elected (f) Revegetation: not elected (g) Wetland drainage and rewetting: not elected
Election of activities under Article 3, paragraph 4	None
Election of application of provisions for natural disturbances	No
3.5 % of total base year GHG emissions, excluding LULUCF and including indirect CO <sub>2</sub> emissions	6 941.074 kt CO <sub>2</sub> eq (55 528.593 kt CO <sub>2</sub> 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 Czechia. 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 Czechia

(t CO<sub>2</sub> eq)

	<i>Original submission</i>	<i>Revised estimates</i>	<i>Adjustment<sup>a</sup></i>	<i>Final<sup>b</sup></i>
<b>Commitment period reserve</b>	<b>989 205 565</b>			<b>468 463 683</b>
<b>Annex A emissions for 2013</b>				
CO <sub>2</sub> <sup>c</sup>	108 838 220	107 164 491		107 164 491
CH <sub>4</sub>	13 128 911	13 437 021		13 437 021
N <sub>2</sub> O	6 044 607	6 204 665		6 204 665
HFCs	2 621 182			2 621 182
PFCs	6 607			6 607
Unspecified mix of HFCs and PFCs	NO, NE, IE			NO, NE, IE
SF <sub>6</sub>	93 383			93 383
NF <sub>3</sub>	3 824			3 824
<b>Total Annex A sources</b>	<b>130 736 734</b>	<b>129 531 173</b>		<b>129 531 173</b>
<b>Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2013</b>				
3.3 Afforestation and reforestation		-492 613		-492 613
3.3 Deforestation		234 267		234 267
<b>Forest management and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2013</b>				
3.4 Forest management for 2013		-6 405 524		-6 405 524

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

<sup>a</sup> "Adjustment" is relevant only for Parties for which the expert review team has calculated one or more adjustment(s).

<sup>b</sup> "Final" includes revised estimates, if any, and/or adjustments, if any.

<sup>c</sup> CO<sub>2</sub> emissions include indirect CO<sub>2</sub> emissions reported in common reporting format table 6.

## Annex III

### Additional information to support findings in table 2

#### A. Missing categories that may affect completeness

1. The categories for which methods are included in the *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) Carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) emissions from fugitive emissions from fuels – oil (see ID# E.19 in table 5);

(b) CO<sub>2</sub>, CH<sub>4</sub> and perfluorocarbon (PFC) emissions from aluminium production (see ID# I.3 in table 3);

(c) Hydrofluorocarbon (HFC), PFs and sulphur hexafluoride (SF<sub>6</sub>) emissions from product use as substitutes for ozone-depleting substances, other applications (see ID# I.9 in table 3);

(d) CO<sub>2</sub> emissions from other process uses of carbonates (mineral wool) (see ID# I.10 in table 5);

(e) CO<sub>2</sub> emissions from soda ash production (see ID# I.11 in table 5);

(f) CO<sub>2</sub> and CH<sub>4</sub> emissions from metal industry (ferroalloys production and zinc production) (see ID# I.12 in table 5);

(g) SF<sub>6</sub> emissions from the use of SF<sub>6</sub> in double-glazed sound-proof windows (see ID# I.17 in table 5);

(h) Carbon stock change in the dead organic matter pool for forest land remaining forest land (see ID# L.2 in table 3);

(i) CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O emissions from biomass burning under afforestation and reforestation (see ID# KL.4 in table 5);

(j) Carbon stock change in dead wood under forest management (see ID# KL.6 in table 5).

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

2. The ERT has recommended that the next review for Czechia be conducted as an in-country review. The ERT found several issues related to quality assurance/quality control (QA /QC), completeness and potential under- or overestimations. In accordance with decision 13/CP.20, annex, paragraph 64, the ERT has provided a list of questions and issues to be addressed during this in-country review, as set out below, that are in addition to the list of issues identified in table 3 and/or 5.

3. The issues relate to national inventory arrangements (adherence to the “Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”). The ERT notes that several issues on QA/QC (in particular ID#s G.12, G.15, A.2, A.16 and A.23), completeness (E.20, I.6, I.9, I.10, I.11, I.12, I.17 and L.2) and potential under- or overestimation (ID#s E.11, E.12, E.13, E.14, E.15, E.17, E.18, I.14, A.26, A.27, A.28, A.29, and W.10) reflect that the national inventory arrangements are not fully functional. The in-country review should address issues related to QA/QC within the national inventory arrangements.

4. Key related questions for consideration are:

- (a) How has QA/QC been conducted within the national inventory arrangements?
- (b) How has the feedback from QA/QC been reflected in the inventory preparation process?
- (c) How does the Party ensure the completeness of the reporting of the greenhouse gas inventory?
- (d) How does the Party ensure that there is neither over- nor underestimation?

## 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 Czechia for 2015. Available at <<http://unfccc.int/resource/docs/2015/asr/CZE.pdf>>.

FCCC/ARR/2014/CZE. Report on the individual review of the annual submission of the Czech Republic submitted in 2014. Available at <<http://unfccc.int/resource/docs/2015/arr/cze.pdf>>.

FCCC/ARR/2013/CZE. Report of the individual review of the annual submission of the Czech Republic submitted in 2013. Available at <<http://unfccc.int/resource/docs/2014/arr/cze.pdf>>.

FCCC/ARR/2012/CZE. Report of the individual review of the annual submission of the Czech Republic submitted in 2012. Available at <<http://unfccc.int/resource/docs/2013/arr/cze.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 I 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. 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 Czechia for 2015. Available at <[http://unfccc.int/files/kyoto\\_mechanisms/application/pdf/siar\\_2015\\_cze\\_1\\_2.pdf](http://unfccc.int/files/kyoto_mechanisms/application/pdf/siar_2015_cze_1_2.pdf)>.

Standard independent assessment report, part 2, for Czechia for 2015. Available at <[http://unfccc.int/files/kyoto\\_mechanisms/application/pdf/siar\\_2015\\_cze\\_2\\_2.pdf](http://unfccc.int/files/kyoto_mechanisms/application/pdf/siar_2015_cze_2_2.pdf)>.

## **B. Additional information provided by the Party**

Responses to questions during the review were received from Ms. Eva Krtková (Czech Hydrometeorological Institute), including additional material on the methodology and assumptions used.



## Annex V

### Acronyms and abbreviations

AAU	assigned amount unit
AD	activity data
AWMS	animal waste management system
CER	certified emission reduction
CH <sub>4</sub>	methane
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> eq	carbon dioxide equivalent
CRF	common reporting format
EF	emission factor
ERT	expert review team
ERU	emission reduction unit
F-gas	fluorinated gas
FMRL	forest management reference level
GHG	greenhouse gas; unless indicated otherwise, GHG emissions are the sum of CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> and NF <sub>3</sub> , without GHG emissions and removals from LULUCF
HFC	hydrofluorocarbon
HWP	harvested wood products
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
kha	kilo hectare
kt	kilotonne
LULUCF	land use, land-use change and forestry
NA	not applicable
NE	not estimated
NF <sub>3</sub>	nitrogen trifluoride
NIR	national inventory report
NO	not occurring
NR	not reported
N <sub>2</sub> O	nitrous oxide
PFC	perfluorocarbon
QA/QC	quality assurance/quality control
R	reported
RMU	removal unit
SEF	standard electronic format
SF <sub>6</sub>	sulphur hexafluoride
SIAR	standard independent assessment report
UNFCCC	United Nations Framework Convention on Climate Change