Report to facilitate the calculation of the assigned amount of the Czech Republic for the second commitment period under the Kyoto Protocol

Report to facilitate the calculation of the assigned amount pursuant to Article 3, paragraphs 7bis, 8 and 8bis, of the Kyoto Protocol for the second commitment period and to demonstrate the capacity of the Party with a quantified emission limitation and reduction commitment inscribed in the third column of Annex B to account for its emissions and assigned amounts

Prague, August 2016

Ministry of the Environment
of the Czech Republic

Czech
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Introduction

According to paragraph 2 of decision 2/CMP.8 Parties with a quantified emission limitation and reduction commitment inscribed in the third column of Annex B of the Kyoto Protocol shall submit to the secretariat of the UNFCCC, by 15 April 2015, a report to facilitate the calculation of its assigned amount for the second commitment period and demonstrate its capacity to account for their emissions and assigned amount units. The information to be included in the report is specified in annexes I and II of Decision 2/CMP.8.

This report explains the modalities for the accounting of the assigned amount under Article 3(7bis), (8) and (8bis) of the Kyoto Protocol for the second commitment period and pursuant to Decision 2/CMP.8 taking into account also Council Decision (EU) 2015/1339 which sets out the terms of the joint fulfilment and the respective emission levels for the Union, its Member States and Iceland.

In particular the report contains the following information:

(a) Complete inventories of anthropogenic emissions by sources and removals by sinks of greenhouse gases (GHGs) not controlled by the Montreal Protocol;

(b) The identification of its selected base year for hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride;

(c) The agreement under Article 4 of the Kyoto Protocol for the second commitment period, where the Party has reached such an agreement to fulfill its commitments under Article 3 of the Kyoto Protocol jointly with other Parties;

(d) The calculation of its assigned amount pursuant to Article 3, paragraphs 7bis, 8 and 8bis;

(e) The calculation of its commitment period reserve;

(f) The identification of its selection of single minimum values for tree crown cover, land area and tree height for use in accounting for its activities under Article 3, paragraphs 3 and 4;

(g) The identification of its election of activities under Article 3, paragraph 4, of the Kyoto Protocol for inclusion in its accounting for the second commitment period, in addition to those activities under Article 3, paragraph 4, of the Kyoto Protocol that were elected in the first commitment period;

(h) The identification of whether, for each activity under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, it intends to account annually or for the entire commitment period;

(i) The forest management reference level as inscribed in the appendix to the annex to decision 2/CMP.7;

(j) Information on how emissions from harvested wood products originating from forests prior to the start of the second commitment period have been calculated in the reference level;

(k) An indication of whether it intends to apply the provisions to exclude emissions from natural disturbances for the accounting for afforestation and reforestation;

(l) A description of its national system in accordance with Article 5, paragraph 1;

(m) A description of its national registry

(n) The calculation of the difference between the assigned amount for the second commitment period and average annual emissions for the first three years of the preceding commitment period multiplied by eight, pursuant to Article 3, paragraph 7 ter

a. COMPLETE INVENTORIES OF ANTHROPOGENIC EMISSIONS BY SOURCES AND REMOVALS BY SINKS OF GREENHOUSE GASES NOT CONTROLLED BY THE MONTREAL PROTOCOL

The complete set of inventories for the period 1990 – 2014 is submitted in conjunction with this report.

The summary of greenhouse gas emissions and removals by gas and IPCC sector for this period is shown in the following tables.

Tab. a-1 GHG emissions 1990 – 2014 excl. bunkers [kt CO_2 eq.]

	CO_2[1]	CH_4[3]	N_2O[3]	HFCs	PFCs	NF_3	SF_6	Total emissions excl. LULUCF	Total emissions incl. LULUCF
1990	161 668.42	22 563.03	11 165.96	NE			85.22	195 344.80	188 876.77
1991	146 053.74	20 838.66	9 698.46				85.05	176 570.67	166 976.07
1992	141 572.12	19 560.38	8 880.26				86.35	169 989.91	159 902.35
1993	135 594.97	18 615.39	7 946.59				87.55	162 120.51	152 442.90
1994	129 195.13	17 617.14	7 687.23				88.64	154 461.38	146 906.52
1995	129 773.57	17 299.96	7 847.55	0.23	0.01	NO	89.65	154 892.15	146 861.74
1996	132 240.47	17 113.37	7 711.63	34.68	0.47	NO	99.24	157 047.89	148 668.11
1997	128 739.04	16 696.24	7 675.06	99.02	1.56	NO	97.02	153 145.95	145 679.88
1998	123 702.92	16 119.85	7 544.18	134.15	1.53	NO	95.75	147 454.13	139 847.13
1999	115 481.66	15 517.45	7 402.06	147.60	0.84	NO	96.69	138 512.73	130 624.79
2000	125 848.37	14 537.75	7 412.71	203.99	3.95	NO	109.13	147 992.74	139 204.62
2001	125 547.94	14 220.34	7 457.84	308.59	8.54	NO	99.54	147 515.14	138 400.70
2002	122 599.80	13 826.79	7 221.56	400.58	15.43	NO	121.95	144 049.44	135 304.39
2003	126 158.05	13 841.92	6 941.09	508.64	7.27	NO	145.35	147 433.08	140 186.27
2004	126 883.32	13 440.31	7 263.75	602.47	10.98	NO	121.16	148 166.34	140 399.08
2005	124 596.54	13 799.64	6 893.86	700.77	12.74	NO	112.32	145 967.01	137 853.55
2006	125 929.80	14 075.40	6 914.89	937.23	29.01	NO	109.41	147 812.79	141 868.19
2007	126 939.56	13 650.58	6 895.80	1 282.34	27.03	NO	94.53	148 653.72	144 929.36
2008	121 805.18	14 058.72	6 685.29	1 511.87	37.29	NO	94.40	144 004.88	137 124.31
2009	113 985.70	13 569.31	6 393.76	1 639.13	44.14	NO	97.15	135 569.59	127 659.58
2010	115 770.77	13 804.95	6 201.12	1 947.71	49.32	NO	81.29	137 686.93	130 509.88
2011	114 125.61	13 705.98	6 286.78	2 219.11	10.72	NO	86.43	136 356.76	127 978.72
2012	109 863.70	13 820.99	6 217.53	2 395.39	8.74	1.80	90.68	132 315.62	123 772.48
2013	106 491.27	13 194.86	6 056.27	2 621.18	6.61	3.82	93.38	128 389.78	120 473.44
2014	101 154.38	13 311.83	6 335.87	2 830.38	5.34	2.35	96.01	123 650.70	115 858.02
%[2)]	**-37.43**	**-41.00**	**-43.26**				**12.67**	**-36.70**	**-38.66**

Note: Global warming potentials (GWPs) used (100 years time horizon): CO_2 = 1; CH_4 = 25; N_2O = 298; SF_6 = 22 800; NF_3 = 17 200; HFCs and PFCs consist of different substances, therefore GWPs have to be calculated individually depending on substances

[1]GHG emissions excluding emissions/removals from LULUCF

[2] relative to base year

[3]incl. LULUCF

Tab. a-2 Summary of GHG emissions and removals 1990 – 2014 by IPCC sector [kt CO_2 eq.]

	1 Energy	2 IPPU	3 Agriculture	4 LULUCF	5 Waste
1990	157 265.99	17 087.65	17 615.91	-6 468.02	3375.25
1991	143 953.90	13 830.83	15 379.80	-9 594.61	3406.14
1992	138 503.99	14 595.88	13 486.84	-1 087.57	3403.20
1993	133 278.12	13 435.94	11 970.91	-9 677.61	3435.54
1994	125 427.70	14 674.21	10 808.22	-7 554.86	3551.25
1995	126 440.33	14 162.86	10 672.59	-8 030.42	3616.37
1996	128 173.36	14 836.73	10 443.56	-8 379.77	3594.23
1997	123 698.71	15 713.53	10 045.38	-7 466.06	3688.32
1998	118 262.82	15 799.54	9 648.27	-7 607.00	3743.50
1999	111 809.35	13 238.20	9 711.34	-7 887.94	3753.84
2000	120 235.09	14 642.16	9 377.76	-8 788.12	3737.72
2001	120 427.58	13 860.33	9 414.43	-9 114.45	3812.80
2002	117 278.24	13 612.35	9 215.35	-8 745.05	3943.50
2003	119 951.30	14 626.68	8 786.02	-7 246.81	4069.08
2004	119 782.12	15 545.44	8 829.76	-7 767.25	4009.02
2005	119 197.15	14 388.64	8 334.90	-8 113.47	4046.32
2006	119 890.71	15 391.33	8 418.95	-5 944.60	4111.80
2007	120 027.32	16 036.44	8 545.17	-3 724.36	4044.78
2008	115 132.91	16 282.34	8 368. 75	-6 880.57	4220.89
2009	109 594.01	13 603.11	8 064.89	-7 910.02	4307.58
2010	110 580.44	14 650.50	7 933.15	-7 177.05	4522.83
2011	109 084.92	14 710.61	7 985.70	-8 378.03	4575.53
2012	104 980.68	14 590.17	8 001.87	-8 543.14	4742.90
2013	100 760.48	14 598.63	8 040.63	-7 916.34	4990.04
2014	95 026.02	15 283.26	8 287.16	-7 792.68	5054.26
[1]%	-5.69%	4.69%	3.07%	-1.56%	1.29%
[2]%	-39.58%	-10.56%	-52.96%	20.48%	49.74%

[1] *Difference relative to previous year*
[2] *Difference relative to base year*

b. THE IDENTIFICATION OF ITS SELECTED BASE YEAR FOR HYDROFLUOROCARBONS, PERFLUOROCARBONS AND SULPHUR HEXAFLUORIDE

The Czech Republic has selected 1995 as the base year for HFCs, PFCs, SF_6 and NF_3 emissions.

c. THE AGREEMENT UNDER ARTICLE 4 OF THE KYOTO PROTOCOL FOR THE SECOND COMMITMENT PERIOD, WHERE THE PARTY HAS REACHED SUCH AN AGREEMENT TO FULFIL ITS COMMITMENTS UNDER ARTICLE 3 OF THE KYOTO PROTOCOL JOINTLY WITH OTHER PARTIES

The Kyoto Protocol, under Article 4, provides the option for Parties to fulfil their commitments under Article 3 jointly.

For the second commitment period, upon adoption of the Doha amendment to the Kyoto Protocol, the European Union, its Member States and Iceland stated that the European

Union and its 28 Member States again intend to fulfil their reduction targets under the second commitment period jointly[1].

The ratification decision (Council Decision (EU) 2015/1339) sets out the terms of the joint fulfilment between the Union and its Member States and Iceland. The same terms are integral part of the Agreement between the European Union and its Member States, of the one part, and Iceland, of the other part, concerning Iceland's participation in the joint fulfilment of the commitments of the European Union, its Member States and Iceland in the second commitment period of the Kyoto Protocol in accordance with Council Decision (EU) 2015/1340.

The joint assigned amount is calculated pursuant to the quantified emission limitation and reduction commitment listed in the third column of the table contained in Annex B to the Kyoto Protocol and in accordance with the provisions of Article 3 thereof. The assigned amounts of the members are determined in accordance with the terms of the joint fulfilment.
The calculation pursuant to Article 3(7ter) of the Kyoto Protocol shall apply to the joint assigned amount of the second commitment period determined in accordance with Article 3 (7bis), (8) and (8bis) of the Protocol and the sum of the average annual emissions of the members for the first three years of the first commitment period multiplied by eight.

The joint quantified emission limitation and reduction commitment for the members listed in the third column of Annex B of the Kyoto Protocol for the European Union, its 28 Member States and Iceland is 80%. The joint assigned amount of the Members is determined pursuant to Article 3(7bis), (8) and (8bis) of the Kyoto Protocol on the basis of the combined base year.

The respective emission levels of the members to the joint fulfilment are as follows:

- The emission level and assigned amount for the European Union is the difference between the joint assigned amount of the members, and the sum of the emission levels of the Member States and Iceland.
- The assigned amount of the European Union is counted against the emissions of greenhouse gases listed in Annex A to the Kyoto Protocol that are also covered by the EU Emissions Trading System (EU ETS) pursuant to Directive 2009/29/EC of the European Parliament and of the Council amending Directive 2003/87/EC[2] so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community. The sectors covered by the EU Emissions Trading System are those specified in Annex I of the EU ETS Directive and taking into account the application of its Articles 24 and 27.
- The emission levels of the Member States and Iceland cover the emissions from sectors and gases listed in Annex A to the Kyoto Protocol not covered by Directive 2009/29/EC of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community. This includes all emissions from sources and removals by sinks covered by Article 3(3) and (4) of the Protocol as well as all emissions of nitrogen trifluoride (NF_3) under the Kyoto Protocol. These emission

[1] Declaration made in footnotes 4, 6 and 8 to Annex B of the Doha Amendment and Council Decisions (EU) 2015/1339 and 2015/1340
[2] OJ L140, 5.6.2009, p. 63

levels are no longer derived as a reduction percentage compared to base year emissions as in the first commitment period, but as an absolute figure, expressed in tonnes of carbon dioxide equivalents listed for each Member State and Iceland. The figure for individual Member States is equal to the sum of each Member State's Annual Emissions Allocation under Decision No 406/2009/EC on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 (Effort Sharing Decision) for the years 2013 to 2020 before the application of Article 3(7bis).[3] The respective emission levels of the 28 Member States and Iceland in accordance with Article 4(1) and (5) of the Protocol and before application of Article 3(7bis) are listed in the following table.

Country	**Emission level [tonnes of CO_2eq.]**
Belgium	584,228,513
Bulgaria	222,945,983
Czech Republic	520,515,203
Denmark	269,321,526
Germany	3,592,699,888
Estonia	51,056,976
Ireland	343,467,221
Greece	480,791,166
Spain	1,766,877,232
France	3,014,714,832
Croatia	162,271,086
Italy	2,410,291,421
Cyprus	47,450,128
Latvia	76,633,439
Lithuania	113,600,821
Luxembourg	70,736,832
Hungary	434,486,280
Malta	9,299,769
Netherlands	919,963,374
Austria	405,712,317
Poland	1,583,938,824
Portugal	402,210,711
Romania	656,059,490
Slovenia	99,425,782
Slovakia	202,268,939
Finland	240,544,599
Sweden	315,554,578
United Kingdom	2,743,362,625
Iceland	15,327,217

The terms of the joint fulfilment determine that the assigned amounts of the members shall be equal to their respective emission levels, adjusted for Article 3(7bis) of the Kyoto Protocol.

[3] OJ L140, 5.6.2009, p. 136

d. THE CALCULATION OF ITS ASSIGNED AMOUNT PURSUANT TO ARTICLE 3, PARAGRAPHS 7BIS, 8 AND 8BIS

Pursuant to Annex I to Decision 3/CMP.11, section I, B para 2 those Parties that have reached an agreement in accordance with Article 4 to fulfil their commitments under Article 3 jointly shall use the respective emission level allocated to each of the Parties in that agreement instead of the percentage inscribed for it in the third column of Annex B.

Since the Land use, land use change and forestry did not constitute a net source of greenhouse gas emissions in 1990 for the Czech Republic, the assigned amount of the Czech Republic for the second commitment period under the Kyoto Protocol is equal to **520,515,203** tonnes of CO_2eq. This amount is equal to the respective Emission level of the Czech Republic inscribed in Table 1 of Annex 2 to the Agreement between the European Union and its Member States, of the one part, and Iceland, of the other part, concerning Iceland's participation in the joint fulfilment of the commitments of the European Union, its Member States and Iceland for the second commitment period of the Kyoto Protocol to the United Nations Framework Convention on Climate Change.

e. THE CALCULATION OF ITS COMMITMENT PERIOD RESERVE

The commitment period reserve equals the lower of either 90% of a Party's assigned amount pursuant to Article 3(7bis), (8) and (8bis) or 100% of its most recently reviewed inventory, multiplied by 8.

For the purposes of the joint fulfilment, the commitment period reserve applies to the EU, its Member States and Iceland individually.

The calculations of the commitment period reserve for the Czech Republic are as follows.

Method 1: 90 % of assigned amount results in:
0.90 x 520,515,203 = 495,463,683 tonnes of CO_2eq.

Method 2: 100 % of most recently reviewed inventory, taken the 2016 submission as the most recently reviewed inventory, multiplied by 8 results in:
123,650,696 x 8 = 989,205,565 tonnes of CO_2eq.

The commitment period reserve consequently amount to **495,463,683** tonnes of carbon dioxide equivalent.

f. THE IDENTIFICATION OF ITS SELECTION OF SINGLE MINIMUM VALUES FOR TREE CROWN COVER, LAND AREA AND TREE HEIGHT FOR USE IN ACCOUNTING FOR ITS ACTIVITIES UNDER ARTICLE 3, PARAGRAPHS 3 AND 4

The definition of forest will remain the same as for the first commitment period.

For reporting LULUCF activities under Articles 3.3 and 3.4 of the Kyoto Protocol, forest land is defined as land with tree crown cover over at least 30% (or equivalent stocking density) and an area of more than 0.05 hectares. Trees should reach a minimum height of 2 meters at maturity. Tree rows less than 20 meters wide are not considered to form a forest.

g. THE IDENTIFICATION OF ITS ELECTION OF ACTIVITIES UNDER ARTICLE 3, PARAGRAPH 4, OF THE KYOTO PROTOCOL FOR INCLUSION IN ITS ACCOUNTING FOR THE SECOND COMMITMENT PERIOD, IN ADDITION TO THOSE ACTIVITIES UNDER ARTICLE 3, PARAGRAPH 4, OF THE KYOTO PROTOCOL THAT WERE ELECTED IN THE FIRST COMMITMENT PERIOD

The Czech Republic elected forest management for the first commitment period and does not elect any additional activities for accounting in the second commitment period under the Kyoto Protocol.

h. THE IDENTIFICATION OF WHETHER, FOR EACH ACTIVITY UNDER ARTICLE 3, PARAGRAPHS 3 AND 4, OF THE KYOTO PROTOCOL, IT INTENDS TO ACCOUNT ANNUALLY OR FOR THE ENTIRE COMMITMENT PERIOD

The Czech Republic will account for the activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol at the end of the second commitment period.

i. THE FOREST MANAGEMENT REFERENCE LEVEL AS INSCRIBED IN THE APPENDIX TO THE ANNEX TO DECISION 2/CMP.7

According to the Submission of information on forest management reference levels by the Czech Republic from 13 September 2011, the respective forest management reference level is -2.697 Mt CO_2eq./year assuming instantaneous oxidation of harvested wood products and -4.686 Mt CO_2eq./year applying first-order decay function for the harvested wood products pool. These numbers are also inscribed for the Czech Republic in the Annex to Decision 2/CMP.7.

Pursuant to Paragraphs 14 and 15 of Annex to Decision 2/CMP.7 (Land use, land-use change and forestry), when accounting for forest management, a technical correction of FMRL should be used when methodological changes in the calculation of the time series appear, new historical data are available or pools were not taken into account in FMRL. No technical corrections have been submitted by the Czech Republic so far.

j. INFORMATION ON HOW EMISSIONS FROM HARVESTED WOOD PRODUCTS ORIGINATING FROM FORESTS PRIOR TO THE START OF THE SECOND COMMITMENT PERIOD HAVE BEEN CALCULATED IN THE REFERENCE LEVEL

The method that was applied in the FMRL is presented in detail in Rüter (2011). It is based on Equation 12.1 from IPCC 2006 GL using activity data from UNECE TIMBER database, calculating the carbon inflow back to the year 1900 as suggested.

Ref.: Rüter, S. (2011) Projection of Net Emissions from Harvested Wood Products in European Countries : For the period 2013-2020. Thünen-Institute of Wood Research, Report No: 2011/01, 63 p. *http://literatur.vti.bund.de/digbib_extern/dn048901.pdf*

k. AN INDICATION OF WHETHER IT INTENDS TO APPLY THE PROVISIONS TO EXCLUDE EMISSIONS FROM NATURAL DISTURBANCES FOR THE ACCOUNTING FOR AFFORESTATION AND REFORESTATION

The Czech Republic does not intend to apply the provisions to exclude emissions from natural disturbances for the accounting for afforestation and reforestation under Article 3, paragraph 3, of the Kyoto Protocol and/or forest management under Article 3, paragraph 4, of the Kyoto Protocol during the second commitment period.

l. A DESCRIPTION OF ITS NATIONAL SYSTEM IN ACCORDANCE WITH ARTICLE 5, PARAGRAPH 1

A detailed description has been provided in the initial report for the first commitment period of the Kyoto Protocol. For the updated Information on Changes in the National System refer to Chapter 13 of the National Inventory Report 2016.

m. A DESCRIPTION OF ITS NATIONAL REGISTRY

A detailed description has been provided in the initial report for the first commitment period of the Kyoto Protocol. For the updated Information on Changes in National Registry refer to Chapter 14 of the National Inventory Report 2016.

n. THE CALCULATION OF THE DIFFERENCE BETWEEN THE ASSIGNED AMOUNT FOR THE SECOND COMMITMENT PERIOD AND AVERAGE ANNUAL EMISSIONS FOR THE FIRST THREE YEARS OF THE PRECEDING COMMITMENT PERIOD MULTIPLIED BY EIGHT, PURSUANT TO ARTICLE 3, PARAGRAPH 7 TER

In line with the terms of the joint fulfilment of the European Union, its Member States and Iceland under Article 3 of the Kyoto Protocol, Article 3(7ter) is applied to the joint assigned amount of the second commitment period.

REFERENCES

COUNCIL DECISION (EU) 2015/1339 of 13 July 2015 on the conclusion, on behalf of the European Union, of the Doha Amendment to the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments thereunder:
http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015D1339&from=EN

COUNCIL DECISION (EU) 2015/1340 of 13 July 2015 on the conclusion, on behalf of the European Union, of the Agreement between the European Union and its Member States, of the one part, and Iceland, of the other part, concerning Iceland's participation in the joint fulfilment of commitments of the European Union, its Member States and Iceland for the second commitment period of the Kyoto Protocol to the United Nations Framework Convention on Climate Change:
http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015D1340&from=EN

AGREEMENT between the European Union and its Member States, of the one part, and Iceland, of the other part, concerning Iceland's participation in the joint fulfilment of the commitments of the European Union, its Member States and Iceland for the second commitment period of the Kyoto Protocol to the United Nations Framework Convention on Climate Change:
http://ec.europa.eu/world/agreements/downloadFile.do?fullText=yes&treatyTransId=16282

“Submission of information on forest management reference levels by the Czech Republic” from 18 April 2011:
http://unfccc.int/files/meetings/ad_hoc_working_groups/kp/application/pdf/awgkp_czech_republic_2011.pdf

The updated “Submission of information on forest management reference levels by the Czech Republic” from 13 September 2011:
http://unfccc.int/files/meetings/ad_hoc_working_groups/kp/application/pdf/czechrepublic_130911.pdf

Report of the technical assessment of the forest management reference level submission of the Czech Republic submitted in 2011: http://unfccc.int/resource/docs/2011/tar/cze01.pdf

Rüter, S. (2011) Projection of Net Emissions from Harvested Wood Products in European Countries : For the period 2013-2020. Thünen-Institute of Wood Research, Report No: 2011/01: http://literatur.vti.bund.de/digbib_extern/dn048901.pdf

National Greenhouse Gas Inventory Report of the Czech Republic 2016