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Report on the review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol of Estonia

Note by the expert review team

Summary

According to decision 2/CMP.8, each Party with a quantified emission limitation and reduction commitment inscribed in the third column of Annex B to the Kyoto Protocol, as contained in the annex to decision 1/CMP.8, shall submit to the secretariat a report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol. In accordance with decision 22/CMP.1, annex I, paragraph 11, in conjunction with decision 4/CMP.11, paragraph 3, the report to facilitate the calculation of the assigned amount is subject to a review. This report presents the results of the technical review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol, 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 19 to 24 September 2016 in Bonn, Germany.

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I. Introduction¹

1. The review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol (hereinafter referred to as the report to facilitate the calculation of the assigned amount) of Estonia was organized by the UNFCCC secretariat, in accordance with the “Guidelines for review under Article 8 of the Kyoto Protocol”.² The review took place from 19 to 24 September 2016 in Bonn, Germany, and was coordinated by Ms. Kyoko Miwa (UNFCCC secretariat). Table 1 provides information on the composition of the expert review team (ERT) that conducted the review of Estonia.

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

Table 1

Composition of the expert review team that conducted the review of Estonia

<i>Area of expertise</i>	<i>Name</i>	<i>Party</i>
Generalist	Mr. Mikhail Gitarskiy	Russian Federation
	Ms. Batima Punsalmaa	Mongolia
Energy	Mr. Christo Christov	Bulgaria
	Mr. Amit Garg	India
	Ms. Brooke Elizabeth Perkins	Australia
IPPU	Mr. Samir Tantawi	Egypt
	Mr. David Glen Thistlethwaite	United Kingdom of Great Britain and Northern Ireland
Agriculture	Ms. Oksana Butrym	Ukraine
	Ms. Hongmin Dong	China
	Mr. Fredrick Kossam	Malawi
LULUCF	Ms. Rehab Ahmed Hassan	Sudan
	Ms. Esther Mertens	Belgium
	Mr. Koki Okawa	Japan
	Mr. Lucio Santos	Colombia
Waste	Mr. Pavel Gavrilita	Republic of Moldova
	Mr. Hiroyuki Ueda	Japan

¹ At the time of publication of this report, Estonia 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.

² Decision 22/CMP.1 and its annex and any revisions contained in decision 4/CMP.11 and its annex I.

<i>Area of expertise</i>	<i>Name</i>	<i>Party</i>
Lead reviewers	Mr. Mikhail Gitarskiy Ms. Batima Punsalmaa	

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

II. Summary of the reporting on mandatory elements in the report to facilitate the calculation of the assigned amount

3. Table 2 provides a summary of the ERT’s assessment of the reporting of mandatory elements by Estonia in its report to facilitate the calculation of the assigned amount. Key data and elections by the Party are included in table 4.

Table 2

Expert review team’s assessment of the reporting of mandatory elements by Estonia in its report to facilitate the calculation of the assigned amount

<i>Item</i>	<i>Comment</i>	
<i>General Party information</i>		
Date of submission		Original submission: 15 June 2016
Are there any missing categories or issues related to completeness ^a in the reporting of GHG emissions by sources and removals by sinks for the base year or period?	Yes	For further information, see document FCCC/ARR/2016/EST
Was the GHG inventory recalculated in accordance with decision 4/CMP.7 for all years from 1990 to the most recent year available?	Yes	
Did the Party report the base year for NF ₃ ?	Yes	See annex I, table 4
<i>Information related to agreement by the Party under Article 4 of the Kyoto Protocol to implement commitments jointly</i>		
Has complete information been reported in accordance with decision 3/CMP.11, paragraph 11, by the Party in fulfilment of its agreement under Article 4 of the Kyoto Protocol in relation to the following:		
(a) Application of decision 1/CMP.8, paragraphs 23–26, related to carry-over and the previous period surplus reserve account	No	For further information, see ID#8 in table 3
(b) Calculation of base-year emissions	Yes	See annex I, table 4
(c) Calculation of the assigned amount	Yes	See annex I, table 4; for further information, see ID#1 and ID#2 in table 3

<i>Item</i>		<i>Comment</i>
(d) Calculation of the commitment period reserve	Yes	See annex I, table 4; for further information, see ID#7 in table 3
(e) Application and calculation pursuant to decision 2/CMP.7, annex, paragraph 13	Yes	See annex I, table 4
<i>Information related to the assigned amount and the commitment period reserve</i>		
Was the assigned amount in the original submission calculated in accordance with Article 3, paragraph 8, of the Kyoto Protocol, Article 3, paragraphs 7 bis and 8 bis, as contained in the Doha Amendment and decision 13/CMP.1 in conjunction with decision 3/CMP.11?	Yes	See annex I, table 4; for further information, see ID#1 in table 3
Has the Party reported in the original submission the difference between the assigned amount for the second commitment period and average annual emissions for the first three years of the first commitment period, multiplied by 8?	No	See annex I, table 4; for further information, see ID#2 in table 3
Has the Party indicated in the original submission the approach ^b used to calculate average annual emissions for the first three years of the first commitment period?	Yes	See annex I, table 4; for further information, see ID#2 in table 3
Did land-use change and forestry constitute a net source of GHG emissions in the base year, and therefore did the Party include emissions from deforestation in the calculation of the assigned amount?	No	
Was the commitment period reserve in the original submission calculated in accordance with the annex to decision 18/CP.7, the annex to decision 11/CMP.1, the annex to decision 13/CMP.1, paragraph 8 quinquies, and decision 1/CMP.8, paragraph 18?	Yes	See annex I, table 4; for further information, see ID#7 in table 3
<i>Information related to activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol</i>		
If the Party identified activities elected under Article 3, paragraph 4, of the Kyoto Protocol, are these elections in accordance with decision 2/CMP.7, paragraphs 6–8?	Yes	
Do the activities elected under Article 3, paragraph 4, of the Kyoto Protocol for the second commitment period include at least those activities elected for the first commitment period?	Yes	Under the first commitment period, no activities were elected
Is information reported on how the national system under Article 5, paragraph 1, of the Kyoto Protocol will identify land areas associated with all additional elected activities and how the Party ensures that land that was accounted for in the first commitment period continues to be accounted for in the second commitment period?	Yes	
Has the Party identified for each activity under Article 3,	Yes	See annex I, table 4

<i>Item</i>		<i>Comment</i>
paragraphs 3 and 4, of the Kyoto Protocol whether it intends to account annually or for the entire commitment period?		
Did the Party provide information on the forest management reference level, including, if appropriate, information on technical corrections and 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?	Yes	See annex I, table 4; for further information, see ID#4 in table 3
Has the Party reported the quantity amounting to 3.5% of the base-year GHG emissions, excluding LULUCF in the original submission?	Yes	See annex I, table 4; for further information, see ID#5 in table 3
Did the Party indicate whether it intends to apply the provisions to exclude emissions from natural disturbances for the accounting for afforestation and reforestation and/or forest management and provide the relevant information in accordance with decision 2/CMP.7, annex, paragraph 33?	Yes	See annex I, table 4; for further information, see ID#6 in table 3
<i>Information related to the national system and national registry</i>		
Was a description of the national system provided, in accordance with the guidelines for national systems under Article 5, paragraph 1, of the Kyoto Protocol?	NA	This information was already reported and reviewed as part of the initial review of the report to facilitate the calculation of the assigned amount for the first commitment period and did not need to be reported
Was a description of the national registry provided, in accordance with the requirements contained in the annex to decision 13/CMP.1, the annex to decision 5/CMP.1 and the technical standards for data exchange between registry systems adopted by the CMP?	NA	This information was already reported and reviewed as part of the initial review of the report to facilitate the calculation of the assigned amount for the first commitment period and did not need to be reported

Abbreviations: CMP = Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, NA = not applicable.

^a Issues related to missing categories and completeness are only for those categories for which methods are available in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

^b Parties may elect to calculate average annual emissions for the first three years of the first commitment period by including either the gases and sources listed in Annex A to the Kyoto Protocol, or the GHGs, sectors and source categories used to calculate the assigned amount for the second commitment period.

III. Technical assessment of the elements reviewed

4. In accordance with decision 22/CMP.1, and in conjunction with decision 4/CMP.11, the review of the report to facilitate the calculation of the assigned amount for Estonia has been undertaken together with the review of the inventory submission for the first year of the second commitment period.³ Table 3 contains additional information, if any, to support the ERT's assessment included in table 2 above of the Party's capacity to account for its emissions and the assigned amount, specifically related to: the calculation of the assigned amount for the second commitment period and any adjustments applied; information related to Article 3, paragraph 7 ter, as contained in the Doha Amendment; information related to reporting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol; calculation of the commitment period reserve; and the national system and national registry.

Table 3

Additional findings of the expert review team, if any, related to Estonia's reporting of mandatory elements in its report to facilitate the calculation of the assigned amount

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding</i>	<i>Classification of problem</i>
1.	Calculation of the assigned amount	<p>The assigned amount submitted by the Party in its report to facilitate the calculation of the assigned amount was calculated in accordance with Article 3, paragraphs 7 bis, 8 and 8 bis, of the Kyoto Protocol, the annex to decision 13/CMP.1 and annex I to decision 3/CMP.11</p> <p>The ERT notes that the European Union, its member States and Iceland stated that they will fulfil their reduction targets under the second commitment period jointly.^a The joint assigned amount for the European Union, its member States and Iceland 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, while the assigned amount of each member State is determined in accordance with the terms of the joint fulfilment agreement. Specifically, the assigned amount for Estonia is fixed based on Annex II to European Commission decision 2013/162/EU and as adjusted by Commission implementing decision 2013/634/EU^b</p> <p>The ERT concludes that the assigned amount reported by Estonia is in accordance with the joint fulfilment agreement by the European Union, its member States and Iceland</p>	Not a problem
2.	Reporting pursuant to Article 3.7 ter, of the Kyoto Protocol	<p>The ERT noted that Estonia did not provide information in accordance with Article 3, paragraph 7 ter, of the Doha Amendment, specifically, the Party did not report the difference between the assigned amount for the second commitment period and the average annual emissions for the first three years of the first commitment period, multiplied by 8. The ERT further noted that in section 6 of its original submission, Estonia indicated that no specific information for Estonia is to be reported given that Article 3, paragraph 7 ter, of the Doha Amendment is applied to the joint assigned amount of the second commitment period of the Kyoto Protocol for the</p>	Not a problem

³ The annual review report on the 2016 inventory submission of Estonia is available at <<http://unfccc.int/resource/docs/2017/arr/est.pdf>>, while the annual review report on the 2015 inventory submission of Estonia is available at <<http://unfccc.int/resource/docs/2016/arr/est.pdf>>.

ID#	Finding classification	Description of the finding	Classification of problem
		<p>European Union, its member States and Iceland</p> <p>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, and as described in the report to facilitate the calculation of the assigned amount of the European Union, Article 3, paragraph 7 ter, of the Kyoto Protocol is applied to the joint assigned amount of the European Union, its member States and Iceland for the second commitment period. In its report, the European Union includes the value for the difference between the joint assigned amount for the second commitment period and the average annual emissions for the first three years of the first commitment period for the member States and Iceland, multiplied by 8. The report of the European Union also clarifies that the approach used to calculate the average annual emissions for the first three years of the first commitment period is including the gases and sources listed in Annex A to the Kyoto Protocol</p>	
3.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	<p>In the report to facilitate the calculation of the assigned amount, Estonia indicated that it is working on complete and official technical corrections to the calculations for the FMRL, with the support of the Joint Research Centre of the European Commission. In the NIR of its 2016 annual inventory submission, Estonia indicated that it chose not to make these corrections for that report because it is not mandatory to make technical corrections annually for the entire commitment period. The Party indicated that a model recalibration was conducted, but a full rerun of the model will be carried out in the future, which will allow Estonia to implement complete and official technical corrections</p> <p>The ERT noted that in the report of the technical assessment of the forest management reference level submission of Estonia submitted in 2011 (FCCC/TAR/2011/EST), a recommendation was made to Estonia to make a technical correction to the FMRL when agreement on HWP estimation had been reached because of the high inter-annual variability of the estimates for forest land in the 2011 GHG inventory, which was the basis for the estimates considered in document FCCC/TAR/2011/EST, unless the causes of such variability were detected and estimates consequently reassessed. The Party was also recommended to not include CO₂ emissions from forest fires reported in CRF table 5(V) in any recalculation of the FMRL based on the 2011 GHG inventory. In response to the questions on these matters raised by the ERT during the review, Estonia explained that the emissions and removals of HWP are calculated in accordance with the <i>2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol</i>, taking into account inherent HWP emissions, HWP from deforestation and HWP for exports, and following the recommendations in document FCCC/TAR/2011/EST</p>	Not a problem
4.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	<p>The ERT noted that Estonia calculated its FMRL in the report to facilitate the calculation of the assigned amount both using instantaneous oxidation for HWP (for which a value of -1.742 Mt CO₂ eq was reported) and by applying a first-order decay function for HWP (for which 2.741 Mt CO₂ eq was reported). In the NIR, CRF table 4(KP-I)B.1.1 and CRF table 'accounting' of its 2016 annual inventory submission, the Party reported the value as -2 741.00 kt CO₂ eq/year (-2.741 Mt CO₂ eq)</p>	Not a problem

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding</i>	<i>Classification of problem</i>
5.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	The Party reported its forest management cap for the second commitment period of the Kyoto Protocol as 11 190 246 t CO ₂ eq in the original submission. However, the ERT further noted that Estonia's calculation was based on the emissions without LULUCF reported for 1990 in CRF table summary 2 of the 2016 annual inventory submission (39 965.169 kt CO ₂ eq), which does not consider the emissions of HFCs and SF ₆ in 1995. In accordance with the estimates calculated by the ERT, the forest management cap for the second commitment period of the Kyoto Protocol for Estonia is 11 199.075 t CO ₂ eq	Accuracy
6.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	Estonia did not provide the relevant information on how the background level of natural disturbances has been estimated in its original submission. In response to a question raised by the ERT during the review, the Party provided the calculation sheet developed by the Joint Research Centre, which shows that wildfires, insect attacks and disease infestations, extreme weather events and other disturbances (e.g. damage by game animals) are included in the background level, using Estonia's historical data for the period 2000–2012	Transparency
7.	Calculation of the commitment period reserve	The commitment period reserve of Estonia was calculated in accordance with the annex to decision 18/CP.7, the annex to decision 11/CMP.1 and decision 1/CMP.8, paragraph 18 The ERT noted that for the calculation of the commitment period reserve Estonia used the assigned amount determined in accordance with the terms of the joint fulfilment agreement of the European Union, its member States and Iceland. Furthermore, the ERT noted that the assigned amount for Estonia was fixed based on Annex II to Commission Decision 2013/162/EU and as adjusted by Commission Implementing Decision 2013/634/EU The ERT further noted that the commitment period reserve reported by Estonia in its original submission is 45 951 278.4 t CO ₂ eq, but should be 45 951 278 t CO ₂ eq, because a decimal value is not quoted for the commitment period reserve	Transparency
8.	National registry	In the NIR of its 2016 annual inventory submission, Estonia provided information on the agreement by the Party under Article 4 of the Kyoto Protocol to implement commitments jointly in accordance with decision 1/CMP.8, paragraphs 23–26. However, the ERT noted that no information specific to Estonia was provided in the NIR or in section 7 of its original submission. After the review week, the Party explained that the creation of the account had been postponed because the PPSR account does not legally exist in the European Union Registry until the Doha Amendment enters into force	Transparency
9.	National registry	The ERT noted that in its 2016 standard independent assessment report, Estonia indicated that the PPSR account is to be established in the next release of the consolidated registry software. After the review week, the Party explained that the creation of the account had been postponed because the PPSR account does not legally exist in the European Union Registry until the Doha Amendment enters into force	Transparency

Abbreviations: CRF = common reporting format, ERT = expert review team, FMRL = forest management reference level, GHG = greenhouse gas, HWP = harvested wood products, LULUCF = land use, land-use change and forestry, NIR = national inventory report, PPSR = previous period surplus reserve.

^a The report to facilitate the calculation of the assigned amount of the European Union is available at <http://unfccc.int/national_reports/initial_reports_under_the_kyoto_protocol/second_commitment_period_2013-2020/items/9499.php>.

^b At the time of publication of this report the European Union had not submitted yet the instrument of ratification of the Doha amendment, including information on the joint implementation of such amendment.

IV. Questions of implementation

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

Annex I

Key relevant data for Estonia

1. Table 4 provides key data and parameters for, and elections by, Estonia, relevant for the implementation of the second commitment period of the Kyoto Protocol. The information included in table 4 is as given by the Party in its report to facilitate the calculation of the assigned amount, unless otherwise specified.

Table 4

Key relevant data for Estonia^a

<i>Key information or parameter provided</i>	<i>Comment</i>
<i>General Party information</i>	
Did the Party have a QELRC in the first commitment period?	Yes
Estonia's QELRC in the second commitment period	Estonia will implement its reduction target under the second commitment period jointly with the European Union, its member States and Iceland as described in ID#1, table 3. The QELRC for the European Union, its member States and Iceland is 80% of the base-year emissions
Has the Party reached an agreement under Article 4 of the Kyoto Protocol to fulfil its commitments jointly with other Parties?	Yes
Base year	1990
Base year for HFCs, PFCs and SF ₆	1995
Base year for NF ₃	1995
Base-year emissions, as reported by the Party	39 965 169 t CO ₂ eq
Base-year emissions, final, as calculated by the ERT	39 996 697 t CO ₂ eq
<i>Information related to the calculation of the assigned amount and the commitment period reserve</i>	
Assigned amount, as reported by the Party and agreed by the ERT	51 056 976 t CO ₂ eq
Approach used to calculate the average annual emissions for the first three years of the first commitment period	This difference is calculated on the basis of the joint assigned amount of the European Union, its member States and Iceland and is based on the gases and sources listed in Annex A to the Kyoto Protocol
Difference between the assigned amount for the second commitment period and average annual	This difference is calculated on the basis of the joint assigned amount of the European Union,

<i>Key information or parameter provided</i>	<i>Comment</i>
emissions for the first three years of the first commitment period, multiplied by 8, as reported by the Party	its member States and Iceland and is based on the gases and sources listed in Annex A to the Kyoto Protocol
Commitment period reserve, as reported by the Party	45 951 278.4 t CO ₂ eq
Commitment period reserve, final value, as calculated by the ERT	45 951 279 t CO ₂ eq
<i>Information related to activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol</i>	
LULUCF parameters	Minimum tree crown cover: 30% Minimum land area: 0.5 ha Minimum tree height: 2 m
Elections under Article 3, paragraphs 3 and 4, of the Kyoto Protocol:	
(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
FMRL	-1.742 Mt CO ₂ eq/year
Technical corrections to the FMRL as reported in the original submission	Not reported in the original submission (see ID#3 and ID#4 in table 3)
3.5% of total base-year GHG emissions, excluding LULUCF, as reported by the Party	Not reported in the original submission
3.5% of total base-year GHG emissions, excluding LULUCF and including indirect CO ₂ emissions, final value, as calculated by the ERT	1 399.884 kt CO ₂ eq
3.5% of total base-year GHG emissions, excluding LULUCF and including indirect CO ₂ emissions, multiplied by 8, final value, as calculated by the ERT	11 199.075 kt CO ₂ eq
Will the Party exclude emissions from natural disturbances in accounting for:	
(a) Afforestation and reforestation	No
(b) Forest management	Yes

Abbreviations: ERT = expert review team, FMRL = forest management reference level, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, QELRC = quantified emission limitation and reduction commitment.

2. Tables 5–7 provide an overview of total greenhouse gas emissions and removals. Where a Party has decided to voluntarily report indirect carbon dioxide emissions, this is noted in the relevant table.

Table 5
Total greenhouse gas emissions for Estonia, base year^a–2014^b
(kt CO₂ eq)

	<i>Total GHG emissions excluding indirect CO₂ emissions</i>		<i>Total GHG emissions including indirect CO₂ emissions^c</i>		<i>Land-use change (Article 3.7bis as contained in the Doha Amendment)^d</i>
	<i>Total including LULUCF</i>	<i>Total excluding LULUCF</i>	<i>Total including LULUCF</i>	<i>Total excluding LULUCF</i>	
Base year	31 870.48	39 996.70	31 870.48	39 996.70	NA
1990	31 838.95	39 965.17	31 838.95	39 965.17	
1995	10 299.30	19 934.79	10 299.30	19 934.79	
2000	18 017.28	17 061.85	18 017.28	17 061.85	
2010	14 572.28	19 911.68	14 572.28	19 911.68	
2011	17 141.12	20 485.04	17 141.12	20 485.04	
2012	17 506.56	19 423.33	17 506.56	19 423.33	
2013	21 028.49	21 676.71	21 028.49	21 676.71	
2014	20 482.46	21 059.24	20 482.46	21 059.24	

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, NA = not applicable.

^a Base year refers to the base year under the Kyoto Protocol, which is 1990 for CO₂, CH₄ and N₂O, and 1995 for HFCs, PFCs, SF₆ and NF₃.

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

^c The Party has reported indirect CO₂ emissions in common reporting format table 6.

^d The value reported in this column refers to 1990.

Table 6

Greenhouse gas emissions by gas for Estonia, excluding land use, land-use change and forestry, 1990–2014^a(kt CO₂ eq)

	<i>CO₂^b</i>	<i>CH₄</i>	<i>N₂O</i>	<i>HFCs</i>	<i>PFCs</i>	<i>Unspecified mix of HFCs and PFCs</i>	<i>SF₆</i>	<i>NF₃</i>
1990	36 666.03	1 912.19	1 386.95	NO	NO	NO	NO	NO
1995	17 953.74	1 246.81	702.71	28.45	NO	NO	3.07	NO
2000	15 141.39	1 237.39	601.32	79.15	NO	NO	2.61	NO
2010	17 833.78	1 182.87	717.87	175.43	NO	NO	1.73	NO
2011	18 449.93	1 134.03	716.30	183.00	NO	NO	1.77	NO
2012	17 304.64	1 143.21	780.57	193.03	NO	NO	1.88	NO
2013	19 566.37	1 132.69	769.16	206.46	NO	NO	2.03	NO
2014	18 918.72	1 102.37	819.53	216.52	NO	NO	2.10	NO
Per cent change 1990–2014	–48.4	–42.4	–40.9	NA	NA	NA	NA	NA

Abbreviations: NA = not applicable, NO = not occurring.

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

^b CO₂ emissions include indirect CO₂ emissions reported in common reporting format table 6.

Table 7

Greenhouse gas emissions by sector for Estonia, 1990–2014^{a, b}(kt CO₂ eq)

	<i>Energy</i>	<i>IPPU</i>	<i>Agriculture</i>	<i>LULUCF</i>	<i>Waste</i>	<i>Other</i>
1990	35 950.56	961.64	2 682.87	–8 126.21	370.09	NO
1995	17 599.32	634.87	1 302.60	–9 635.49	398.01	NO
2000	14 743.64	697.41	1 057.25	955.42	563.55	NO
2010	17 746.17	537.47	1 165.05	–5 339.40	462.99	NO
2011	18 233.03	660.14	1 166.30	–3 343.91	425.56	NO
2012	16 857.08	904.87	1 254.32	–1 916.76	407.06	NO
2013	19 049.11	995.22	1 262.93	–648.22	369.44	NO
2014	18 697.85	706.68	1 317.93	–576.78	336.78	NO
Per cent change 1990–2014	–48.0	–26.5	–50.9	–92.9	–9.0	NA

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

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

^b Totals include indirect CO₂ emissions. Estonia did not report indirect CO₂ emissions separately in common reporting format table 6.

Annex II

Documents and information used during the review

A. Reference documents

“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”. Annex to decision 19/CMP.1. Available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf>.

“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol”. Annex to decision 15/CMP.1. Available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf>.

“Guidelines for review under Article 8 of the Kyoto Protocol”. Annex to decision 22/CMP.1. Available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf>.

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B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Türkson and Ms. Kaar (Ministry of the Environment, Estonia), including additional material on the methodology and assumptions used.

Annex III

Acronyms and abbreviations

CH ₄	methane
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
CRF	common reporting format
ERT	expert review team
FMRL	forest management reference level
GHG	greenhouse gas; unless indicated otherwise, total GHG emissions are the sum of CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs and SF ₆ without GHG emissions and removals from LULUCF
ha	hectare
HFCs	hydrofluorocarbons
HWP	harvested wood products
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
kt	kilotonne
LULUCF	land use, land-use change and forestry
m	metre
Mt	million tonnes
NA	not applicable
NF ₃	nitrogen trifluoride
NIR	national inventory report
NO	not occurring
N ₂ O	nitrous oxide
PFCs	perfluorocarbons
PPSR	previous period surplus reserve
QELRC	quantified emission limitation and reduction commitment
SF ₆	sulphur hexafluoride
t	tonne
UNFCCC	United Nations Framework Convention on Climate Change