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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 Croatia**

**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 annex I 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, 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.

GE.17-04874(E)



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## Contents

	<i>Paragraphs</i>	<i>Page</i>
I. Introduction .....	1–2	3
II. Summary of the reporting on mandatory elements in the report to facilitate the calculation of the assigned amount .....	3	4
III. Technical assessment of the elements reviewed.....	4	6
IV. Questions of implementation .....	5	11
<b>Annexes</b>		
I. Key relevant data for Croatia .....		12
II. Documents and information used during the review .....		17
III. Acronyms and abbreviations .....		19

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

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 Croatia was organized by the UNFCCC secretariat, in accordance with the “Guidelines for review under Article 8 of the Kyoto Protocol”.<sup>2</sup> The review took place from 19 to 24 September 2016 in Bonn, Germany, and was coordinated by Mr. Vitor Gois and Mr. Pedro Torres (UNFCCC secretariat). Table 1 provides information on the composition of the expert review team (ERT) that conducted the review of Croatia.

2. A draft version of this report was communicated to the Government of Croatia, which provided no comments.

Table 1

**Composition of the expert review team that conducted the review of Croatia**

<i>Area of expertise</i>	<i>Name</i>	<i>Party</i>
Generalist	Mr. Riccardo De Lauretis	Italy
	Mr. Giorgi Mukhigulishvili	Georgia
Energy	Mr. Lawrence Kotoe	Ghana
	Mr. Takashi Morimoto	Japan
	Ms. Audace Ndayizeye	Burundi
	Ms. Regine Röthlisberger	Switzerland
IPPU	Ms. Marisol Bacong	Philippines
	Mr. Kent Buchanan	South Africa
	Mr. Roman Kazakov	Russian Federation
Agriculture	Mr. Sorin Deaconu	Romania
	Mr. Asaye Ketema Sekie	Ethiopia
LULUCF	Mr. Max Collett	Australia
	Ms. Paula Ollila	Finland
	Mr. Juan José Rincón Cristobal	Spain
	Mr. Iordanis Tzamtzis	Greece
Waste	Ms. Violeta Hristova	Bulgaria
	Mr. Gustavo Mozzer	Brazil
Lead reviewers	Mr. Riccardo De Lauretis	
	Mr. Asaye Ketema Sekie	

<sup>1</sup> At the time of publication of this report, Croatia had not yet submitted the 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.

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

*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 Croatia 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 Croatia in its report to facilitate the calculation of the assigned amount

<i>Item</i>	<i>Comment</i>	
<i>General Party information</i>		
Dates of submission		Original submission: 15 June 2016  Revised submission: 9 November 2016
Are there any missing categories or issues related to completeness <sup>a</sup> in the reporting of GHG emissions by sources and removals by sinks for the base year or period?	Yes	For further information, see FCCC/ARR/2016/HRV
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 <sub>3</sub> ?	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	Yes	For further information, see ID#8 in table 3
(b) Calculation of base-year emissions	Yes	
(c) Calculation of the assigned amount	Yes	See annex I, table 4. For further information, see ID#1 in table 3
(d) Calculation of the commitment period reserve	Yes	See annex I, table 4. For further information, see ID#2 in table 3
(e) Application and calculation pursuant to decision 2/CMP.7, annex, paragraph 13	Yes	For further information, see ID#3 in table 3

<i>Item</i>		<i>Comment</i>
<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?	Yes	See annex I, table 4. For further information, see ID#6 in table 3
Has the Party indicated in the original submission the approach <sup>b</sup> 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#6 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#2 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, annex, paragraphs 6–8?	NA	See annex I, table 4
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?	NA	
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	See ID#7 in table 3
Has the Party identified for each activity under Article 3, paragraphs 3 and 4, of the Kyoto Protocol whether it intends to account annually or for the entire commitment period?	Yes	See annex I, table 4
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 ID#4 in table 3

<i>Item</i>		<i>Comment</i>
Has the Party reported the quantity amounting to 3.5% of the base-year GHG emissions, excluding LULUCF, in the original submission?	No	See annex I, table 4
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 ID#5 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.

<sup>a</sup> 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.

<sup>b</sup> 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 decisions 4/CMP.11 and 10/CMP.11, the review of the report to facilitate the calculation of the assigned amount for Croatia has been undertaken together with the review of the inventory submission for the first year of the second commitment period.<sup>3</sup> 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;

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

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 Croatia'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.<sup>a</sup> 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 Croatia is fixed, based on Annex II to European Commission decision 2013/162/EU and as adjusted by Commission implementing decision 2013/634/EU<sup>b</sup></p> <p>The ERT concludes that the assigned amount reported by Croatia is in accordance with the joint fulfilment agreement by the European Union, its member States and Iceland</p>	Not a problem
2.	Calculation of the commitment period reserve	<p>The commitment period reserve 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, and is estimated to be 146 043 977 t CO<sub>2</sub> eq. However, the ERT notes that the final value of the commitment period reserve should be rounded up to the nearest tonne for the purposes of inclusion in the compilation and accounting database. The final value is 146 043 978 t CO<sub>2</sub> eq</p>	Not a problem
3.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	<p>The ERT has identified that the Party did not include any information in accordance with decision 3/CMP.11, paragraph 11, in its report to facilitate the calculation of the assigned amount, with regard to the application and calculation, pursuant to decision 2/CMP.7, annex, paragraph 13, of the quantity amounting to 3.5% of total base-year GHG emissions, excluding LULUCF and including indirect CO<sub>2</sub> emissions, multiplied by 8. During the review week, the Party provided the necessary information on the calculation of the amount estimated pursuant to decision 2/CMP.7, annex, paragraph 13, estimating this amount to be equal to 8 737 297 t CO<sub>2</sub> eq. The ERT agrees with the quantity as calculated by Croatia, but notes that the final value of the cap should be rounded down to the nearest tonne for the purposes of inclusion in the compilation and accounting database. The final value is 8 737 296 t CO<sub>2</sub> eq</p>	Not a problem

ID#	Finding classification	Description of the finding	Classification of problem
4.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	Croatia has provided information on the forest management reference level (FMRL), including information on the technical correction implemented in the 2015 and 2016 national inventory submissions. However, the ERT has identified an inconsistency in the value reported by the Party, in providing the necessary information pursuant to annex I to decision 2/CMP.8, paragraph 1(i), for the FMRL as inscribed in the appendix to the annex to decision 2/CMP.7. In particular, Croatia reported an FMRL equal to $-4.906$ Mt CO <sub>2</sub> eq per year (assuming instantaneous oxidation for the harvested wood products pool), whereas the FMRL for Croatia as inscribed in the appendix to the annex to decision 2/CMP.7 equals $-6.289$ Mt CO <sub>2</sub> eq per year. During the review week, the Party explained that the value of $-4.906$ Mt CO <sub>2</sub> eq per year presented in the report to facilitate the calculation of the assigned amount refers to the FMRL corrected through the technical correction assuming instantaneous oxidation for the harvested wood products pool. The ERT considers that Croatia provided sufficient information during the review week in this regard	Not a problem
5.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	<p>Pursuant to decision 2/CMP.8, annex I, paragraph 1(k), in the report to facilitate the calculation of the assigned amount, Croatia has reported its intention to apply the provision to exclude emissions from natural disturbances (NDs) in accordance with decision 2/CMP.7, annex, paragraph 33</p> <p>However, the ERT has identified that Croatia did not provide the following relevant information in its report to facilitate the calculation of the assigned amount: (a) an explicit indication regarding which of the afforestation and reforestation activities under Article 3, paragraph 3, of the Kyoto Protocol and/or forest management under Article 3, paragraph 4, of the Kyoto Protocol the Party intends to apply the ND provision; (b) country-specific information on the background level of emissions associated with annual NDs that have been included in its FMRL; (c) information on how the background level(s) 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 have been estimated, and information on how it avoids the expectation of net credits or net debits during the commitment period, including information on how a margin is established, if a margin is needed; and (d) explicit information for which types of ND Croatia intends to apply the ND provision</p> <p>During the review week, Croatia indicated that it intends to apply the ND provision for afforestation activity under Article 3, paragraph 3, of the Kyoto Protocol (indicating that the reforestation activity under Article 3, paragraph 3, of the Kyoto Protocol does not occur in the country), and for forest management activity, under Article 3, paragraph 4, of the Kyoto Protocol. The Party also indicated that it intends to apply the ND provision for all types of ND identified so far in the country (i.e. wildfires, insects, pests and disease infestations, extreme weather events). However, the Party stated that, owing to the lack of complete and updated data and to the expectation that more accurate data would be available in the near future, no information could be provided during the review week related to points (b) and (c) above. Croatia further clarified that it has an ongoing project aiming to collect such data, but that the results are not yet available, and that it intends to determine the</p>	Not a problem

ID#	Finding classification	Description of the finding	Classification of problem
		<p>background level of emissions and the margin level, for both the afforestation/reforestation and forest management activities, in line with the provisions in the annex to decision 2/CMP.7 using the IPCC default method (Kyoto Protocol Supplement, section 2.3.9) when the results become available</p> <p>The ERT notes that, in accordance with decision 2/CMP.7, annex, paragraphs 33(a) and 33(b), when a Party indicates its intention to apply the ND provision to forest management and/or afforestation/reforestation activities during the second commitment period, the provision of information indicated in the same paragraph is a mandatory reporting requirement and this information shall also be part of the report to facilitate the calculation of the assigned amount pursuant to decision 2/CMP.8, annex I, paragraph 1(k). The ERT also notes that upon election of the activities (afforestation/reforestation and/or forest management, under Article 3, paragraphs 3 and 4, of the Kyoto Protocol) and the types of disturbances for which Croatia indicates its intention to apply the ND provision in the initial report, those shall be fixed for the second commitment period and cannot be changed</p> <p>Consequently, the ERT included this issue in the list of potential problems. In response to this list, the Party reaffirmed its intention to apply the ND provision for afforestation under Article 3, paragraph 3, of the Kyoto Protocol, and for forest management, under Article 3, paragraph 4, of the Kyoto Protocol</p> <p>In addition, Croatia defined wildfires as an ND for which it wishes to exclude emissions from accounting during the second commitment period under the ND provision for afforestation under Article 3, paragraph 3, of the Kyoto Protocol. In order to develop both the background level and the margin, the default method described in the annex to decision 2/CMP.7 and detailed in the Kyoto Protocol Supplement has been applied, using country-specific information for emissions for the calibration period 1990–2009. The background level of emissions and the margin have been estimated as 1.12 kt CO<sub>2</sub> eq and 3.98 kt CO<sub>2</sub> eq, respectively. For forest management under Article 3, paragraph 4, of the Kyoto Protocol, Croatia defined wildfires and extreme weather events (comprising (1) windbreaks and (2) snow-breaks and ice-breaks combined) as the types of NDs for which it wishes to exclude emissions from accounting during the second commitment period under the ND provision. In order to develop both the background level and the margin, the default method described in the annex to decision 2/CMP.7 and detailed in the Kyoto Protocol Supplement has been applied, using country-specific information for emissions for the calibration period 1990–2009. The background level of emissions and the margin have been estimated as 65.44 kt CO<sub>2</sub> eq and 121.86 kt CO<sub>2</sub> eq, respectively</p> <p>With regard to information on the background level of emissions associated with annual NDs that have been included in the FMRL, Croatia indicated that the FMRL is based on projections, without consideration of biomass losses due to ND events</p> <p>Further, Croatia noted that by applying the default method described in the</p>	

ID#	Finding classification	Description of the finding	Classification of problem
		<p>annex to decision 2/CMP.7 in order to develop both the background level and the margin, for afforestation under Article 3, paragraph 3, and for forest management under Article 3, paragraph 4, of the Kyoto Protocol, the expectation of net credits or net debits is avoided</p> <p>Lastly, Croatia reiterated in its response that it has an ongoing project aimed at collect new data, especially for the purposes of the ND provision, which will provide information on the ND type, year of occurrence and vegetation type affected (deciduous, coniferous, maquis and shrub). In particular, these data are expected to update existing data on extreme weather events (windbreaks, and snow-breaks and ice-breaks) for forest management under Article 3, paragraph 4, of the Kyoto Protocol. Croatia expressed its intention to revise the background level and the margin, with respect to the ND provision, when the results of this project become available, applying the default methodology described in the annex to decision 2/CMP.7 and detailed in the Kyoto Protocol Supplement</p> <p>The ERT considers that the information provided by Croatia in its response to the list of potential problems is in accordance with decision 2/CMP.7, annex, paragraph 33, pursuant to decision 2/CMP.8</p>	
6.	Reporting pursuant to Article 3.7 ter of the Doha Amendment	<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 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 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 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>	Not a problem
7.	National system	<p>The ERT has identified that no information has been provided by the Party in the report to facilitate the calculation of the assigned amount on 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. During the review, the Party explained that the national system of Croatia will continue to account in the second commitment period for land area that was accounted for in the first commitment period using the same identification system applied during the first commitment period. For land areas subject to forest management activity under Article 3, paragraph 4, of the Kyoto Protocol, land monitoring data and information provided by the National Forest Management Plans for the Republic of Croatia will be used. For land areas subject to afforestation/reforestation and deforestation activities under Article 3, paragraph 3, of the Kyoto Protocol, geo-referenced land-use data will be used. The ERT considers that Croatia provided sufficient information during the review</p>	Not a problem
8.	National registry	<p>In the national inventory report, the Party did not provide information on the establishment of a previous period surplus reserve (PPSR) account in its</p>	Not a problem

ID#	Finding classification	Description of the finding	Classification of problem
9.	Adjustments	<p>national registry. In response to the standard independent assessment, the Party stated that it will establish a PPSR account in the Consolidated System of European Union Registries and it will be available from October 2016</p> <p>The ERT has not identified the need to apply any adjustments to the estimate for the assigned amount for the second commitment period, as reported by Croatia in its report to facilitate the calculation of the assigned amount</p>	Not a problem

*Abbreviations:* Article 8 review guidelines = “Guidelines for review under Article 8 of the Kyoto Protocol”, ERT = expert review team, FMRL = forest management reference level, GHG = greenhouse gas, IPCC = Intergovernmental Panel on Climate Change, Kyoto Protocol Supplement = *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol*, LULUCF = land use, land-use change and forestry, ND = natural disturbance, PPSR = previous period surplus reserve.

<sup>a</sup> The report to facilitate the calculation of the assigned amount for 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](http://unfccc.int/national_reports/initial_reports_under_the_kyoto_protocol/second_commitment_period_2013-2020/items/9499.php)>.

<sup>b</sup> At the time of publication of this report, the European Union had not yet submitted its instrument of ratification of the Doha Amendment and information on the joint implementation of such an amendment.

#### IV. Questions of implementation

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

## Annex I

### Key relevant data for Croatia

1. Table 4 provides key data and parameters for, and elections by, Croatia, 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 Croatia

<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
Croatia's QELRC in the second commitment period	Croatia 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 <sub>6</sub>	1990
Base year for NF <sub>3</sub>	2000
Base-year emissions, as reported by the Party	31 204 631 t CO <sub>2</sub> 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	162 271 086 t CO <sub>2</sub> 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 emissions for the first three years of the first commitment period, multiplied by eight, as reported by the Party	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
Commitment period reserve, as reported by the Party	146 043 977 t CO <sub>2</sub> eq

<i>Key information or parameter provided</i>	<i>Comment</i>
Commitment period reserve, final value, as calculated by the ERT	146 043 978 t CO <sub>2</sub> eq
<i>Information related to activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol</i>	
LULUCF parameters	Minimum tree crown cover: 10% Minimum land area: 0.1 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	-6.289 Mt CO <sub>2</sub> eq/year
Technical corrections to the FMRL, as reported in the original submission	0.905 Mt CO <sub>2</sub> eq/year
3.5% of total base-year GHG emissions, excluding LULUCF and including indirect CO <sub>2</sub> emissions, 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 <sub>2</sub> emissions, final value	1 092 162 t CO <sub>2</sub> eq
3.5% of total base-year GHG emissions, excluding LULUCF and including indirect CO <sub>2</sub> emissions, multiplied by 8, as reported by the Party in the original submission	Not reported in the original submission
3.5% of total base-year GHG emissions, excluding LULUCF and including indirect CO <sub>2</sub> emissions, multiplied by 8, final value	8 737 296 t CO <sub>2</sub> eq
Will the Party exclude emissions from natural disturbances in accounting for:	
(a) Afforestation and reforestation	Yes
(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, as submitted by the Party. 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 Croatia, 1990<sup>a</sup>–2014<sup>b</sup>**  
 (kt CO<sub>2</sub> eq)

	<i>Total GHG emissions without indirect CO<sub>2</sub> emissions</i>		<i>Total GHG emissions with indirect CO<sub>2</sub> emissions<sup>c</sup></i>		<i>Land-use change (Article 3.7 bis as contained in the Doha Amendment)<sup>d</sup></i>
	<i>Total with LULUCF</i>	<i>Total without LULUCF</i>	<i>Total with LULUCF</i>	<i>Total without LULUCF</i>	
Base year	24 556.80	31 204.63	24 556.80	31 204.63	NA
1990	24 556.80	31 204.63	24 556.80	31 204.63	
1995	13 166.12	22 296.17	13 166.12	22 296.17	
2000	17 038.09	25 172.96	17 038.09	25 172.96	
2010	20 121.71	27 280.23	20 121.71	27 280.23	
2011	20 507.77	26 773.83	20 507.77	26 773.83	
2012	18 561.01	24 734.65	18 561.01	24 734.65	
2013	17 300.52	23 770.55	17 300.52	23 770.55	
2014	16 383.76	22 898.88	16 383.76	22 898.88	

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

<sup>a</sup> Base year refers to the base year under the Kyoto Protocol, which is 1990 for all gases except nitrogen trifluoride, for which the base year is 2000.

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

<sup>c</sup> The Party has not reported indirect carbon dioxide emissions in common reporting format table 6.

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

Table 6

**Greenhouse gas emissions by gas for Croatia, excluding land use, land-use change and forestry, 1990–2014<sup>a</sup>**(kt CO<sub>2</sub> eq)

	<i>CO<sub>2</sub></i> <sup>b</sup>	<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	23 390.08	3 770.72	2 793.15	NO	1 240.24	NO	10.45	NO
1995	16 992.80	2 986.64	2 248.33	57.28	NO	NO	11.12	NO
2000	19 789.12	2 785.34	2 387.67	199.21	NO	NO	11.62	NO
2010	21 183.71	3 243.51	2 300.07	543.95	0.03	NO	8.95	NO
2011	20 614.44	3 230.32	2 356.55	563.13	0.02	NO	9.37	NO
2012	18 776.38	3 167.15	2 216.92	564.96	0.03	NO	9.21	NO
2013	18 359.50	3 129.73	1 697.40	577.71	0.06	NO	6.15	NO
2014	17 607.32	3 080.41	1 621.47	582.77	0.06	NO	6.84	NO
<b>Per cent change 1990–2014</b>	<b>-24.7</b>	<b>-18.3</b>	<b>-41.9</b>	<b>NA</b>	<b>-100.0</b>	<b>NA</b>	<b>-34.5</b>	<b>NA</b>

Abbreviations: 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> Croatia did not report indirect carbon dioxide emissions in common reporting format table 6.

Table 7  
**Greenhouse gas emissions by sector for Croatia, 1990–2014<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	21 750.39	4 628.76	4 171.47	–6 647.83	654.01	NO
1995	16 066.24	2 468.46	3 021.94	–9 130.05	739.53	NO
2000	18 267.58	3 178.81	2 837.53	–8 134.87	889.04	NO
2010	19 813.76	3 480.34	2 593.75	–7 158.52	1 392.39	NO
2011	19 419.76	3 250.60	2 668.09	–6 266.06	1 435.38	NO
2012	17 726.79	2 976.65	2 597.52	–6 173.64	1 433.69	NO
2013	17 187.29	2 706.65	2 432.52	–6 470.03	1 444.09	NO
2014	16 241.44	2 871.32	2 300.11	–6 515.12	1 486.00	NO
<b>Per cent change 1990–2014</b>	<b>–25.3</b>	<b>–38.0</b>	<b>–44.9</b>	<b>–2.0</b>	<b>127.2</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> Croatia did not report indirect carbon dioxide emissions 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#page=14>.

“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#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 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>.

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

Responses to questions during the review were received from Ms. Vlatka Palčić (Ministry of Environmental and Nature Protection), including additional material on the methodology and assumptions used.

## Annex III

### Acronyms and abbreviations

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
ERT	expert review team
FMRL	forest management reference level
GHG	greenhouse gas
ha	hectare
HFC	hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
KP-LULUCF	LULUCF emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol
kt	kilotonne
LULUCF	land use, land-use change and forestry
m	metre
Mt	million tonnes
NA	not applicable
ND	natural disturbance
NF <sub>3</sub>	nitrogen trifluoride
NO	not occurring
N <sub>2</sub> O	nitrous oxide
PFC	perfluorocarbon
PPSR	previous period surplus reserve
QELRC	quantified emission limitation and reduction commitment
SF <sub>6</sub>	sulphur hexafluoride
t	tonne
UNFCCC	United Nations Framework Convention on Climate Change