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## Report of the technical review of the first biennial report of Croatia

Developed country Parties are requested, in accordance with decision 2/CP.17, to submit their first biennial report to the secretariat by 1 January 2014. This report presents the results of the technical review of the first biennial report of Croatia conducted by an expert review team in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”.

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## **I. Introduction and summary**

### **A. Introduction**

1. For Croatia, the Convention entered into force on 7 July 1996. Under the Convention, Croatia made a commitment to contribute to the achievement of the joint European Union (EU) economy-wide emission reduction target of 20 per cent of greenhouse gas (GHG) emissions by 2020 below the 1990 level. The EU also made an offer to move to a 30 per cent reduction conditional on other developed countries committing to a comparable target and developing countries contributing adequately under a new global climate change agreement.

2. This report covers the centralized technical review of the first biennial report (BR1)<sup>1</sup> of Croatia, coordinated by the secretariat, in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention” (decision 23/CP.19).

3. The review took place from 5 to 10 May 2014 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Hamid Alsadoon (Saudi Arabia), Mr. Kennedy Amankwa (Ghana), Mr. Fernando Farias (Chile), Ms. Violeta Hristova (Bulgaria), Mr. Hans Halvorson Kolshus (Norway), Ms. Asia Mohamed (Sudan), Mr. Rostislav Neveceral (Czech Republic), Mr. Asger Strange Olesen (Denmark), Ms. Natalya Parasyuk (Ukraine), Mr. Marcelo Rocha (Brazil), Ms. Lilia Taranu (Republic of Moldova) and Mr. Harry Vreuls (Netherlands). Mr. Amankwa and Mr. Vreuls were the lead reviewers. The review was coordinated by Ms. Xuehong Wang and Ms. Suvi Monni (secretariat).

4. During the review, the expert review team (ERT) reviewed each section of the BR1.

5. In accordance with decision 23/CP.19, a draft version of this report was communicated to the Government of Croatia, which did not provide any comments.

### **B. Summary**

6. The ERT conducted a technical review of the information reported in the BR1 of Croatia according to the “UNFCCC biennial reporting guidelines for developed country Parties” (hereinafter referred to as the UNFCCC reporting guidelines on BRs).

7. During the review, Croatia provided further relevant information, for example on the assessment of impacts of policies and measures (PaMs).

#### **1. Completeness and transparency of reporting**

8. Gaps and issues related to the reported information identified by the ERT are presented in table 1 below.

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<sup>1</sup> The biennial report submission comprises of the text of the report and the common tabular format (CTF) tables. Both the text and the CTF tables have been subject to the technical review.

**2. Timeliness**

9. The BR1 and the common tabular format (CTF) tables were submitted on 12 February 2014, after the deadline of 1 January 2014 mandated by decision 2/CP.17. Croatia informed the secretariat about its difficulties with the timeliness of its BR1 and CTF tables on 30 December 2013 in accordance with decision 23/CP.19, annex, paragraph 65. The ERT noted with concern the delay in the submission of the BR1 and the CTF tables. Croatia resubmitted the CTF tables on 26 May 2014. The resubmission includes revised information on GHG emissions and trends (para. 11 below), a description of the target (paras. 16 and 17 below), progress made towards achievement of targets (para. 25 below) and projections (para. 27 below). The recommendations included in this report are based on the resubmitted CTF tables. The ERT noted that in its BR1, the Party included copies of the CTF tables submitted on 12 February 2014, and the tables in BR1 therefore do not reflect the resubmitted CTF tables.

**3. Adherence to the reporting guidelines**

10. The information reported by Croatia in its BR1 and CTF tables is mostly in adherence with the UNFCCC reporting guidelines on BRs as per decision 2/CP.17 (see table 1).

Table 1

**Summary of completeness and transparency issues of reported information in the first biennial report of Croatia<sup>a</sup>**

<i>Sections of the biennial report</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to paragraphs</i>
Greenhouse gas emissions and trends	Complete	Transparent	
Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	Complete	Transparent	
Progress in achievement of targets	Mostly complete	Transparent	23
Projections	Complete	Transparent	
Provision of support to developing country Parties <sup>b</sup>	NA	NA	

*Abbreviation:* NA = not applicable.

<sup>a</sup> A list of recommendations pertaining to the completeness issues identified in this table is included in chapter III below (conclusions).

<sup>b</sup> Croatia is a Party not included in Annex II to the Convention and is therefore not obliged to adopt measures and fulfil obligations as defined in Article 4, paragraphs 3–5, of the Convention.

**II. Technical review of the reported information**

**A. All greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target**

11. Croatia provided a summary of information on GHG emission trends for the period 1990–2011 in its BR1 and CTF table 1. In the original submission of CTF tables (12 February 2014), the information reported in CTF table 1 was not consistent with the 2013 national GHG inventory submission. During the review, Croatia explained that this

occurred as the version of common reporting tables used in the preparation of CTF tables was not the latest version. Croatia resubmitted its CTF tables on 26 May 2014. The GHG inventory information reported in the resubmitted CTF tables is consistent with the 2013 national GHG inventory submission.

12. Total GHG emissions<sup>2</sup> excluding emissions and removals from land use, land-use change and forestry (LULUCF) decreased by 10.3 per cent between 1990 and 2011. Emission decreases were driven by a decline in economic activity and energy consumption in the period 1991–1994 (due to the war in Croatia) and by the economic crisis in the period 2008–2011. Further information on the review of emission and emission trends is provided in chapter II.A of the report of the technical review of the sixth national communication (IDR/NC6).

## **B. Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target**

13. Croatia participates in achieving the EU quantified economy-wide emission reduction target to achieve a 20 per cent reduction of emissions by 2020 compared with the 1990 base year level. The target for the EU and its member States is based on the European Union's climate and energy package. This includes the European Union Emissions Trading System (EU ETS) and the EU effort-sharing decision (ESD). This legislative package regulates emissions of carbon dioxide (CO<sub>2</sub>), methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride and nitrogen trifluoride, using global warming potential values from the fourth assessment report of the Intergovernmental Panel on Climate Change to aggregate EU GHG emissions up to 2020.

14. Croatia does not have a national quantified economy-wide emission reduction target. Emissions that fall under the EU ETS sector contribute to the European Union wide EU ETS target of a 21 per cent reduction by 2020 compared with 2005. For the non-EU ETS sector (excluding LULUCF), the EU ESD sets a positive limit for Croatia, which is an 11 per cent increase by 2020 compared with 2005.

15. The EU also made an offer to move to a 30 per cent reduction conditional on other developed countries committing to a comparable target and developing countries contributing adequately under a new global climate change agreement.

16. In its BR1 and CTF table 2, Croatia reported a description of the target (referred to in para. 13 above), including associated conditions and assumptions. In the original submission of CTF tables (submitted on 12 February 2014), Croatia indicated that LULUCF is included in the target, but in the revised CTF tables (submitted on 26 May 2014) Croatia correctly reported that its target covers all sectors except LULUCF.

17. In the original submission of CTF tables, Croatia reported assigned amount units (AAUs) in CTF table 2(e)I, whereas in the revised CTF tables, table 2(e)I was blank as Croatia has not yet decided whether to use market-based mechanisms under the Convention to achieve its target.

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<sup>2</sup> In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of carbon dioxide equivalent excluding land use, land-use change and forestry, unless otherwise specified.

## C. Progress made towards the achievement of the quantified economy-wide emission reduction target

18. In its BR1 and CTF table 3, Croatia reported information on its mitigation actions implemented and planned since its fifth national communication (NC5) to achieve its target. Croatia also reported in its CTF table 4 on the use of units from market-based mechanisms and LULUCF to achieve its target.

19. The ERT reviewed the reported information and provided its assessment of progress made towards achieving the target. The ERT noted progress made by Croatia.

20. Croatia listed all the mitigations actions that are implemented and/or planned in order to fulfil the quantified economy-wide emission reduction target as a common commitment of the EU, but did not estimate the mitigation impact per action. Croatia also reported projections covering sectors included and not included in the EU ETS. The ERT considers that reporting (1) mitigation impact per action and (2) projected emissions for the EU ETS sector and the non-EU ETS sector separately could improve the transparency of information and enable an assessment by the ERT of the progress made by Croatia towards its emission reduction target.

### 1. Mitigation actions and their effects

21. Croatia provided in its BR1 a copy of CTF table 3 with a reference to the sixth national communication (NC6) for the description of its package of mitigation actions introduced to achieve its target. The BR1 provided information on mitigation actions organized by sector and by gas. A detailed review of the reported information is provided in chapter II.B of the IDR/NC6.

22. Croatia did not estimate the GHG impacts of individual PaMs (except for two PaMs in the waste sector) and used the notation key not estimated (“NE”) in CTF table 3. During the review, Croatia provided information on the ex-ante assessment on a sectoral level for 2015–2030, as reported in the NC6, and informed the ERT that it is in a process of improving its bottom-up analysis of mitigation impact. Table 2 provides a summary of the key mitigation actions reported by Croatia to achieve its target. The ERT encourages Croatia to provide estimates of mitigation impacts in its next biennial report (BR).

Table 2

#### Summary of information on mitigation actions reported by Croatia

<i>Sectors affected</i>	<i>List of key mitigation actions</i>	<i>Estimate of mitigation impact (kt CO<sub>2</sub> eq)</i>
<b><i>Policy framework and cross-sectoral measures</i></b>	Full-scale inclusion of the plant and aircraft operators in EU ETS from 1 January 2013; adoption of a plan for use of funds obtained through the sale of emission allowances through auctions; CO <sub>2</sub> emission tax; intensification of use of innovative information and communication technologies to reduce greenhouse gas emissions	NE
<b><i>Energy</i></b>		5 604
Energy supply	Usage of biodegradable fraction of municipal waste in public electricity and heating plants	NE
Renewable energy	Support for the use of renewable energy sources in electricity production; promotion of the use of renewable energy sources in energy production for	NE

<i>Sectors affected</i>	<i>List of key mitigation actions</i>	<i>Estimate of mitigation impact (kt CO<sub>2</sub> eq)</i>
	heat/cooling; promotion of the use of renewable energy sources and energy efficiency by the Croatian Bank for Reconstruction and Development and by the Fund for Environmental Protection and Energy Efficiency	
<b>Energy efficiency</b>	Promotion of energy efficiency in households and services through project activities; measurement and informative calculation of energy consumption; labelling of the energy efficiency of household appliances; eco-design of energy-using products; energy-efficiency projects implemented through energy services	NE
<b>Transport</b>	Prescribing of limit values for components and characteristics of liquid petroleum fuels; provision of information to consumers on fuel economy and CO <sub>2</sub> emissions of new passenger cars; implementation of the pilot project and the establishment of eco-driving training for drivers of road vehicles; promotion of the production and use of biofuels in transport; modification of the special fee payment system for the environment for motor vehicles; financial incentives for the purchase of hybrid and electric vehicles; development of infrastructure for electric vehicles in urban areas; development of sustainable transport systems in urban areas	416
<b>Industry</b>	Energy audits in industry; promotion of the construction of cogeneration facilities; usage of refuse-derived fuel in the cement industry; ban and reduction of the consumption of controlled and new substances and fluorinated GHGs; technical and organizational measures for collecting, recycling and recovering controlled substances and fluorinated GHGs; preventive measures for the uncontrolled leaking of fluorinated GHGs	949
<b>Agriculture</b>	Preparation of a study about possibilities for applying measures to reduce GHG emissions in the agricultural sector	79
<b>Forestry/LULUCF</b>	Preparation of a cost-benefit analysis of reforestation on new surfaces and the biological regeneration of forests; development of action plan for the LULUCF sector	1 819
<b>Waste management</b>	Avoidance of the generation and reduction of municipal waste; reduction of disposed biodegradable municipal waste; increase in the quantity of sorted and recycled municipal waste; increase of the coverage of the organized municipal waste collection systems; methane flaring or the use of methane as fuel for electricity production; production of fuel from waste; use of biogas from bioreactors for electricity and heat production; thermal treatment of municipal waste and sludge from wastewater treatment	685

*Note:* The GHG reduction estimates by sector are equivalent to the differences between the emissions in the ‘without measures’ and the ‘with measures’ scenarios in carbon dioxide equivalent for 2020.

*Abbreviations:* EU ETS = European Union Emissions Trading System, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, NE= not estimated.

23. In the BR1, Croatia did not provide information on changes in its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its target. The ERT recommends that Croatia report any changes in its next BR.

24. In the BR1, Croatia did not provide information on the assessment of economic and social consequences of response measures. During the review, Croatia provided information on the matter, referring to the impact assessment of European Union policies. The ERT encourages Croatia to provide in its next BR information about the assessment of economic and social consequences of response measures.

## **2. Estimates of emission reductions and removals and the use of units from the market-based mechanisms and land use, land-use change and forestry**

25. Croatia reported in its BR1 and CTF table 4 on its plans to use market-based mechanisms under the Convention and other mechanisms and on the contribution from LULUCF. In its original submission of CTF tables (12 February 2014), Croatia reported in CTF table 4 on the contribution from LULUCF, but in the revised CTF tables (26 May 2014) the contribution from LULUCF was reported as ‘not applicable’ (“NA”), as the target excludes LULUCF. Croatia explained that up to now no units from market-based mechanisms (i.e. certified emission reductions and emission reduction units) have been used and that only domestic measures have been applied. In addition, in its original submission of CTF tables Croatia used the notation key ‘not occurring’ (“NO”) for the use of units from market-based mechanisms in 2011 and 2012, whereas in the revised CTF tables Croatia reported the amount of annual average AAUs. Table 3 illustrates how Croatia reported on the use of units from market-based mechanisms and LULUCF to achieve its target in its BR1 and during the review.

## **3. Projections**

26. Croatia has provided in its BR1 and CTF tables 5 and 6 information on its updated projections for 2020 and 2030. A detailed review of the reported information is provided in chapter II.C of the IDR/NC6.

27. In the original submission of CTF tables, the reported projections were not consistent with those reported in the NC6 submitted in conjunction with the BR1 (12 February 2014). During the review, Croatia informed the ERT that correct values are those reported in the NC6. In the revised CTF tables (26 May 2014), Croatia reported projections which were consistent with those reported in the NC6.



Table 3  
**Summary information on the use of units from market-based mechanisms and land use, land-use change and forestry as part of the reporting on the progress made towards achievement of the target by Croatia**

<i>Year</i>	<i>Emissions excluding LULUCF (kt CO<sub>2</sub> eq)</i>	<i>LULUCF emissions/removals (kt CO<sub>2</sub> eq)<sup>a</sup></i>	<i>Emissions including LULUCF (kt CO<sub>2</sub> eq)<sup>a</sup></i>	<i>Use of units from the market-based mechanisms (kt CO<sub>2</sub> eq)<sup>b</sup></i>
Base year (1990)	31 693.47	NA	NA	0
2010	28 780.65	NA	NA	0
2011	28 421.47	NA	NA	0
2012	NE	NA	NA	0

*Abbreviations:* LULUCF = land use, land-use change and forestry, NA = not applicable NE = not estimated.

<sup>a</sup> The European Union joint commitment to reduce greenhouse gas emissions by 20 per cent by 2020 compared with 1990 does not include emissions/removals from land use, land-use change and forestry

<sup>b</sup> Croatia, in common tabular format table 4, reported the use of units from market-based mechanisms of 29,755.70 kt CO<sub>2</sub> eq in 2011 and 2012. The reported units correspond to the average annual assigned amount for the period 2008–2012.

28. The GHG emission projections in the BR1 and CTF tables include scenarios ‘with measures’, ‘with additional measures’ and ‘without measures’ for 2020 and 2030. Projections are presented on a sectoral basis, and on a gas-by-gas basis for all GHGs (treating HFCs and PFCs collectively in each case). Projections are also provided for a national total, using global warming potential values.

29. In its BR1, Croatia did not provide information on the changes since the previous national communication in the methodologies used for the preparation of projections, but this information was provided in the NC6. The projections described in the NC5 are based on the assumption of stable economic growth of gross domestic product (GDP) of about 5 per cent per annum up to 2020. The economic and financial crisis resulted in a GDP decrease. Instead of the estimated GDP growth of 21.5 per cent in the period 2009–2012, a decrease in GDP of 9.0 per cent occurred. Therefore, the projected emissions presented in the NC6 for 2020 are 23–24 per cent below those presented in the NC5, and the projected emissions for 2030 are 24–31 per cent below those presented in the NC5.

30. The ERT noted information reported by Croatia on projected emission trends by 2020. According to the reported information, the projected emission trends are 23.1 per cent above the base year by 2020 in the ‘without measures’ scenario and 1.3 per cent below the base year for both the ‘with measures’ and ‘with additional measures’ projections. The ERT noted that the reporting of projected emissions for the EU ETS and non-EU ETS sectors separately could improve the transparency of information and enable an assessment by the ERT of Croatia’s progress towards its emission reduction target.

### III. Conclusions

31. The ERT conducted a technical review of the information reported in the BR1 and CTF tables of Croatia in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the BR1 and CTF tables provide a good overview of information on emissions and removals related to the quantified economy-wide emission reduction target, a description of the target and the progress made by Croatia to achieve its target. During the

review, Croatia provided additional information, including that on plans to estimate the impacts of PaMs. Croatia also resubmitted its CTF tables with revised information on GHG emissions and trends, a description of the target, progress made in the achievement of targets and projections.

32. Croatia's emissions and removals related to the target for 2011 were estimated to be 10.3 per cent below its 1990 level excluding LULUCF. Emission decreases were driven by a decline in economic activities and energy consumption in the period 1991–1994 (due to the war in Croatia) and by the economic crisis in the period 2008–2011.

33. Croatia participates in achieving the EU quantified economy-wide emission reduction target to achieve a 20 per cent reduction of emissions by 2020 compared with the base-year (1990) level. Croatia does not have a national quantified economy-wide emission reduction target. Emissions that fall under the EU ETS sector contribute to the European Union wide EU ETS target of a 21 per cent reduction by 2020 compared with 2005. For the non-EU ETS sector (excluding LULUCF), the EU ESD sets a positive limit for Croatia, which is an 11 per cent increase by 2020 compared with emissions in 2005.

34. The description of the economy-wide emission reduction target in the BR1 and CTF tables includes information regarding the base year, gases and sectors covered and global warming potential values. Croatia's target excludes LULUCF and Croatia has not yet decided about its use of market-based mechanisms under the Convention.

35. Croatia provided in its BR1 and CTF tables comprehensive and well-organized information on its package of PaMs implemented, adopted and planned that address all sectors and GHGs. The PaMs with the most significant mitigation impact are in the energy supply sector: the EU ETS; a regulation on the minimum share of electricity that must be produced through stimulated production from renewable energy sources and cogeneration; and energy efficiency measures included in Croatia's National Energy Efficiency Action Plans.

36. According to the reported information, the projected emission trends are 23.1 per cent above the base year by 2020 in the 'without measures' scenario and 1.3 per cent below the base year both in the 'with measures' and 'with additional measures' scenarios.

37. In the course of the review, the ERT formulated several recommendations relating to the completeness of Croatia's reporting under the Convention. The key recommendation<sup>3</sup> is that Croatia improve the completeness of reporting by including in the next BR the information on changes in its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of progress made towards its target.

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<sup>3</sup> The recommendation is given in full in the relevant section of this report.

(a)

**Annex****Documents and information used during the review****A. Reference documents**

“UNFCCC biennial reporting guidelines for developed country Parties”. Annex to decision 2/CP.17.

Available at <<http://unfccc.int/resource/docs/2011/cop17/eng/09a01.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 23/CP.19. Available at <<http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=20>>.

FCCC/ARR/2013/HRV. Report of the individual review of the annual submission of Croatia submitted in 2013. Available at <<http://unfccc.int/resource/docs/2014/arr/hrv.pdf>>.

FCCC/IDR.5/HRV. Report of the in-depth review of the fifth national communication of Croatia. Available at <<http://unfccc.int/resource/docs/2011/idr/hrv05.pdf>>.

Sixth national communication of Croatia. Available at <[http://unfccc.int/files/national\\_reports/annex\\_i\\_natcom\\_/application/pdf/hrv\\_nc6.pdf](http://unfccc.int/files/national_reports/annex_i_natcom_/application/pdf/hrv_nc6.pdf)>.

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2014 GHG inventory submission of Croatia. Available at <[http://unfccc.int/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/items/8108.php](http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php)>.

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

Responses to questions during the review were received from Ms. Vlatka Palčić (Department for Climate and Ozone Layer Protection), including additional material on updated policies and measures, greenhouse gas projections, and recent climate policy developments in Croatia. The following document<sup>1</sup> was also provided by Croatia:

Ministry of Economy, Ministry of Construction and Physical Planning. 2013. *Second National Energy Efficiency Action Plan for the Period until the End of 2013*.

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<sup>1</sup> Reproduced as received from the Party.