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Report of the technical review of the first biennial report of Luxembourg

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 Luxembourg 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 Luxembourg the Convention entered into force on 7 August 1994. Under the Convention, Luxembourg made a commitment to contribute to the joint European Union (EU) member States economy-wide greenhouse gas (GHG) emission reduction target of 20 per cent below the 1990 level by 2020.
2. This report covers the in-country technical review of the first biennial report (BR1) of Luxembourg, 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 24 February to 1 March 2014 in the city of Luxembourg, Luxembourg, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Rizaldi Boer (Indonesia), Mr. Koen E.L. Smekens (Belgium), Mr. Christoph Streissler (Austria) and Mr. Samir Tantawi (Egypt). Mr. Boer and Mr. Streissler were the lead reviewers. The review was coordinated by Ms. Sylvie Marchand (secretariat).
4. During the review, the expert review team (ERT) examined each section of the BR1, including the common tabular format (CTF) tables.
5. In accordance with decision 23/CP.19, a draft version of this report was communicated to the Government of Luxembourg, which provided comments that were considered and incorporated, as appropriate, in this final version of the report.

B. Summary

6. The ERT conducted a technical review of the information reported in the BR1 of Luxembourg 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, Luxembourg provided further relevant information on elements that are also required to be reported in the sixth national communication (NC6). No additional information was provided on elements that are specific to the BR1.

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.

Table 1

Issues related to completeness and transparency of reported information in the first biennial report of Luxembourg

<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	Complete	Mostly transparent	15, 18

<i>Sections of the biennial report</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to paragraphs</i>
the attainment of the quantified economy-wide emission reduction target			
Progress in achievement of targets	Partially complete	Partially transparent	23, 28, 32
Projections	Partially complete	Mostly transparent	35, 36
Provision of support to developing country Parties	Partially complete	Mostly transparent	41, 42, 48, 49

2. Timeliness

9. The BR1 text had not yet been submitted by Luxembourg at the time of the in-country visit. The CTF tables were submitted on 22 February 2014, after the deadline of 1 January 2014 mandated by decision 2/CP.17. Luxembourg informed the secretariat about its difficulties with the timeliness of its BR1 and CTF tables on 26 December 2013 in accordance with decision 23/CP.19, paragraph 65. Luxembourg submitted a complete BR1 on 14 March 2014, two weeks after the review week, which is allowed by decision 23/CP.19, paragraph 67, in cases where there is missing information. The ERT noted with concern the delay in the submission of the BR1 and recommends Luxembourg submit its next biennial report (BR), including the CTF tables, on time.

3. Adherence to the reporting guidelines

10. The information reported by Luxembourg in its BR1 is partially in adherence to the UNFCCC reporting guidelines on BRs as per decision 2/CP.17 (see table 1).

II. Technical review of the reported information

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

11. Luxembourg has provided a complete and transparent summary of information on GHG emission trends for the period 1990–2011. This information is complete and transparent, and consistent with the 2013 national GHG inventory submission.

12. Total GHG emissions¹ excluding emissions and removals from land use, land-use change and forestry (LULUCF) decreased by 6.2 per cent between the 1990 base year² and 2011, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 10.9 per cent over the same period.

13. GHG emissions were driven by a decrease in CO₂ emissions from the iron and steel sector, as the steel plants in Luxembourg changed from a blast furnace process to an electric arc furnace process in the period 1994–1998. These factors outweighed major increases in CO₂ emissions that occurred in the road transport sector from 1998 onwards owing to a higher consumption due to population and mobility increases, by a substantial increase in trans-border commuting of the labour force, and by fuel price differences with bordering countries. The operation of a gas-fired power plant since 2002 contributed to the increase in CO₂ emissions. Further information on the review of emission and emission

¹ In this report, the term “total GHG emissions” refers to the aggregated national GHG emissions expressed in terms of carbon dioxide equivalent excluding LULUCF, unless otherwise specified.

² For the purposes of reporting in the BR, the base year under the Convention for Luxembourg is 1990 for all gases.

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

14. In its BR1 and CTF tables 2, Luxembourg reported a complete and mostly transparent description of its quantified economy-wide emission reduction target, referred to henceforth as the target, including associated conditions and assumptions. Further information on assumptions, conditions and methodologies is provided in chapter II.C of the IDR/NC6.

15. In the text of its BR1, Luxembourg reported information about its 2020 target under the Kyoto Protocol's second commitment period (CP2). Since reporting under the BR relates to information under the Convention, the ERT recommends that Luxembourg report information in the BR and CTF tables 2 that is consistent with its target under the Convention.

16. Under the Convention, Luxembourg contributes to the EU quantified economy-wide target to achieve 20 per cent reduction of emissions by 2020 compared with the 1990 base-year level. At the time of the review, 2020 national targets for EU member States under the Convention were not yet decided. The target for the EU and its member States is formalized in the climate and energy package legislation. This includes the European Union Emissions Trading System (EU ETS) and the effort-sharing decision (ESD). This legislative package regulates emissions of carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃) using global warming potentials from the Second Assessment Report of the Intergovernmental Panel on Climate Change to aggregate EU GHG emissions up to 2020.

17. The regulation of the emissions covered by the EU ETS entered into force on 1 January 2005, and the new period started in 2013 based on a yearly reduction equal to 1.74 per cent of the average allocation in the period 2008–2012, extrapolated starting in 2010, leading to a 21 per cent GHG emissions reduction by 2020 compared to the 2005 level. As of 2013, emissions of sectors not covered by the EU ETS are regulated by member State specific targets, based on average emissions from 2008 to 2010 and on gross domestic product (GDP), which leads to a collective reduction by all the member States of 10 per cent by 2020 compared with 2005 at the EU level. In accordance with the EU ESD, this translates to a 20 per cent reduction by 2020 (an emissions level of 8,085 kt CO₂ eq) for Luxembourg, since it is the richest among member States in terms of GDP per capita. In line with the EU target, Luxembourg does not include emissions or removals from the LULUCF sector in defining its quantified economy-wide target.

18. Luxembourg reported in its BR1 that it plans to use the provisions foreseen by the EU ESD that allow certified emissions reduction and emissions reduction units (ERUs) for compliance but did not provide the related quantitative information in CTF table 2(e)I, mentioning that it cannot report numbers yet. The ERT noted that "NE" is used in table 2(e)I without defining the abbreviation. Because the reporting guidelines do not provide for the use of notation keys, as is the case for GHG inventories, the ERT recommends that Luxembourg improve the transparency of its reporting by explaining the rationale behind the use of each of these notation keys in CTF table 2(e)I and in all other tables where such notation keys are used. The ERT encourages Luxembourg to include the relevant quantitative information in CTF table 2(e)I as it becomes available.

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

19. In its BR1 and CTF tables 3 and 4, Luxembourg reported partially complete and partially transparent information on its mitigation actions implemented and planned since its fifth national communication to achieve its target. Luxembourg also reported on LULUCF emissions and removals and on its plans to use units from market-based mechanisms to achieve its target for the first commitment period of the Kyoto Protocol (CPI).

20. Across the EU, it is expected that the market mechanism of the Emissions Trading System (ETS) will guarantee that emissions from sectors falling under this scheme (mainly large point sources such as power plants and industrial facilities) will achieve the 2020 target. Luxembourg also provided information on how the EU ESD translates into emissions levels for the sectors not included in the EU ETS – for Luxembourg mainly emissions from buildings and transport. The emissions from sectors not covered under the EU ETS were at 10,046 kt CO₂ eq³ in 2011. These emissions were therefore 24.3 per cent above their 2020 targeted level of 8,085 kt CO₂ eq, associated with Luxembourg's 20 per cent reduction target below the 2005 level for emissions not covered under the EU ETS. Luxembourg reported in its BR1 that it will not achieve its non-EU ETS target with existing and planned mitigation actions, and plans to use units from market-based mechanism.

21. The ERT reviewed the reported information and provided its assessment of progress made towards achieving the target. The ERT noted limited progress made by Luxembourg and encourages the Party to explore to the full its domestic mitigation potential.

1. Mitigation actions and their effects

22. Luxembourg has provided, in its BR1 and CTF table 3, partially complete and partially transparent information on its package of mitigation actions that were introduced to achieve its target. A detailed review of the 51 policies and measures (PaMs) on which the mitigation actions listed in CTF table 3 are based is provided in chapter II.B of the IDR/NC6.

23. The information on mitigation actions does not cover all sectors where mitigation actions are in place, and was not organized by sector and by gas as required by the reporting guidelines. The ERT recommends that Luxembourg report on its mitigation actions by sector and by gas for all sectors where such actions are in place in its next BR.

24. Luxembourg reported that the 51 implemented, adopted and planned measures and actions of the second Action Plan for Reducing CO₂ Emissions (the policy framework developed by the country to achieve its reduction obligations), were grouped into 20 entries in its CTF table 3. The 20 groups of mitigation actions covered mostly the energy and transport sectors, as well as cross-cutting actions. According to the Party, the 20 entries correspond to the categories of PaMs reported in the NC6. However, the ERT, considering that the UNFCCC reporting guidelines on BRs request that information in CTF table 3 be provided for each mitigation action, could not directly establish the correspondence between the PaMs in the NC6 and the mitigation actions in the BR1. The ERT encourages Luxembourg to enhance the transparency of CTF table 3 and the consistency of information on PaMs and mitigation actions between its national communication (NC) and BR by reporting information in CTF table 3 for each mitigation action.

³ This represents about 83 per cent of total GHG emissions in 2011.

25. The ERT also noted that the description of the individual mitigation actions was in some instances clearer than the description of the corresponding PaMs in the NC6. However, the grouping of mitigation actions in the BR1 somehow obscures the implementation status of the single measures. For instance, the group of actions entitled 'Energy consumption – energy efficiency, housing' is listed as implemented while in the NC6, some of the PaMs which make up this group of actions are listed as adopted or planned. Furthermore, the indicated start year of implementation is marked as 'not estimated' in several instances while for implemented actions the year of implementation can be regarded as the start year. Furthermore the ERT noted that Luxembourg did not follow the suggestion of the reporting guidelines to mark the mitigation actions included in the 'with measures' scenario of the projections with an asterisk. The ERT encourages Luxembourg to enhance the transparency of its reporting by identifying clearly and consistently the implementation status of each mitigation action, consistent with what is reported in the NC6, where appropriate.

26. Luxembourg did not report on the estimated mitigation effects of each of the 20 groups of actions in CTF table 3, as only 4 of these had estimates for 2015, 2020, 2025 or 2030. Luxembourg explained that estimating the effects of mitigation actions should be done considering at the same time the mitigation actions from the third National Energy Efficiency Plan, which was not published yet at the time of the review. The ERT strongly encourages Luxembourg to report on the effects of its individual mitigation actions in its next BR submission.

27. Overall, the information provided on the mitigation actions is not sufficient to assess the extent to which Luxembourg's mitigation actions have or could contributed to achieving the target. Table 2 provides a concise summary of the key mitigation actions implemented by Luxembourg to achieve its target.

Table 2

Summary of information on mitigation actions reported by Luxembourg

<i>Sectors affected</i>	<i>List of key policies and measures</i>	<i>Estimate of mitigation impact in 2020 (kt CO₂ eq)</i>
<i>Policy framework and cross-sectoral measures</i>	Promotion of eco-technologies in invention and innovation	NE
	Promotion of sustainable and environment-friendly public purchases and procurements as well as public planning	NE
<i>Energy</i>		
Energy supply	Promotion of alternative and renewable energy sources, in particular biogas and renewable heat	NE
Renewable energy	Increase in renewable energy use in the manufacturing sector by information instruments	NE
Energy efficiency	Increase in energy efficiency in the manufacturing sector by voluntary agreement	NE
Residential and commercial sectors	Specific measures to promote renewable energy and energy efficiency in all building categories (residential, public and commercial) by subsidies as well as by information and planning instruments	NE
<i>Transport</i>	For road fuels, consideration of:	

<i>Sectors affected</i>	<i>List of key policies and measures</i>	<i>Estimate of mitigation impact in 2020 (kt CO₂ eq)</i>
	taxation (being studied)	NE
	biofuels	550.60
	alternative means of propulsion	172.65
	Vehicle taxation; promotion of public transport, cycling and walking	NE
<i>Industrial sectors</i>	No mitigation actions listed	
<i>Agriculture</i>	No mitigation actions listed	
<i>Forestry</i>	No mitigation actions listed	
<i>Waste management</i>	No mitigation actions listed	

Abbreviation: NE = not estimated.

28. Luxembourg did not provide information on changes in its domestic institutional arrangements in the BR1. Information is however partly contained in the NC6. The ERT recommends that Luxembourg include information on changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its target in its next BR.

29. The NC6 contains information on overall responsibility for climate change policymaking, which lies with the Department of the Environment within the Ministry of Sustainable Development and Infrastructure of Luxembourg. Responsibility for the implementation and delivery of these strategies lies with different ministries and agencies.

30. Implementation of the Convention is underpinned by the second Action Plan for Reducing CO₂ Emissions (see para. 24). The Climate Agreement with the municipalities is a further important mitigation action serving the implementation of effective measures to combat climate change.

31. Luxembourg did not provide information on the assessment of the economic and social consequences of response measures. However, corresponding information is contained in the NC6. Furthermore, the 2013 national inventory report and the additional information provided during the review refer to several initiatives of Luxembourg aimed at minimizing adverse impacts. The ERT encourages Luxembourg to enhance transparency of its BR1 by describing the assessment of economic and social consequences of response measures in its next BR, and/or cross-referencing to more comprehensive descriptions, where appropriate.

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

32. Luxembourg reported in CTF tables 4, 4(a)II and 4(b) complete and mostly transparent information on its plans to use units from market-based mechanisms and on the contribution from emissions from LULUCF under in achieving its target. The ERT noted that in CTF table 4, Luxembourg reported on progress for the Kyoto Protocol CP1 for the years 1990 and 2008–2012. Since the reporting of information on targets and progress towards it in the BRs is under the Convention, although specific information on units and emissions covered by the Kyoto Protocol have to be reported where relevant, the ERT recommends that Luxembourg report in the text of its BR and CTF tables 4 on its plans to use units from market-based mechanisms and emissions and removal from LULUCF

activities towards the achievement of its 2020 quantified economy-wide emission reduction target under the Convention.

33. In reporting emissions and/or removals from the LULUCF sector based on the accounting approach applied taking into consideration any relevant decisions of the COP and the activities and/or lands that will be accounted for to achieve its target, Luxembourg has reported on its elected activities under Article 3, paragraph 3, of the Kyoto Protocol and is reporting only for afforestation and reforestation. Table 3 illustrates how Luxembourg plans to use units from market-based mechanisms and LULUCF to achieve its target. During the review, Luxembourg mentioned that it plans to use units from market mechanisms to the amount of 14,197 kt CO₂ eq, divided by five equal share for the period 2008–2012, which is an update from the 15,106 kt CO₂ eq reported in the NC6. Luxembourg also mentioned during the review that it has already secured a total 13,330 kt of units, paid through the Climate and Energy Fund, set up to finance the purchase of units from Kyoto Protocol mechanisms.

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 Luxembourg

<i>Year</i>	<i>Emissions excluding LULUCF (kt CO₂ eq)</i>	<i>LULUCF emissions/removals (kt CO₂ eq)</i>	<i>Emissions including LULUCF (kt CO₂ eq)</i>	<i>Use of units from market-based mechanisms (kt CO₂ eq)</i>
Base year (1990)	12 901.52			
2010	12 252.09	NA	NA	2 839.40
2011	12 097.92	NA	NA	2 839.40
2012	12 157.45	NA	NA	2 839.40

Abbreviation: LULUCF = land use, land-use change and forestry, NA = not applicable.

Note: Luxembourg, in CTF table 4, reported a contribution from the LULUCF sector of 47.71 kt CO₂ eq in 2010 and 30.84 kt CO₂ eq in 2011 as part of information on progress towards the target. The ERT did not include these values in the above table as Luxembourg is a member state of the EU, which has an unconditional commitment to reduce GHG emissions by 20 per cent by 2020 compared with 1990 that does not include emissions/removals from LULUCF.

3. Projections

34. Luxembourg has provided in its BR1 and CTF tables 5 and 6 partially complete and mostly transparent information on its projections from 1990 to 2020 and 2030. A detailed review of the reported information is provided in chapter II.C of the IDR/NC6.

35. The ERT noted that in table 5, Luxembourg reported several instances of the “NE” abbreviation, used without explanation; namely, in the cells for final energy demand for all sectors for 1990–1995 and up to 2012 for energy demand in energy industries. Because this abbreviation is not anticipated by the reporting guidelines for BRs, the ERT recommends that Luxembourg improve the transparency of CTF table 5 by explaining why it reported “NE” in those cells, including the reason it could not report values for historical data while the projected data is provided.

36. Luxembourg provided GHG emission trends by sector and by gas in CTF table 6(a) (‘with existing measures’ (WEM) scenario) and 6(c) (‘with additional measures’ (WAM) scenario). The ERT noted that the projections presented in CTF tables 6 are consistent with the projections provided in NC6 (see paragraphs 62, 63 and 82 of the IDR/NC6). The ERT

therefore reiterates the recommendations made in the NC6 that Luxembourg report in its next BR and CTF tables 6:

- (a) Information on projections for all sectors, including LULUCF;
- (b) Information on projections on a gas-by-gas basis for CO₂, CH₄, N₂O, PFCs, HFCs and SF₆ (treating PFCs and HFCs collectively in each case);
- (c) Information on emission projections related to fuel sold to ships and aircraft engaged in international transport, to the extent possible separately and not included in the totals;
- (d) Information on all the implemented and adopted PaMs included in the WEM scenario projections, as well as on the completeness of coverage of PaMs in the projections in relation to what is reported in the PaMs chapter;
- (e) Information on the estimated and expected total effects of adopted and implemented PaMs.

37. Furthermore, Luxembourg did not transparently provide information on the changes since the previous NC in the methodologies used for the preparation of projections. The ERT encourages Luxembourg to report on changes of methodologies between consecutive submissions and to assess the effects of such changes.

38. The ERT noted information reported by Luxembourg on projected emission trends by 2020 and 2030. The projections reported in the BR1 estimate that total GHG emissions in the WEM scenario would reach a level that is 0.9 per cent below the 1990 level in 2020 and 7.5 per cent above the 1990 level in 2030; in the WAM scenario, emissions would reach a level that is 6.6 per cent and 0.3 per cent below the 1990 level in 2020 and 2030, respectively.

39. Based on GHG emissions from the 2013 GHG inventory submission, as well as on WEM and WAM scenario projections that suggest increasing emissions up to 2030, the ERT assesses that the challenge for Luxembourg to reduce significantly its emissions is very high. As Luxembourg indicated during the review, one of the main drivers of its emissions is CO₂ emissions from road transport. However, the Party has not so far identified major reduction options in this sector, or other sectors. The ERT encourages Luxembourg to explore to the full its mitigation potential in the transportation sector.

D. Provision of financial, technological and capacity-building support to developing country Parties

1. Provision of public financial support to developing country Parties

40. In its BR1 and CTF tables 7, Luxembourg reported mostly complete and mostly transparent information on provision of public financial support to developing country Parties required under the Convention. See also chapter II.D.1 of the IDR/NC6 for a comprehensive review.

41. The BR1 does not include some information required by the guidelines on the amounts of public financial support in United States dollars or international currency. This information was provided after the review week and the ERT recommends that Luxembourg report all amounts in United States dollars or international currency in CTF tables 7 in its next submission.

42. In addition, in its BR1 and CTF tables 7, Luxembourg has not provided details on what “new and additional” financial resources it has provided, or clarified how these resources are “new and additional”. This information is, however, provided in detail in the

Party's NC6. The ERT recommends that Luxembourg provide in its next BR what "new and additional" financial resources it has provided, and clarify how these resources are "new and additional".

43. In its BR1, Luxembourg described how its resources address the adaptation and mitigation needs of Parties not included in Annex I to the Convention (non-Annex I Parties). For example, information on adaptation activities in Kosovo, Montenegro, Viet Nam, Nicaragua and Namibia, as well as on mitigation in Cape Verde and Tunisia, was reported. In addition, Luxembourg reported that it reserves 5 per cent of its humanitarian aid to disaster risk reduction and prevention activities.

44. Table 4 includes some of the information reported by Luxembourg on its provision of financial support, according to which Luxembourg's financial support for both mitigation and adaptation activities increased by 25.3 per cent between 2011 and 2012, from USD 38.69 million to USD 48.49 million. About a third of the financial resources support mitigation activities while the remaining two thirds support adaptation activities. With regard to the most recent financial contributions to fast-start finance to enhance the implementation of the Convention by developing countries, Luxembourg pledged a EUR 9 million contribution over the period 2010–2012 with EUR 8.85 million being firmly committed. However, the ERT noted that no reference was made to Luxembourg's pledges to post-2012 fast-start finance (2013–2020) and the Green Climate Fund. The ERT suggests that Luxembourg include information about its post-2012 pledges in its next BR.

Table 4

Summary of information on provision of financial support in 2011–2012

(Millions of United States dollars)

<i>Allocation channel of public financial support</i>	<i>Years of disbursement</i>	
	<i>2011</i>	<i>2012</i>
Climate-specific contributions through multilateral channels, including:	10.29	8.34
Multilateral climate change funds	4.69	1.90
Multilateral financial institutions, including regional development banks	1.99	4.25
Specialized United Nations bodies	3.62	2.19
Contributions through bilateral and regional channels	28.40	40.15

2. Approach used to track support provided

45. In its BR1, Luxembourg has provided general information on its national approach for tracking the provision of support to non-Annex I Parties and on indicators and delivery mechanisms used and allocation channels tracked.

46. Luxembourg reported that its official development assistance (ODA) relating to climate change mainly consists of bilateral contributions as well as co-financing and framework agreements with non-governmental organizations (NGOs). The bilateral contributions to the Least Developing Country Fund, Alliance of Small Island States (AOSIS) and the category 'Other' are managed by Luxembourg's executing agency for development cooperation Lux-Dev, which is involved in implementing the development cooperation policy of Luxembourg. The agency focuses on the social, economic and environmental aspects of poverty eradication and sustainable development. Cape Verde is one of Luxembourg's partner countries under the AOSIS agreement and is currently implementing the Indicative Cooperation Programme 2011–2015, to which Luxembourg is contributing EUR 60 million.

47. In Luxembourg, ODA financial flows and contributions are managed by the Development Cooperation directorate of the Ministry of Foreign and European Affairs. Official flows coming from fast-start finance 2010–2012 and contributions to the Global Environment Facility fall under the responsibility of the Ministry of Finance.

3. Technology development and transfer

48. In its BR1 and CTF tables 8, “Provision of technology development and transfer support”, Luxembourg has not provided information on activities related to the transfer of technology to developing countries, including information on the public and private sectors. Luxembourg, in its NC6, mentioned that the main reason for not reporting this information is that the Party does not have an Organisation for Economic Co-operation and Development (OECD) marker for technology development. Consequently, the Party reported in its BR1 that it is difficult to disaggregate the required information on technology development and transfer related to climate change adaptation and mitigation based on aggregated data available, which covers all development aid provided by Luxembourg, irrespective of the objective. The ERT recommends that Luxembourg explore innovative ways to complete CTF table 8 and report the required information in its next BR.

4. Capacity-building

49. In its BR1 and CTF tables, Luxembourg has not provided information on how it has provided capacity-building support for mitigation, adaptation and technology. CTF table 9, “Provision of capacity-building support”, has not been completed. However, the Party mentions in its BR1 that it can provide information in its next NC based on OECD capacity-building markers. The ERT recommends that Luxembourg complete CTF table 9 based on OECD markers in its next BR.

III. Conclusions

50. The ERT noted the information reported in the BR1 and CTF tables of Luxembourg in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the BR1, including the CTF tables, provides a general overview of information on emissions and removals related to the quantified economy-wide emission reduction target, a description of the target, progress made by Luxembourg to achieve its target, and provision of support to developing country Parties.

51. Total GHG emissions⁴ decreased by 6.2 per cent between 1990 and 2011, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 10.9 per cent over the same period. Emissions decreases were mainly driven by steel plants in Luxembourg that changed from using a blast furnace process to using an electric arc furnace process in the period 1994–1998. This was followed by major increases in CO₂ emissions that occurred in the road transport sector from 1998 onwards and the launch of a gas-fired power plant in 2002. Finally, minor decreases over 2005–2011 were observed in the energy, industrial processes, LULUCF and waste sectors, which were enough to lead to the overall decrease in emissions.

52. Under the Convention, Luxembourg contributes in achieving the EU quantified economy-wide target of a 20 per cent reduction in emissions by 2020 compared with the 1990 base-year level. The target for the EU and its member States is formalized in the EU’s

⁴ In this report, the term “total GHG emissions” refers to the aggregated national GHG emissions expressed in terms of CO₂ eq excluding land use, land-use change and forestry, unless otherwise specified.

climate and energy package legislation. This includes the EU ETS and the ESD. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide target.

53. Luxembourg does not have a national quantified economy-wide emission reduction target. Emissions that fall under the ETS sector contribute to the EU-wide ETS target of a 21 per cent reduction by 2020 compared to 2005. For the non-ETS sector (excluding LULUCF), the EU-wide target of a 20 per cent emission reduction in 2020 compared to the base year has been translated into a 20 per cent reduction target for Luxembourg (compared to 2005). This corresponds to maximum emissions of 8,085 kt CO₂ eq in 2020. The emissions from sectors not covered under the EU ETS in Luxembourg were at 10,046 kt CO₂ eq⁵ in 2011. These emissions were therefore 24.3 per cent above their 2020 targeted level of 8,085 kt CO₂ eq.

54. Luxembourg reported on the 51 implemented, adopted and planned mitigation actions of the second Action Plan for Reducing CO₂ Emissions – the policy framework developed by the country to achieve its reduction obligations. Luxembourg did not sufficiently report on the estimated mitigation effects of its actions. Overall, the information provided on the mitigation actions is not sufficient to assess the extent to which Luxembourg's mitigation actions have or could contributed to achieving the target.

55. According to information reported on projections, total GHG emissions in the WEM scenario would reach a level that is 0.9 per cent below the 1990 level in 2020 and 7.5 per cent above the 1990 level in 2030; in the WAM scenario, emissions would reach a level that is 6.6 per cent and 0.3 per cent below the 1990 level in 2020 and 2030, respectively. The EU-wide target is a reduction of 20 per cent below the base year. Based on GHG emissions from the 2013 GHG inventory submission, as well as on WEM and WAM scenario projections that suggest increasing emissions up to 2030, the ERT assesses that the challenge for Luxembourg to reduce significantly its emissions is very high. One of the main drivers of its emissions consists in CO₂ emissions from road transport. However, Luxembourg has not so far identified major reduction options in this sector, or other sectors. Indeed, Luxembourg reported in its BR1 that it will not achieve its non-EU ETS target with existing and planned mitigation actions, and plans to use units from market-based mechanism.

56. Luxembourg's ODA relating to climate change mainly consists of bilateral contributions, as well as co-financing and framework agreements with NGOs. Luxembourg reported detailed information on the provision of financial support for both mitigation and adaptation activities, which increased by 25.3 per cent between 2011 and 2012 (from USD 38.69 million to USD 48.49 million). However, in its BR1, Luxembourg did not clarify how financial resources are "new and additional", despite having explained this clearly in its NC6.

57. Luxembourg did not report information on technology development and transfer (CTF table 8) and capacity-building support (CTF table 9).

58. In the course of the review, the ERT formulated recommendations relating to the timeliness, completeness and transparency of Luxembourg's reporting under the Convention. The key recommendations⁶ are that Luxembourg:

- (a) Improve the timeliness of reporting by providing the next BR, including the CTF tables, on time (para. 9);
- (b) Improve the completeness of reporting by:

⁵ This represents about 85 per cent of total GHG emissions in 2011.

⁶ The recommendations are given in full in the relevant sections of this report.

- (i) Reporting on its mitigation actions by sector and by gas for all sectors where such actions are in place (para. 23);
- (ii) Including information on changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its target (para. 28);
- (iii) Information on projections for all sectors, including LULUCF; (para. 36);
- (iv) Information on projections on a gas-by-gas basis for CO₂, CH₄, N₂O, PFCs, HFCs and SF₆ (treating PFCs and HFCs collectively in each case); (para. 36);
- (v) Information on emission projections related to fuel sold to ships and aircraft engaged in international transport, to the extent possible separately and not included in the totals; (para. 36);
- (vi) Information on the estimated and expected total effects of adopted and implemented PaMs; (para. 36);
- (vii) Providing information on provision of ‘new and additional’ financial resources, and clarifying how these resources are ‘new and additional’ (para. 42);
- (viii) Exploring innovative ways to complete CTF table 8 and reporting relevant quantitative data on technology development and transfer (para 48);
- (ix) Completing CTF table 9 with information on capacity building support based on OECD markers (para. 49);
- (c) Improve the transparency of reporting by:
 - (i) Reporting information in the BR and CTF tables 2 that is consistent with its target under the Convention (para. 15);
 - (ii) Explaining the rationale behind the use of each of the notation keys in CTF table 2(e)I and in all other tables where such notation keys are used (para. 18);
 - (iii) Reporting in the text of its BR and CTF tables 4 on its plans to use units from market-based mechanisms and LULUCF activities towards the achievement of its 2020 quantified economy-wide emission reduction target under the Convention (para. 32);
 - (iv) Explaining why it reported “NE” in some cells of table 5, including the reason it could not report values for historical data while the projected data is provided (para. 35);
 - (v) Reporting on all the implemented and adopted PaMs included in the WEM scenario projections, as well as on the completeness of coverage of PaMs in the projections in relation to what is reported in the PaMs chapter (para. 36) ;
 - (vi) Reporting all amounts in United States dollars or international currency in CTF tables 7 (para. 41).

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/2012/LUX. Report of the individual review of the annual submission of Luxembourg submitted in 2012. Available at <<http://unfccc.int/resource/docs/2012/arr/lux.pdf>>.

FCCC/ARR/2013/LUX. Report of the individual review of the annual submission of Luxembourg submitted in 2013. Available at <<http://unfccc.int/resource/docs/2013/arr/lux.pdf>>.

FCCC/IDR.5/LUX. Report of the in-depth review of the fifth national communication of Luxembourg. Available at <http://unfccc.int/resource/docs/natc/lux_nc5.pdf>.

Sixth national communication of Luxembourg. Available at <http://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/dev_nc6_final.pdf>.

First biennial report of Luxembourg. Available at <http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/br1_lux_18314.pdf>.

2013 GHG inventory submission of Luxembourg. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/7383.php>.

2014 GHG inventory submission of Luxembourg. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php>.

B. Additional information provided by Luxembourg

Responses to questions raised during the review were received from Mr. Eric De Brabanter (Ministry of Sustainable Development and Infrastructure of Luxembourg), including additional material on updated policies and measures, greenhouse gas projections, the national registry and recent climate policy developments in Luxembourg. The following documents¹ were also provided by Luxembourg:

Cour des Comptes (Court of Auditors). 2014. *Rapport spécial concernant la mise en application du Protocole de Kyoto* (Special Report on the Implementation of the Kyoto

¹ Reproduced as received from the Party.

Protocol). Luxembourg. Available at <http://www.cour-des-comptes.lu/rapports/rapports_speciaux/2014/kyoto.pdf>.

ECONOTEC Consultants. 2013. *Mission préparatoire pour la mise à jour des projections d'émissions de CO₂ dans le cadre de l'UNFCCC* (Preparatory Assignment for Updating CO₂ Emissions Projections in the Framework of the UNFCCC). Final report to the Department of the Environment of Luxembourg.

ECONOTEC Consultants. 2013. *Mise à jour des projections d'émissions de CO₂ dans le cadre de l'UNFCCC – complément* (Update of CO₂ Emissions Projections in the Framework of the UNFCCC, addendum). Final report to the Department of the Environment of Luxembourg.

ECONOTEC Consultants. 2013. *Développement d'un outil de projection d'émissions de CO₂ pour les secteurs résidentiel et tertiaire au Grand-Duché de Luxembourg* (Development of a Tool for Projecting CO₂ Emissions for the Residential and Tertiary Sector in the Grand Duchy of Luxembourg). Final report to the Department of the Environment of Luxembourg.

Ministry of the Economy. 2010. *Luxemburger Aktionsplan für erneuerbare Energie* (Luxembourg Renewable Energy Action Plan). Luxembourg. Available at <http://www.eco.public.lu/documentation/rapports/Luxemburger_Aktionsplan_f__r_erneuerbare_Energie.pdf>.

Ministry of the Economy. 2011. *Zweiter Nationaler Energieeffizienzplan* (Second National Energy Efficiency Plan). Luxembourg. Available at <http://www.eco.public.lu/documentation/rapports/Zweiter_nationaler_Energieeffizienzakti_Energie_Luxemburg_im_Rahmen_der_EU-Richtlinie___ber_Endenergieeffizienz_und_Energiedienstleistungen__2006-32-EG_.pdf>.

Ministry of Sustainable Development and Infrastructure, Department of the Environment. 2013. 2. *Nationaler Aktionsplan Klimaschutz* (Second National Climate Protection Action Plan). Luxembourg. Available at <http://www.developpement-durable-infrastructures.public.lu/fr/actualites/articles/2013/05/presentation_plan_action_climat/2_Nationaler-Aktionsplan-Klimaschutz.pdf>.

Partenariat pour l'environnement et le climat (Environment and Climate Partnership). 2011. *Paquet Climat* (Climate Package). Luxembourg. Available at <http://www.developpement-durable-infrastructures.public.lu/fr/developpement-durable-infrastructures/partenariat/Paquet_Climat_integral.pdf>.