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# Technical analysis of the first biennial update report of Georgia submitted on 18 July 2016

## Summary report by the team of technical experts

*Summary*

According to decision 2/CP.17, paragraph 41(a), Parties not included in Annex I to the Convention (non-Annex I Parties), consistent with their capabilities and the level of support provided for reporting, were to submit their first biennial update report (BUR) by December 2014. The least developed country Parties and small island developing States may submit BURs at their discretion. Further, according to paragraph 58(a) of the same decision, the first round of international consultation and analysis (ICA) will be conducted for non-Annex I Parties commencing within six months of the submission of the Party's first BUR. The process of ICA consists of two steps: the technical analysis of the submitted BUR, followed by a workshop for the facilitative sharing of views under the Subsidiary Body for Implementation. This summary report presents the results of the technical analysis of the first BUR of Georgia conducted by a team of technical experts in accordance with the modalities and procedures contained in the annex to decision 20/CP.19.

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# I. Introduction and process overview

## A. Introduction

1. According to decision 2/CP.17, paragraph 41(a), Parties not included in Annex I to the Convention (non-Annex I Parties), consistent with their capabilities and the level of support provided for reporting, were to submit their first biennial update report (BUR) by December 2014. The least developed country Parties and small island developing States may submit BURs at their discretion. Further, according to paragraph 58(a) of the same decision, the first round of international consultation and analysis (ICA) will be conducted for non-Annex I Parties commencing within six months of the submission of the Party's first BUR. The process of ICA consists of two steps: the technical analysis of the submitted BUR, resulting in a summary report for each BUR analysed, followed by a workshop for the facilitative sharing of views under the Subsidiary Body for Implementation.

2. This summary report presents the results of the technical analysis of the first BUR of Georgia undertaken by a team of technical experts (TTE) in accordance with the provisions on the composition, modalities and procedures of the TTE under ICA contained in the annex to decision 20/CP.19.

## B. Process overview

3. Georgia submitted its first BUR on 18 July 2016, with the national inventory report (NIR) as a technical annex to the BUR. During the technical analysis week, the Party clarified that it was unable to submit its BUR by December 2014 because of changes in its institutional arrangements at the national level.

4. The technical analysis of the BUR took place from 5 to 9 December 2016 in Bonn, Germany, and was undertaken by the following TTE, drawn from the UNFCCC roster of experts on the basis of the criteria defined in decision 20/CP.19, annex, paragraphs 2–6: Ms. Zuelclady Araujo Gutierrez (Mexico), Ms. Rocio Lichte, member of the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE) from Germany, Ms. Tahira Munir (Pakistan), Ms. Anne Omambia, former member of the CGE from Kenya, Mr. Jose Ramirez Garcia (Spain), Ms. Mayra Rocha (Brazil), Mr. Marius Țăranu (Republic of Moldova) and Ms. Tian Wang (China). Ms. Lichte and Ms. Omambia were the co-leads. The technical analysis was coordinated by Ms. Alma Jean and Ms. Karen Ortega (secretariat).

5. During the technical analysis, in addition to the written exchange, through the secretariat, to provide technical clarifications on the information reported in the BUR, the TTE and Georgia engaged in consultation via a Skype call on the identification of capacity-building needs for the preparation of BURs and participation in the ICA process. Following the technical analysis of the BUR, the TTE prepared and shared a draft summary report with Georgia on 6 March 2017 for its review and comment. Georgia, in turn, provided its feedback on the draft summary report on 28 April 2017.

6. The TTE responded to and incorporated the Party's comments referred to in paragraph 5 above and finalized the summary report in consultation with Georgia on 12 June 2017.

# II. Technical analysis of the information reported in the biennial update report

## A. Scope of the technical analysis

7. The scope of the technical analysis is outlined in decision 20/CP.19, annex, paragraph 15, according to which the technical analysis aims to, without engaging in a discussion on the appropriateness of the actions, increase the transparency of mitigation actions and their effects, and shall entail the following:

(a) The identification of the extent to which the elements of information listed in paragraph 3(a) of the ICA modalities and guidelines (decision 2/CP.17, annex IV) have been included in the BUR of the Party concerned (see chapter II.B below);

(b) A technical analysis of the information reported in the BUR, specified in the "UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention" (hereinafter referred to as the UNFCCC reporting guidelines on BURs) contained in annex III to decision 2/CP.17, and any additional technical information provided by the Party concerned (see chapter II.C below);

(c) The identification, in consultation with the Party concerned, of capacity-building needs related to the facilitation of reporting in accordance with the UNFCCC reporting guidelines on BURs and to participation in ICA in accordance with the ICA modalities and guidelines, taking into account Article 4, paragraph 3, of the Convention (see chapter II.D below).

8. The remainder of this chapter presents the results of each of the three parts of the technical analysis of Georgia's BUR outlined in paragraph 7 above.

## B. Overview of the elements of information reported

9. The elements of information referred to in paragraph 7(a) above include: the national greenhouse gas (GHG) inventory report; information on mitigation actions, including a description of such actions, an analysis of their impacts and the associated methodologies and assumptions, and the progress made in their implementation; information on domestic measurement, reporting and verification (MRV); and information on support received.

10. Further, according to decision 20/CP.19, annex, paragraph 15(a), in undertaking the technical analysis of the submitted BUR, the TTE is to identify the extent to which the elements of information listed in paragraph 9 above have been included in the BUR of the Party concerned. The results of that analysis are presented in tables 1, 2 and 3 below.

### 1. National greenhouse gas inventory

11. The parts of the UNFCCC reporting guidelines on BURs on reporting information on GHG emissions by sources and removals by sinks in BURs are contained in decision 2/CP.17, paragraph 41(g), and paragraphs 3–10of the UNFCCC reporting guidelines on BURs. Further, as per paragraph 3 of those guidelines, non-Annex I Parties are to submit updates of their national GHG inventories in accordance with paragraphs 8–24 of the "Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention" contained in the annex to decision 17/CP.8. The scope of such updates should be consistent with the non-Annex I Party's capacity and time constraints

and the availability of its data, as well as the level of support provided by developed country Parties for biennial update reporting.

12. Table 1 presents the results of the identification of the extent to which the elements of information on GHGs are included in the first BUR of Georgia in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 1
**Identification of the extent to which the elements of information on greenhouse gases are included in the first biennial update report of Georgia**

| *Decision* | *Provision of the reporting guidelines* | *Yes/ Partly/No/NA* | *Comments on the extent of the information provided* |
|---|---|---|---|
| Decision 2/CP.17, paragraph 41(g) | The first BUR shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, or more recent years if information is available | Yes | The BUR was submitted on 18 July 2016 and included a GHG inventory for the calendar year 2013 |
| Decision 2/CP.17, annex III, paragraph 4 | Non-Annex I Parties should use the methodologies established by the latest UNFCCC guidelines for the preparation of national communications from non-Annex I Parties approved by the COP or those determined by any future decision of the COP on this matter | Yes | Georgia used a combination of the Revised 1996 IPCC Guidelines, the IPCC good practice guidance, the IPCC good practice guidance for LULUCF and the 2006 IPCC Guidelines |
| Decision 2/CP.17, annex III, paragraph 5 | The updates of the sections on the national inventories of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol should contain updated data on activity levels based on the best information available using the Revised 1996 IPCC Guidelines, the IPCC good practice guidance and the IPCC good practice guidance for LULUCF; any change to the emission factor may be made in the subsequent full national communication | Yes | The information was reported in the NIR, which was submitted as a technical annex to the BUR |
| Decision 2/CP.17, annex III, paragraph 9 | The inventory section of the BUR should consist of a national inventory report as a summary or as an update of the information contained in decision 17/CP.8, annex, chapter III (National greenhouse gas inventories), including: | Yes | This information is reported in the BUR, with additional detail in the NIR |
| | (a) Table 1 (National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and greenhouse gas precursors) | Yes | Table 1 was reported in both the BUR and NIR (chapter 2.3), but only for the calendar year 2013 |
| | (b) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and $SF_6$) | Yes | Table 2 was reported in chapter 2.3 of the NIR, but only for the calendar year 2013. Georgia did not report table 2 in its BUR; |

| *Decision* | *Provision of the reporting guidelines* | *Yes/ Partly/No/NA* | *Comments on the extent of the information provided* |
|---|---|---|---|
| | | | however, in chapter 3.6 of the BUR, comparable data for F-gases were reported |
| Decision 2/CP.17, annex III, paragraph 6 | Non-Annex I Parties are encouraged to include, as appropriate and to the extent that capacities permit, in the inventory section of the BUR: | | |
| | (a) Tables included in annex 3A.2 to chapter 3 of the IPCC good practice guidance for LULUCF | No | Comparable information was reported in chapter 3.9 of the BUR, specifically in table 3.12. However, the information was not reported in the format of table 3A.2 |
| | (b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines | Partly | The sectoral report tables annexed to the Revised 1996 IPCC Guidelines were used in the BUR and NIR to report GHG emissions; however only for the energy and industrial processes sectors |
| Decision 2/CP.17, annex III, paragraph 7 | Each non-Annex I Party is encouraged to provide a consistent time series back to the years reported in the previous national communications | No | Georgia did not report a consistent time series back to the years reported in the first, second and third national communications. (for details, see paras. 31 and 32 below) |
| Decision 2/CP.17, annex III, paragraph 8 | Non-Annex I Parties that have previously reported on their national GHG inventories contained in their national communications are encouraged to submit summary information tables of inventories for previous submission years (e.g. for 1994 and 2000) | Yes | The information reported in the BUR provides summary information tables of GHG inventories for previous submission years, covered by the first, second and third national communications |
| Decision 2/CP.17, annex III, paragraph 10 | Additional or supporting information, including sector-specific information, may be supplied in a technical annex | Yes | The NIR was submitted as a technical annex to the BUR |
| Decision 17/CP.8, annex, paragraph 13 | Non-Annex I Parties are encouraged to describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved | No | |
| Decision 17/CP.8, annex, paragraph 14 | Each non-Annex I Party shall, as appropriate and to the extent possible, provide in its national inventory, on a gas-by-gas basis and in units of mass, estimates of anthropogenic emissions of the following gases by sources | Yes | |

| *Decision* | *Provision of the reporting guidelines* | *Yes/ Partly/No/NA* | *Comments on the extent of the information provided* |
|---|---|---|---|
| | and removals by sinks: | | |
| | (a) $CO_2$ | Yes | |
| | (b) $CH_4$ | Yes | |
| | (c) $N_2O$ | Yes | |
| Decision 17/CP.8, annex, paragraph 15 | Non-Annex I Parties are encouraged, as appropriate, to provide information on anthropogenic emissions by sources of HFCs, PFCs and $SF_6$ | Yes | Emissions of HFCs and $SF_6$ were reported in the BUR (estimated values reported for 1997–2013). Emissions of PFCs were reported as "NO" |
| Decision 17/CP.8, annex, paragraph 19 | Non-Annex I Parties should, to the extent possible, and if disaggregated data are available, report emissions from international aviation and marine bunker fuels separately in their inventories: | | |
| | (a) International aviation | Yes | Georgia reported emissions from international aviation in chapter 3.2.4 of the NIR |
| | (b) Marine bunker fuels | No | The information reported in chapter 3.2.4 of the NIR indicates that statistical information on marine bunker fuels is not available in Georgia |
| Decision 17/CP.8, annex, paragraph 16 | Non-Annex I Parties are encouraged, as appropriate, to report on anthropogenic emission by sources of other GHGs, such as: | Yes | This information was reported in the BUR (in annex 8.3) for the year 2013 only |
| | (a) CO | | |
| | (b) $NO_x$ | | |
| | (c) NMVOCs | | |
| Decision 17/CP.8, annex, paragraph 17 | Other gases not controlled by the Montreal Protocol, such as $SO_x$, included in the Revised 1996 IPCC Guidelines may be included at the discretion of the Parties | Yes | Information on total national $SO_x$ emissions was reported by the Party in its BUR (in annex 8.3) for the year 2013 only |
| Decision 17/CP.8, annex, paragraph 18 | Non-Annex I Parties are encouraged, to the extent possible, and if disaggregated data are available, to estimate and report $CO_2$ fuel combustion emissions using both the sectoral and the reference approaches, and to explain any large differences between the two approaches | Yes | This information is reported in chapter 3.2.3 of the NIR |
| Decision 17/CP.8, annex, paragraph 20 | Non-Annex I Parties wishing to report on aggregated GHG emissions and removals expressed in $CO_2$ equivalents should use the GWP provided by the IPCC in its Second Assessment Report based on the effects of GHGs over a 100-year time horizon | Yes | This information is reported on page 12 of the NIR |

| *Decision* | *Provision of the reporting guidelines* | *Yes/ Partly/No/NA* | *Comments on the extent of the information provided* |
|---|---|---|---|
| Decision 17/CP.8, annex, paragraph 21 | Non-Annex I Parties are encouraged to provide information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol, including a brief explanation of the sources of emission factors and activity data. If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe the source and/or sink categories, methodologies, emission factors and activity data used in their estimation of emissions, as appropriate. Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building: | Yes | |
| | (a) Information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol | Yes | Georgia reported such information in chapter 3.1 of the NIR (p.54) |
| | (b) Explanation of the sources of emission factors | Yes | This information is reported in all sectoral chapters of the NIR |
| | (c) Explanation of the sources of activity data | Yes | This information is reported in chapter 3.1 of the BUR and in the sectoral chapters of and annex A to the NIR |
| | (d) If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe: | No | |
| | (i) Source and/or sink categories | | |
| | (ii) Methodologies | | |
| | (iii) Emission factors | | |
| | (iv) Activity data | | |
| | (e) Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building | Yes | In chapter 5 of the BUR, Georgia reported on constraints and gaps, and related financial, technical and capacity-building needs related to the energy, LULUCF, agriculture and waste sectors, as well as on areas related to QA/QC activities undertaken |
| Decision 17/CP.8, annex, | Each non-Annex I Party is encouraged to use tables 1 and 2 of the guidelines annexed to | Yes | Georgia reported tables 1 and 2 in the NIR, but only |

| *Decision* | *Provision of the reporting guidelines* | *Yes/ Partly/No/NA* | *Comments on the extent of the information provided* |
|---|---|---|---|
| paragraph 22 | decision 17/CP.8 in reporting its national GHG inventory, taking into account the provisions established in paragraphs 14–17 of the same decision. In preparing those tables, Parties should strive to present information which is as complete as possible. Where numerical data are not provided, Parties should use the notation keys as indicated | | for 2013. Where numerical data were provided in tables 1 and 2, Georgia applied notation keys ("NO", "NE" and "NA"); however, in some cases, they were not applied consistently |
| Decision 17/CP.8, annex, paragraph 24 | Non-Annex I Parties are encouraged to provide information on the level of uncertainty associated with inventory data and their underlying assumptions, and to describe the methodologies used, if any, for estimating these uncertainties: | Yes | This information is reported in chapter 3.11 of the BUR and in annex A to the NIR |
| | (a) Level of uncertainty associated with inventory data | Yes | The level of uncertainty was estimated as 25.14 % (9.89 % excluding LULUCF) and the uncertainty trend was 43.71 % (13.13 % excluding LULUCF) |
| | (b) Underlying assumptions | Yes | This information was reported in annex A to the NIR (pp.146–169) |
| | (c) Methodologies used, if any, for estimating these uncertainties | Yes | This information was reported in annex A to the NIR (pp.143–145) |

*Abbreviations*: BUR = biennial update report, COP = Conference of the Parties, F-gas = fluorinated gas, GHG = greenhouse gas, GWP = global warming potential, IPCC = Intergovernmental Panel on Climate Change, IPCC good practice guidance = *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, IPCC good practice guidance for LULUCF = *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, LULUCF = land use, land-use change and forestry, NA = not applicable, NE = not estimated, NIR = national inventory report, NMVOC = non-methane volatile organic compound, NO = not occurring, QA/QC = quality assurance/quality control, Revised 1996 IPCC Guidelines = *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*, 2006 IPCC Guidelines = *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

## 2. Mitigation actions and their effects

13. The parts of the UNFCCC reporting guidelines on BURs on the reporting of information on mitigation actions in BURs are contained in decision 2/CP.17, annex III, paragraphs 11–13.

14. Georgia reported on mitigation actions in its first BUR. The information on mitigation actions reported is mostly provided in tabular format.

15. Table 2 presents the results of the identification of the extent to which the elements of information on mitigation actions are included in the first BUR of Georgia in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 2
**Identification of the extent to which the elements of information on mitigation actions are included in the first biennial update report of Georgia**

| *Decision* | *Provision of the reporting guidelines* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| Decision 2/CP.17, annex III, paragraph 11 | Non-Annex I Parties should provide information, in a tabular format, on actions to mitigate climate change, by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol | Yes | |
| Decision 2/CP.17, annex III, paragraph 12 | For each mitigation action or groups of mitigation actions including, as appropriate, those listed in document FCCC/AWGLCA/2011/INF.1, developing country Parties shall provide the following information to the extent possible: | | |
| | (a) Name and description of the mitigation action, including information on the nature of the action, coverage (i.e. sectors and gases), quantitative goals and progress indicators | Partly | Information on the quantitative goals and progress indicators for some mitigation actions are not reported |
| | (b) Information on: | | |
| | (i) Methodologies | Partly | Methodologies are reported at the sectoral level for the energy, industrial processes and agriculture sectors |
| | (ii) Assumptions | Partly | Assumptions are used at the sectoral level. Specifically, assumptions have been reported only for the agriculture and industrial processes sectors |
| | (c) Information on: | | |
| | (i) Objectives of the action | Yes | |
| | (ii) Steps taken or envisaged to achieve that action | Partly | Information on steps taken or envisaged is reported for most mitigation actions |
| | (d) Information on the progress of implementation of the mitigation actions and the underlying steps taken or envisaged, and the results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible: | | |
| | (i) Progress of implementation of the mitigation actions | Yes | The Party has reported on the progress of mitigation actions and has also indicated those that are planned, ongoing and completed |

| *Decision* | *Provision of the reporting guidelines* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| | (ii) Progress of implementation of the underlying steps taken or envisaged | Partly | Georgia has not reported this information for the industrial processes sector |
| | (iii) Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible | Partly | The Party has provided most results achieved for various actions. However, results in terms of greenhouse gas emissions and co-benefits are not fully reported for some mitigation measures in the energy sector |
| | (e) Information on international market mechanisms | Yes | |
| Decision 2/CP.17, annex III, paragraph 13 | Parties should provide information on the description of domestic measurement, reporting and verification arrangements | Yes | This information is reported, including areas related to capacity-building, and legal and financial gaps |

## 3. Finance, technology and capacity-building needs and support received

16. The parts of the UNFCCC reporting guidelines on BURs on the reporting of information on finance, technology and capacity-building needs and support received in BUR s are contained in decision 2/CP.17, annex III, paragraphs 14–16.

17. Table 3 presents the results of the identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the BUR of Georgia in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 3

**Identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the first biennial update report of Georgia**

| *Decision* | *Provision of the reporting requirements* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| Decision 2/CP.17, annex III, paragraph 14 | Non-Annex I Parties should provide updated information on constraints and gaps, and related financial, technical and capacity-building needs: | | |
| | (a) Constraints and gaps | Yes | |
| | (b) Related financial, technical and capacity-building needs | Yes | |
| Decision 2/CP.17, annex III, paragraph 15 | Non-Annex I Parties should provide updated information on financial resources, technology transfer, capacity-building and technical support received from the Global Environment Facility, Annex II Parties and | | |

| *Decision* | *Provision of the reporting requirements* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| | other developed country Parties, the Green Climate Fund and multilateral institutions for activities relating to climate change, including for the preparation of the current biennial update report | | |
| | (a) Information on financial resources | Yes | Information on financial resources received from the Global Environment Facility is reported |
| | (b) Information on technology transfer | No | |
| | (c) Information on capacity-building | Yes | Information on capacity-building received from the Global Environment Facility is reported in the biennial update report |
| | (d) Information on technical support received from the Global Environment Facility, Annex II Parties and other developed country Parties, the Green Climate Fund and multilateral institutions for activities relating to climate change, including for the preparation of the current biennial update report | Yes | Information on technical support received from the Global Environment Facility is reported in the biennial update report |
| Decision 2/CP.17, annex III, paragraph 16 | With regard to the development and transfer of technology, non-Annex I Parties should provide information on technology needs, which must be nationally determined, and technology support received: | Yes | |
| | (a) Technology needs, which must be nationally determined | Yes | This information was reported; the Party has also provided a weblink, where further information is reported |
| | (b) Technology support received | Yes | Information is reported on technology support received from various donors |

## C. Technical analysis of the information reported

18. The technical analysis referred to in paragraph 7(b) above aims to increase the transparency of mitigation actions and their effects, without engaging in discussion on the appropriateness of those actions. Accordingly, the technical analysis focused on the transparency of the information reported in the BUR.

19. For information reported on national GHG inventories, the technical analysis also focused on the consistency of the methods used for preparing those inventories with the appropriate methods developed by the Intergovernmental Panel on Climate Change (IPCC) and referred to in the UNFCCC reporting guidelines on BURs.

20. The results of the technical analysis are presented in the remainder of this chapter.

### 1. Information on national circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis

21. As per the scope defined in paragraph 2 of the UNFCCC reporting guidelines on BURs, the BUR should provide an update to the information contained in the most recently submitted national communications, including, among other things, information on national circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis. For their national communications, non-Annex I Parties report on their national circumstances following the reporting guidance contained in decision 17/CP.8, annex, and paragraphs 3–5.

22. In accordance with decision 17/CP.8, annex, paragraph 3, Georgia, reported the following information on its national circumstances. The population of Georgia was reported as 3.73 million in 2015 and it is a lower middle income country with an extremely diverse climate. Georgia reports on the impacts of climate change in the country, including increasing temperatures, shrinking glaciers, sea level rise, reduction and redistribution of river flows, decreasing snowfall and an upward shift of the snowline. The information reported in the BUR indicates that more extreme weather events such as flooding, landslides, forest fires and coastal erosion are also becoming more frequent. Georgia also reports on an increase in natural disasters, which it considers to be a consequence of the effects of global climate change as well as human activities, and Georgia reports that these processes cause significant economic loss and human casualties. Information on air pollution is also reported, which indicates that road transportation is the main contributor. Additionally, the energy sector, including road transport, is one of the significant contributors to the total GHG emissions.

23. As encouraged in decision 17/CP.8, annex, paragraph 4, Georgia provided a summary of relevant information regarding its national circumstances in tabular format. This information transparently describes its national circumstances, in particular the geography, climate, population and economy of Georgia.

24. Georgia reported on its institutional arrangements that are relevant to the preparation and implementation of climate change policies and programmes. The Ministry of Environment and Natural Resources Protection (MoENRP) has been assigned the responsibility for implementing the Convention and its Kyoto Protocol, in collaboration with other ministries and agencies. The Climate Change Service is the structural unit of MoENRP and has the mandate to, among other things: develop and participate in the implementation of national policies and strategies for climate change; develop, organize and coordinate the Climate Change National Mitigation Plan; organize the preparation of the Low Emissions Development Strategy; and coordinate the preparation of Georgia's national communications. MoENRP, in cooperation with other ministries and agencies, has completed and submitted three national communications to the Conference of the Parties (COP) and is expected to continue functioning in this role.

25. Regarding the preparation of the BUR, MoENRP performs a leadership and coordination role, in collaboration with other stakeholders such as the Ministry of Economy and Sustainable Development, the Ministry of Energy, the Ministry of Agriculture, the Ministry of Regional Development and Infrastructure, the Ministry of Internal Affairs and the National Statistics Office of Georgia. These agencies are the key entities in the preparation of the GHG inventories and are responsible for providing the respective sectoral activity data. The BUR project team is also under the guidance of MoENRP. The United Nations Development Programme (UNDP) is the implementing agency of the Global Environment Facility (GEF) for the BUR project and supports Georgia in the associated activities and also assists by providing monitoring and supervision during the preparation of the BUR.

26. The BUR includes comprehensive information on the project governance arrangements, clearly outlining the project board and membership of a project executive group, which is responsible for reviewing and updating the project, lessons learned, the monitoring and communication plan, project management, support and technical expert groups. These arrangements form the basis for preparing and reporting national communications and BURs on a continuous basis. During the technical analysis week, Georgia informed the TTE that economic constraints have adversely affected its institutional arrangements, and further informed the TTE of its plan to strengthen the institutional arrangements using domestic financial resources over the next two to three years. The TTE commends the Party for its efforts and notes that including such information on the improvement of institutional arrangements would further enhance the transparency of the reporting.

### 2. National greenhouse gas emissions by sources and removals by sinks

27. As indicated in table 1 above, Georgia reported information on its GHG inventory in its BUR, mostly in accordance with paragraphs 3–10 of the UNFCCC reporting guidelines on BURs and paragraphs 8–24 of the "Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention" contained in the annex to decision 17/CP.8.

28. In addition to the information on GHG inventories reported in its BUR, consistent with decision 2/CP.17, annex, paragraph 9, Georgia also submitted an NIR as a technical annex to its BUR. The NIR includes additional detail that is reported in a comprehensive and transparent manner. The TTE commends the Party for the efforts taken to provide this detailed and comprehensive information. However, although comprehensive information is reported in the NIR, the BUR did not include specific references to the relevant chapters of the NIR, which the TTE notes would further enhance the transparency of the reported information.

29. Georgia reported on the institutional framework for the preparation of its GHG inventory. MoENRP, which is the key governmental body responsible for climate change policies (see para. 24 above), is also responsible for the preparation of the GHG inventory in Georgia. The Party indicated that, because of a lack of human and financial resources, the inventory is prepared with the support of UNDP, which acts as the GEF implementing agency for the BUR project. Within MoENRP, the Environmental Information and Education Centre was the main implementing mechanism of the GHG inventory project and hired both local and international experts to prepare Georgia's GHG inventory. However, a description of the procedures and arrangements undertaken to collect and archive data for the preparation of the national GHG inventory, as well as efforts to make this a continuous process, was not transparently reported in the BUR. In reviewing its draft report, Georgia clarified that data are collected for different sectors by sectoral experts and that additional information is reported in the NIR. The TTE notes that including additional details in the BUR and a reference to the related information in the NIR could enhance the transparency of the reported information.

30. Georgia reported in its BUR information on its national GHG inventory covering GHG emissions and removals for 1990–2013 using the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the Revised 1996 IPCC Guidelines), the IPCC *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* (hereinafter referred to as the IPCC good practice guidance), the IPCC *Good Practice Guidance for Land Use, Land-Use Change and Forestry* (hereinafter referred to as the IPCC good practice guidance for LULUCF) and, to some extent, the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the 2006 IPCC Guidelines). The TTE recognizes and commends the Party for

its efforts in using the 2006 IPCC Guidelines, which exceed the requirements for reporting by non-Annex I Parties.

31. Although a 24-year time series is reported in the BUR, the methods reported are not consistent throughout the complete time series, whereas the IPCC good practice guidance (chapter 7, p.7.17) requires the methods used to be consistent throughout the complete time series, and that Parties consider the opportunity to undertake recalculations for the other years of the times series back to 1990.

32. As stated in table 1 above, Georgia submitted the NIR as an annex to its BUR, containing an update of the first, second and third national communications (which cover GHG inventories for the calendar years 1980–1997, 1987–2006 and 1990–2011, respectively). The GHG inventory prepared for the BUR covers the years 2010–2013, thus addressing anthropogenic emissions and removals for the years 1990–2013. However, the information reported in the NIR states that updates were only undertaken for the calendar years 2010 and 2011 because of a lack of data for previous years (1990–2009) and because of the time constraints for its BUR preparation, which was prepared over one and half years; therefore, the categories included and the activity data used to estimate emissions were different before and after 2010. Further, Georgia reported that there is a high margin of error of the activity data in the transport sector for 1996–1997. During the technical analysis week, the Party stated that the 2006 IPCC Guidelines will be used for the next BUR and that the estimations for all the previous years back to 1990 will be recalculated. The TTE notes that including this information in the BUR would further enhance the transparency of information reported.

33. The information reported in the BUR and the NIR regarding most of the categories and gases for which tier 1 methodologies and default emission factors values have been used was comprehensive and clearly reported.

34. Consistent with decision 2/CP.17, annex III, paragraph 9, Georgia reported table 1 and table 2 in its NIR; however, this information was only reported for the calendar year 2013. The TTE notes that reporting this information across the entire time series for other calendar years would further enhance the transparency of the information reported. In addition, the TTE notes that Georgia applied notation keys in tables 1 and 2 where numerical data were not provided. In some cases, the use of notation keys was not consistent with the Revised 1996 IPCC Guidelines; for instance, for emissions of perfluorocarbons (PFCs) the notation key "NA" (not applicable) was used instead of "NO" (not occurring), while for emissions of sulphur hexafluoride ($SF_6$) the notation key "NA" was used, rather than the numerical value reported in table 3.8 or table 4.26. In addition, the notation key "NE" (not estimated) was reported for some categories without providing explanations in the BUR; for example, for methane ($CH_4$) and nitrous oxide ($N_2O$) emissions for category 1.A.5 other, and for carbon dioxide ($CO_2$), $CH_4$ and $N_2O$ emissions from international marine bunkers. The TTE notes that the use of notation keys consistent with the Revised 1996 IPCC Guidelines would further enhance the transparency of the GHG inventory reporting.

35. The total GHG emissions of Georgia for the calendar year 2013, reported in the BUR, excluding the land use, land-use change and forestry (LULUCF) sector, amount to 16,679 Kt $CO_2$ eq. Total GHG emissions have decreased by 64.7 per cent since 1990 (47,187 Kt $CO_2$ eq), mainly because of the dissolution of the economic system of the former Soviet Union. However, since 1996, GHG emissions have shown an increase, but the rate was considerably lower than the decline during the calendar years 1990–1995. Between 1996 and 2013, emissions increased by 89.6 per cent, whereas between 2000 and 2013 emissions increased by 53.5 per cent. The GHG emissions reported in 2013 include: $CO_2$ – 9,547 Kt, $CH_4$ – 4,700 Kt $CO_2$ eq, $N_2O$ – 2,223 Kt $CO_2$ eq, hydrofluorocarbons – 208 Kt $CO_2$ eq and $SF_6$ – 0.28 Kt $CO_2$ eq. Other emissions reported include: 46 Kt nitrogen

oxides, 260 Kt carbon monoxide, 95 Kt non-methane volatile organic compounds and 2 Kt sulphur oxides.

36. Georgia has reported its key category analysis by level and trend assessment, using the reporting year 2010, and the TTE commends Georgia for this effort. Among the most relevant key categories by level and trend assessment, Georgia reports: $CH_4$ fugitive emissions from natural gas transportation and distribution, from enteric fermentation and from solid waste disposal sites; $CO_2$ emissions from road transport, from fossil fuel combustion in manufacturing industries, from the construction, residential and energy industries sectors and from lime and cement production; and $N_2O$ emissions from nitric acid production and from agricultural soils.

37. For the energy sector, Georgia reported GHG emissions of 9,386 Kt $CO_2$ eq in 2013, amounting to 56.27 per cent of the total national GHG emissions, but reflecting a decrease of 74.35 per cent since 1990. In the period 2000–2013, the GHG emissions from the industry and transport sectors increased by about 4.7 and 2.8 times, respectively. The Party used tier 1 methodologies available in the Revised 1996 IPCC Guidelines and default emission factors to calculate GHG emissions from the energy sector. In the context of improving the estimates of GHG emissions from fuel combustion, the Party reports on the benefit of moving to higher-tier methodologies and developing country-specific emission factors, specifically for the key categories. The TTE commends the efforts taken by the Party to recalculate some subcategories using the most recent data sources, such as country-specific net calorific values for some fuels, since the submission of the latest national communication.

38. For the industrial processes sector, Georgia reported GHG emissions of 3,296 Kt $CO_2$ eq in 2013, or 19.76 per cent of the total national GHG emissions, but reflecting a decrease of 38.77 per cent since 1990. When compared with the emissions reported for 1995 (520 Kt $CO_2$ eq) and 2000 (1,096 Kt $CO_2$ eq), by the year 2013 the sectoral GHG emissions had increased by 533.8 per cent and 200.7 per cent, respectively. The most significant increase in GHG emissions for this sector, since 2010, is in the category mineral production, in particular, for cement production (accounting for 19.9 per cent of total industrial process emissions) and lime production (29.6 per cent) caused by the increase in demand for construction materials. Most activity data, information describing methodologies and emission factors used were reported; however, the information for some subcategories, such as iron and steel production and ammonia production, is not transparently presented. For most categories, the tier 1 methodology and default emission factors available in the Revised 1996 IPCC Guidelines were used, except for cement production and iron and steel production, for which the Party used the tier 2 methodologies available in the IPCC good practice guidance. Georgia reported that there were no accurate data on products or raw materials for some subcategories. During the technical analysis week, Georgia clarified that plant-specific data were considered to be confidential and therefore were not available for applying higher-tier methods for some subcategories. Georgia also provided additional information and clarifications on the methodologies and data used. The TTE notes that transparency would be further enhanced by including such information in the BUR.

39. For the agriculture sector, Georgia reported GHG emissions of 2,732 Kt $CO_2$ eq in 2013, contributing 16.38 per cent of the total national GHG emissions. The sectoral emissions decreased by 31.44 per cent compared with the 1990 level (3,985 Kt $CO_2$ eq). This trend is mainly due to a reduction in the total area covered with annual agricultural crops, a reduction in the use of nitrogen fertilizers as well as a decrease in the cattle population. Information reported in the first BUR indicated that, in the year 2013, enteric fermentation accounted for 49.4 per cent of the GHG emissions from the agriculture sector, followed by agricultural soils (40.3 per cent), manure management (9.8 per cent) and field

burning of agricultural residues (0.4 per cent). Information describing methodologies, emission factors and parameters used was transparently reported in the NIR. The TTE commends Georgia for using a higher-tier methodology (tier 2) and country-specific emission factors and parameters for calculating $CH_4$ emissions from enteric fermentation.

40. Georgia reported GHG emissions and removals from the LULUCF sector for the calendar years from 1992 to 2013. During the technical analysis week, Georgia clarified that GHG emissions and removals for 1990 and 1991 were not reported because of a lack of activity data. The LULUCF sector represented a net sink of GHG emissions during the period 1992–2013, except for the year 2004, when the sector was a net source of GHG emissions. The Party attributes this to the changes in the land cadastre (in that particular year the areas covered with perennial crops were reduced to almost half of their original size). The GHG inventory for the LULUCF sector covers three land categories: forest land, cropland and grassland (as stated in the NIR, owing to lack of data calculations were not carried out for wetlands, settlements and other land categories). The inventory for this sector is based on the IPCC good practice guidance for LULUCF, mostly following tier 1 methodologies and using default emission factors; however, country-specific parameters were also used (as, for instance, the basic wood density values). Activity data used in the sectoral inventory come from the land cadastres, statistical publications of the Forestry Department under MoENRP and data provided by the Adjarian Forest Agency. Overall, the net removals of the LULUCF sector fluctuated between the minimum (882 Kt $CO_2$ eq) in 1995 and the maximum (7,091 Kt $CO_2$ eq) in 1992. Net removals reported in 2013 amounted to 4,124 Kt $CO_2$ eq, or 32.8 per cent of the total national GHG emission in 2013 (12,555 Kt $CO_2$ eq), including the LULUCF sector.

41. For the waste sector, Georgia reported total sectoral GHG emissions of 1,265 Kt $CO_2$ eq in 2013 (7.58 per cent of the total national GHG emissions), reflecting a minor increase (2.68 per cent) since the 1990 level (1,232 Kt $CO_2$ eq). As reported in the BUR, the absence of an acceptable national inventory system for waste management in Georgia is a major constraint on reporting on this sector and, as a result, there are no data on the annually generated amounts of waste, waste types, disposal and utilization. Three key sectoral sources of GHG emissions were reported: $CH_4$ emissions from solid waste disposal sites; $CH_4$ emissions from wastewater handling; and $N_2O$ emissions from human sewage. Information reported in the BUR indicated that solid waste generation and management activities contributed around 60–80 per cent of the emissions from the waste sector. Calculation tables and information describing methodologies and parameters applied were reported. The information reported indicates that the first-order decay method was used to calculate $CH_4$ emissions from landfills, and a tier 1 methodology was applied for estimating emissions from domestic and industrial wastewater treatment.

42. Georgia has provided detailed information on quality assurance/quality control (QA/QC) activities undertaken. The information reported indicates that the QA/QC activities for the national GHG inventory were performed for the first time. It was conducted for the entire GHG inventory by an international GHG inventory expert hired by the UNDP-UNEP Global Support Programme, as well as by an external national think tank organization "World Experience in Georgia". However, the LULUCF sector was peer-reviewed separately by an international expert from the UNFCCC roster of experts, and all external reviews included reports as an outcome of the peer-review process. The current QA/QC activities include a workplan to continuously improve the quality of the GHG inventory. The TTE commends Georgia for its efforts to provide such information in the BUR and notes that the transparency of reporting would be further enhanced if additional information from the peer-review reports were included in the BUR and/or in the NIR.

43. Georgia reported information on the uncertainty assessment (level) of its national GHG inventory. The uncertainty analysis is based on the tier 1 approach and covers all

source categories and all direct GHGs. The results obtained, as reported in the BUR, revealed that the uncertainty level for emissions is 25.14 per cent (9.89 per cent excluding LULUCF) and the uncertainty trend is 43.71 per cent (13.13 per cent excluding LULUCF). The TTE commends Georgia for providing in the BUR detailed explanatory information on the selected uncertainty values in activity data and emission factors and the reasons for their selection.

### 3. Mitigation actions and their effects, including associated methodologies and assumptions

44. As indicated in table 2 above, Georgia reported in its BUR, mostly in accordance with paragraphs 11–13 of the UNFCCC reporting guidelines on BURs, information on mitigation actions and their effects, to the extent possible.

45. Georgia reported on its key policies and programmes on mitigation actions, some of which are ongoing, such as the energy policy 2014, the low-emission development strategy (LEDS), the first national energy efficiency action plan (NEEAP) and those included in Georgia's intended nationally determined contribution (INDC). Georgia also reported on sector- and region-specific strategies, such as the Tbilisi Sustainable Urban Transport Strategy, the Climate Change Strategy of Adjara, the Asian Development Bank Country Partnership Strategy 2014–2018 and the Covenant of Mayors Sustainable Energy Action Plans (SEAPs).

46. The energy policy 2014 outlines Georgia's main energy policy directions. LEDS is a national, country-led and country-specific strategic plan that aims to provide economic development in accordance with a low-emission scenario referred to as "climate-resilient sustainable economic growth". The preparation of the first NEEAP began in 2015 and is ongoing; it aims to identify significant energy-efficiency improvement measures and national energy-efficiency targets, among other things.

47. The Covenant of Mayors SEAPs, prepared and signed between 2011 and 2015, consider the green zones of cities as sectors of GHG emission mitigation. According to these plans, Georgia reported that removals of approximately 11,500 t $CO_2$ can be achieved by 2020 (against a 2014 baseline). The Tbilisi Urban Transport Strategy defines the policy directions and prioritizes interventions along a multimodal and integrated approach. The Climate Change Strategy of Adjara includes increasing energy efficiency and promoting renewable energy sources in the residential sector, municipal and tourist buildings and outdoor lighting.

48. According to its INDC, submitted in 2015, Georgia plans unconditionally to reduce its GHG emissions by 15 per cent below the 'business as usual' (BAU) scenario by 2030, equivalent to a 34 per cent emission intensity reduction per unit of gross domestic product (GDP) from 2013 to 2030. Conditional to a global agreement addressing the importance of technical cooperation, access to low-cost financial resources and technology transfer, this 15 per cent could be increased to 25 per cent. Regarding the latter, Georgia's reduction in GHG emission intensity per unit of GDP would be approximately 43 per cent between 2013 and 2030. This increase in the level of reduction would also ensure that, by 2030, GHG emissions in Georgia will remain at 40 per cent below the 1990 level.

49. Consistent with decision 2/CP.17, annex III, paragraph 11, Georgia has reported its mitigation actions in a tabular format for all sectors. Additional information has also been reported in the BUR. Mitigation actions reported in Georgia's BUR are categorized in the context of: (a) mitigation measures and potential, by sector; (b) LEDS; (c) the clean development mechanism (CDM); (d) nationally appropriate mitigation actions (NAMAs); and (e) activities implemented under the Covenant of Mayors through the SEAPs, aimed at the 'greening' of the eight cities that signed the covenant.

50. With regard to the mitigation actions and potential, by sector, Georgia has reported mitigation actions within the energy, transport, industrial processes, agriculture, waste and LULUCF sectors.

51. The information reported indicates that the energy sector is the most significant source of GHG emissions in Georgia. In accordance with decision 2/CP. 17, annex III, paragraph 12(a–c), Georgia reported mitigation actions in the energy sector, including the names and description, their geographical location, information on the nature of coverage in sectors and gases, information on methodologies and assumptions and objectives of the actions. In total, 33 mitigation actions are reported in this sector, including policy and programme actions. Of the 33 mitigation actions, 20 are summarized in table 4.1 of the BUR as measures under the first NEEAP. Based on the information reported, the 20 actions have a total annual GHG emission reduction of 1,683.9 t $CO_2$ eq and 3,185.3 t $CO_2$ eq for the calendar years 2020 and 2030, respectively, when compared with the BAU scenario.

52. Georgia has not reported information on estimated outcome for some mitigation actions, such as the Hydro Power and Planning Project (HPEP), Market Assessment of the Residential Sector and the Kartli Wind Farm. During the technical analysis, Georgia clarified that the HPEP and Kartli Wind Farm projects are being planned and that it is impossible to estimate the $CO_2$ emission reductions at this stage. Regarding the Market Assessment of the Residential Sector in Georgia, the Party clarified that implementation of this project will enhance Georgia's capacity to improve energy efficiency in the building sector. The TTE notes that transparency of the information reported would be further enhanced if this information were included in the BUR.

53. Georgia reported a total of 24 mitigation actions for the transport sector, focusing on railway and road infrastructure improvements, urban mobility and vehicle improvement. Consistent with decision 2/CP.17, annex III, paragraph 12, Georgia reported mitigation actions that include planned and ongoing policy and infrastructural measures, their goals, objectives of actions, steps taken or envisaged to achieve the actions, information on the progress of implementation, the budgetary requirements and estimated outcomes for most measures. Table 4.2 of the BUR presents a summary of mitigation measures in the transport sector, including the geographical coverage of the measure and source of funding. When compared with the BAU scenario, the annual GHG emission reductions for these mitigation actions amount to 401,332 t $CO_2$ eq and 844,988 t $CO_2$ eq in 2020 and 2030, respectively. Information on quantitative goals for the actions in terms of GHG emission reductions, methodologies and their assumptions is not reported for some mitigation actions. The TTE notes that transparency would be further enhanced if this information were to be reported.

54. Consistent with decision 2/CP.17, annex III, paragraph 12, Georgia reported information on the nature of the actions and methodologies and assumptions through the use of baseline and mitigation scenarios. Georgia reported that the main sources of non-energy-related GHG emissions in the industrial processes sector are the production of cement, ammonia and nitric acid, lime, iron and steel, and ferroalloys. Further information was reported on a prioritized list of cement, ammonia and nitric acid. Regarding cement production, Georgia reported that GHG emissions will be reduced from 2021 to 2030 by a total of 1,110 Kt $CO_2$ eq. Regarding the production of nitric acid, Georgia reported emission reductions from 7,485 Kt $CO_2$ eq to 6,019 Kt $CO_2$ eq from 2026 to 2030. The Party did not report emission reductions for the production of ammonia, but indicated that carbon capture and storage is the only approach to achieving significant reductions. The TTE notes that transparency would be enhanced if this information were reported in subsequent BURs. For all mitigation actions considered in the industrial processes sector, the Party did not report whether plans were ongoing or envisaged for the mitigation scenarios. During the technical analysis week, Georgia clarified that no plans were in place and that implementation of these actions is dependent on technical and financial support.

Further, Georgia clarified that most of its mitigation actions will be implemented within the framework under the Paris Agreement through the implementation of the INDC of Georgia. Georgia also clarified that it is preparing an action plan "Climate 2021–2030", to be completed in 2018, which will define the legal instruments, activities, methods and other relevant issues for all sectors, including industrial processes.

55. Georgia reports that, in the agriculture sector, no significant progress has been achieved because of a severe lack of skills and knowledge with regard to mitigating the impacts of climate change. However, Georgia reports that under its LEDS it is currently implementing a project titled "Sustainable Management of Pastures in Georgia to demonstrate Climate Change Mitigation and Adaptation Benefits and Dividends for Local Communities". The Party reported on the goal of the project and the results achieved. In table 4.13 of the BUR, Georgia reported a baseline scenario for the agriculture sector for the calendar years from 2014 to 2030 applying IPCC methodologies. Within this context, mitigation measures are planned for $CH_4$ emissions from manure management, reducing those emissions by 903 Kt $CO_2$ eq. Regarding direct and indirect $N_2O$ emissions from agricultural soils, GHG emission reductions are projected to be 113 Kt $CO_2$ eq in 2021 and 1,062 Kt $CO_2$ eq in 2030.

56. Georgia reports in the BUR that it has not achieved any tangible results in the mitigation of GHG emissions in the waste sector, despite its efforts; however, it recognizes that efficient waste disposal can lead to enhanced environmental benefits and energy conversion. Georgia reports that, with support from partners, the country is implementing four projects in this sector. Consistent with decision 2/CP.17, annex III, paragraph 11, Georgia, under its LEDS, has reported information in table 4.2.15 of the BUR, capturing $CH_4$ emission reduction related to baseline and mitigation scenarios. In accordance with paragraph 12 of the same decision, Georgia has reported on the objectives of the ongoing and planned projects and the steps taken and/or envisioned. Under LEDS, $CH_4$ emissions from the waste sector are estimated using the methodology described in the inventory chapter of the BUR and the assumptions are also reported. It is estimated that, under the mitigation scenario, during the years 2020–2030, a total of 190.6 Kt landfill gas $CH_4$ (equivalent to 280 million $m^3$ natural gas) will be captured; and emission reductions due to waste recycling and composting and $CH_4$ extraction will range from 9.8 Kt $CO_2$ eq in 2021 to 24.7 Kt $CO_2$ eq in 2030, when compared with the baseline scenario.

57. Georgia reported mitigation actions in the LULUCF sector, in the context of its INDC, which prioritizes mitigation activities for the forestry sector. Georgia also presents conditional and unconditional commitments in its INDC to be fulfilled by the forestry sector by 2030. Georgia reported that, as reflected in its INDC, three unconditional commitments were taken, to be fulfilled by 2030: a project in one pilot area (45,000 ha) of the Borjomi-Bakuriani Forest District, which aims to remove 1 Mt $CO_2$ over a period of 10 years (2020–2030); implementation of afforestation and reforestation activities; and natural regeneration of forest. Georgia also reported commitments that are dependent upon the receipt of international and technical support, including the development of forest inventories, remote sensing and the development of internationally recognized practices for sustainable forest management, which will lead to estimated removals of 6 Mt $CO_2$ over the period 2020–2030. Georgia also reported information on wetlands, grasslands and pastures and identified additional mitigation measures, but estimated emission reductions were not reported. The TTE notes that including this information in subsequent BURs could further enhance the transparency of reporting. For the forestry sector, Georgia reported on three categories of mitigation options, including those which are implemented or ongoing, but did not report on the estimated emission reductions for all of those actions. Regarding the mitigation action for 100 ha degraded landscape, the Party reported that emission reductions by 2040 are likely to amount to 162 t $CO_2$ per ha through biomass and 99 t/ha by soil.

58. Mitigation actions under LULUCF are also reported Greening in Big Cities (SEAP), presenting the budget needed, the planned actions, geographical coverage and hectares to be put under greening by 2020 and the GHG removal increment by 2020, using 2014 as the baseline for the eight cities under the Covenant of Mayors SEAP. Georgia reports on coverage, objectives, steps envisaged to achieve the actions, but does not report on the methodologies and assumptions used for this sector. Georgia has also differentiated between those NAMAs that are ongoing; however, information on the progress of these NAMAs is not reported, and the TTE notes that reporting on progress would further enhance the transparency of reporting in the BUR.

59. Georgia has provided information on international market mechanisms and has reported that it participates in the CDM. The country reported six registered projects and it has presented a description of each project, the nature, coverage in form of gases and sectors, objectives of the actions, quantitative goals and methodologies and assumptions. Georgia has also reported a total expected annual emission reduction of 1,761,484 t $CO_2$ eq. Information was also reported on the GHG emission reductions achieved by three of these registered projects: refurbishment of Enguri hydropower plant, 5,817,151 t $CO_2$ over a 10-year crediting period; Adjaristskali hydro project, 2,743,692 t $CO_2$ during a 7-year crediting period; and Dariali hydroelectric power project, 2,592,291 t $CO_2$ during a 10-year crediting period. The TTE commends Georgia for reporting this comprehensive information on the CDM projects.

60. Georgia has reported information on four NAMAs as part of its mitigation actions, including the estimated GHG emission reductions for two of these NAMAs: "Adaptive Sustainable Forest Management in the Borjomi-Bakuriani Forest District" and "Efficient use of biomass for equitable, climate-proof and sustainable rural development". The estimated total GHG emission reductions for these two NAMAs amount to 1 Mt $CO_2$ and 1.8 Mt $CO_2$ in 2020 and 2030, respectively. For the four NAMAs reported, Georgia has given the description of each NAMA, including the thematic area and/or sector.

61. Georgia reported that it is in the process of establishing a domestic MRV system for its mitigation actions in line with its commitments under the Convention. Further, the Party reported that its MRV system will cover domestically supported NAMAs and it will be designed to accommodate the requirements of internationally supported NAMAs as well as other mitigation activities. Georgia has thus elaborated on its planned MRV system, which is inclusive of elements other than mitigation actions, which is reflected in paragraph 71 below.

### 4. Constraints and gaps, and related technology, financial, technical and capacity-building needs, including a description of support needed and received

62. As indicated in table 3 above, Georgia reported in its BUR mostly in accordance with paragraphs 14–16 of the UNFCCC reporting guidelines on BURs, information on finance, technology and capacity-building needs and support received.

63. Consistent with decision 2/CP.17, annex III, paragraph 14, Georgia reported on sector-specific gaps and barriers to mitigation and provided information in its BUR. Georgia indicated that major constraints and gaps are related to, among other things, the lack of well-defined strategies, national policymaking issues, data collection and, in particular, exchange of information, lack of expertise and public awareness. Georgia also reported on specific constraints and gaps for the energy, industrial processes, agriculture, LULUCF, transport and waste sectors. The other constraints and gaps reported are: the inadequate assessment of wetland resources and state policy on wetland management; lack of coordination of efforts between stakeholders; and the need for accountability, measurability and verifiability of the impact of GHG reductions and the establishment of a monitoring system.

64. Georgia also recognized and reported on associated challenges such as mobilizing, accessing and delivering financial resources, collecting information on financial resources, the technical constraints in the collection, collation and storage of data on climate change finance and institutional challenges that are linked with the coordination of climate change finance. Moreover, Georgia also listed some projects in the energy sector that are facing a shortage of financial resources. The Party also provided a list of projects that need technical and capacity-building assistance, in terms of limited local technical capacity, lack of technical assistance, local skills and expertise in industrial and building energy auditing, insufficient legal and regulatory framework in implementing project goals, and so on.

65. Georgia also reported on the trained sector auditors in the transport and energy sectors, but indicated that audits are mostly conducted by various donor projects. The Party emphasized the need for formal accreditation of its national auditors to reduce its dependence on donor projects.

66. Georgia also identified the technical and financial support needed for forestry and for the waste sector; regarding the latter, there is currently no acceptable state inventory system for solid waste in Georgia. Information on technical and financial support needed for the transport, industrial processes and agriculture sectors was not reported. During the technical analysis week, Georgia clarified that at this stage it is difficult to estimate technical and financial needs for these sectors. Further, the Party reported that it received significant support for climate change over the last five years and outlined information on the donors, budget, scope and duration of the funding (see table 6.1 of the BUR).

67. Regarding the support received for activities relating to climate change, including for the preparation of the current BUR, Georgia reported that the preparation of the GHG inventory was conducted within the framework of the first BUR. It was prepared with the financial assistance provided by the GEF, along with a project for Promotion of Biomass Production and Utilization, which was also funded by the GEF.

68. Georgia reported on technology needed for various mitigation actions in the different sectors. The Party also reported on its technology needs assessment (TNA) and indicated that the priority technologies identified and selected in the TNA are being addressed by NAMAs. Further, the Party indicated that the practical introduction of advanced technologies is difficult because of low demand, weak market activity and lack of adequate skills of technical staff and knowledge on both supply and consumption.

69. The TTE acknowledged the effort made by Georgia to report on constraints and gaps, and related financial, technical and capacity-building needs.

### 5. Domestic measurement, reporting and verification

70. As indicated in table 2 above, Georgia reported in its BUR, in accordance with paragraph 13 of the UNFCCC reporting guidelines on BURs, information on the description of domestic MRV arrangements.

71. In addition to the information relevant to NAMAs reported in paragraph 59 above, Georgia reported that it has gained initial experience with different elements of MRV for GHG emissions, through the implementation of CDM projects and from the preparation of its national GHG inventory. Among the seven CDM projects, Georgia reports that certified emission reductions were issued for three of them, which provided valuable experience for conducting MRV for the energy sector, which the Party envisions will be a major target for future mitigation actions.

72. The Party also reported that, despite this experience and the understanding of the role of MRV, an overall domestic MRV system has not been designed and implemented on

a national level. Georgia further reported that consideration has not been given to the MRV of sustainable development co-benefits or financial support.

73. Georgia has reported on its proposed domestic MRV system, which is designed in a holistic manner and will build upon the existing systems, processes and infrastructure, rendering it cost-effective. In addition to areas related to GHG emissions, Georgia's MRV system will also include the sustainable development co-benefits of the implemented mitigation actions and financial flows. This proposed system reflects the current vision of the Georgian Government and implementation is expected to be approved in the near future, after final intra-agency consultations. During the technical analysis week, Georgia reported that at the time of submission of its BUR, the MRV system was in place but not functional; however, now there is an ongoing project that will also address the capacity-building needs regarding the functioning of the MRV system.

74. Regarding the institutional arrangements to facilitate the proposed MRV system, Georgia reported details in its BUR (figure 7.1). The operation of the domestic MRV system is supervised by the LEDS coordination committee and its work will be supported by the technical group on MRV, which will provide guidance on the various technical aspects of the MRV system. Both MRV bodies will work with the implementation entities, relevant government agencies and other stakeholders to ensure the smooth implementation and operation of the MRV system. Georgia clarified during the technical analysis that, with the establishment of new institutions for designing MRV standards, additional financial support might be required until the full operationalization of the domestic MRV system.

### 6. Any other information

75. Georgia reported its concern about climate risk reduction and climate change adaptation efforts that require better alignment at the institutional, policy and programme implementation levels, because climate and disaster-related risks can no longer be addressed separately. Regarding adaptation, Georgia reported that the Climate Change Service, the structural unit of MoENRP, has the mandate to organize and coordinate the development of a national adaptation plan for vulnerable ecosystems and economic sectors, to monitor current climate change adaptation projects and to continuously conduct research and TNAs in order to promote new available technologies for adaptation and mitigation actions.

## D. Identification of capacity-building needs

76. In consultation with Georgia, the TTE identified the following capacity-building needs related to the facilitation of the preparation of subsequent BURs and participation in ICA:

(a) Enhancing the national capacity of experts to develop the GHG inventory for the LULUCF sector, including the development of a land-use matrix in accordance with the requirements set out in the 2006 IPCC Guidelines. This land-use matrix should be based on information generated by a new nationwide forest inventory, complemented by a complete inventory of land use of all areas, or alternatively based on data acquired through remote sensing techniques;

(b) Enhancing the national capacity to process primary data on fuel use in the national economy and/or at the sectoral level, taking particular account of structural changes in energy use since 1990 (e.g. the emergence of new types of fuels in primary energy use, the increase of the share of renewables in primary energy use, and so on);

(c) Developing a data management system for the industrial processes sector and enhancing the capacity of the relevant national institutions to collect and provide more reliable activity data needed for the development of the GHG inventory for this sector (specifically considering the following categories: lime production, limestone and dolomite use, lubricant and paraffin wax use and road paving with asphalt);

(d) Developing a data management system for the agriculture sector and enhancing the capacity of the national institutions to conduct studies, research and assessments, focused on collecting and providing the activity data needed for the development of the GHG inventory for this sector;

(e) Developing a data management system for the waste sector and enhancing the capacity of the national network of research institutions to:

(i) Conduct studies, research and assessments, focused on establishing an inventory of solid waste disposal sites;

(ii) Improve the statistical system for data collection on the volume of waste generated, the types and management practices;

(iii) Establish a framework for undertaking periodic assessments of the morphological composition of solid waste disposed in landfills of Georgia;

(f) Enhancing the national capacity to improve methodologies and procedures for gathering data on emissions of hydrofluorocarbons and perfluorocarbons;

(g) Enhancing the national capacity to adopt higher-tier methodologies for the most relevant source categories (e.g. 1.B.2 fugitive emissions from natural gas transmission and distribution, 1.A.3.b road transport, 2.B.1 ammonia production and 2.B.2 nitric acid production);

(h) Enhancing the national capacity to plan and implement sustainable forest management practices;

(i) Enhancing the capacity of national experts to develop mitigation actions within the agriculture sector and to report information on progress of implementation, including planned actions;

(j) Enhancing the capacity of national experts to prepare viable project proposals to access and mobilize financial resources.

77. The TTE notes that, in addition to those identified during the technical analysis, Georgia reported the following capacity-building needs in its BUR:

(a) Strengthening institutional mechanisms to enhance national capacities to address climate change, including the public and private sectors, civil society and non-governmental organizations;

(b) Enhancing the capacity of experts, including training courses on climate change, including building resilience;

(c) Improving public information on the potential risks of climate change;

(d) Enhancing the capacity of national energy auditors and establishing formal accreditation to ensure ongoing training and certification, including:

(i) Enhancing the national capacity to implement the Climate Change Strategy of Adjara and SEAPs;

(ii) Regarding NAMAs, technical assistance in selecting affordable equipment and training for its installation;

(e) Enhancing institutional capacities in the agriculture sector, for data collection and sharing, to estimate and integrate climate change issues and to develop measures to reduce GHG emissions;

(f) Enhancing national capacity to develop a national land-use GeoDatabase.

# III. Conclusions

78. The TTE concludes that:

(a) Most of the elements of information listed in paragraph 3(a) of the ICA modalities and guidelines have been included in the first BUR of Georgia;

(b) Georgia reported information on its national circumstances and institutional arrangements relevant to the preparation of BURs in a transparent manner. The Party has taken significant steps to create institutional arrangements that allow for the sustainable preparation of BURs. These include MoENRP, which has been assigned responsibility to implement the Convention and its Kyoto Protocol in collaboration with ministries and agencies, and the project executive group, which is the executive decision-making body for the BUR project, providing guidance to the project manager and approving project revisions. The TTE commends Georgia for the progress made and notes that the plans to improve the overall MRV system would contribute to achieving sustainable reporting under the Convention and its Kyoto Protocol;

(c) Georgia reported mostly transparent information on its GHG inventory and submitted updates of its national GHG inventory for the years 1990–2013 using the Revised 1996 IPCC Guidelines, the IPCC good practice guidance and IPCC good practice guidance for LULUCF; the 2006 IPCC Guidelines were also used to estimate emissions for 2010–2013 for four categories. Georgia plans to move to the 2006 IPCC Guidelines for its subsequent report. In 2013, Georgia's total anthropogenic GHG emissions were estimated to be 16,679 Kt $CO_2$ eq (excluding LULUCF) and 12,555 Kt $CO_2$ eq (including LULUCF). The TTE commends Georgia for going above and beyond the reporting provisions by reporting the information noted by the TTE in chapter C above. The TTE notes that the transparency of the reporting could be further improved by including the information on the GHG inventory that was not reported or partly reported in the BUR;

(d) Georgia reported mostly transparent information on mitigation actions and effects, which are categorized in the context of policies and programmes, sectors, international market mechanisms and NAMAs, which are either planned or ongoing. The Party reported that, in accordance with its INDC, submitted in 2015, it plans unconditionally to reduce its GHG emissions by 15 per cent below the BAU scenario by 2030. With regard to mitigation actions and their potential by sector, Georgia reported mitigation actions within the energy, transport, industrial processes, agriculture, waste and LULUCF sectors and, to the extent possible, also reported on GHG emission reductions resulting from the sectoral actions: energy, 1,683.9 t $CO_2$ eq and 3,185.3 t $CO_2$ eq for the calendar years 2020 and 2030, respectively, when compared with the BAU scenario; transport, annual GHG emission reductions amounting to 401,332 t $CO_2$ eq and 844,988 t $CO_2$ eq in 2020 and 2030, respectively, when compared with BAU; industrial processes, emissions from cement production reduced from 2021 to 2030 by a total of 1,110 Kt $CO_2$ eq and emissions from nitric acid reduced from 7,485 Kt $CO_2$ eq to 6,019 Kt $CO_2$ eq from 2026 to 2030; agriculture, $CH_4$ emissions from manure management 903 Kt $CO_2$ eq and for direct and indirect $N_2O$ emissions from agricultural soils, GHG emission reductions are projected to be 113 Kt $CO_2$ eq in 2021 and 1,062 Kt $CO_2$ eq in 2030; waste, under the mitigation scenario, during the years 2020–2030, a total of 190.6 Kt landfill gas $CH_4$ will be captured and emission reductions due to waste recycling and composting and $CH_4$

capture will deviate from the baseline from 9.8 Kt $CO_2$ eq in 2021 to 24.7 Kt $CO_2$ eq in 2030; LULUCF, emission reductions amounting to 7 t $CO_2$ by 2030–2040 and from degraded lands by 162 t $CO_2$ by 2040);

(e) As it relates to international market mechanisms, Georgia reported that it participates in the CDM, with total expected emission reductions of 1,761,484 t $CO_2$ eq. Information was also reported on the GHG emission reductions achieved by three registered projects: refurbishment of the Enguri hydropower plant, 5,817,151 t $CO_2$ over a 10-year crediting period; Adjaristskali hydro project, 2,743,692 t $CO_2$ during a 7-year crediting period; and Dariali hydroelectric power project, 2,592,291 t $CO_2$ during a 10-year crediting period;

(f) Georgia reported information on four NAMAs as part of its mitigation actions, but reported the estimated total GHG emission reductions for only two of them, amounting to 1 Mt $CO_2$ and 1.8 Mt $CO_2$ in 2020 and 2030, respectively. Information was also reported on the national process of establishing a domestic MRV system for its mitigation actions: the Party reported that the system will be designed to address both domestically and internationally supported NAMAs as well as other mitigation activities;

(g) Georgia reported mostly transparent and updated information on its existing gaps and constraints, as well as the related needs, in relation to developing a GHG inventory process, NAMAs and a holistic MRV system, including institutional arrangements. Important financial, technical and capacity-building needs, for different sectors, including transport, industry and agriculture, among others, were reported. These needs would facilitate the reporting in national communications and BURs on a continuous basis and enable or enhance the implementation of climate change mitigation and adaptation actions. Regarding information on financial support received, Georgia reported comprehensive and transparent information on the title and scope of the projects, the donor and implementing agencies and the duration and budget (see table 6.1 of the BUR).

79. The TTE, in consultation with Georgia, identified 16 [1] capacity-building needs related to the facilitation of reporting in accordance with the UNFCCC reporting guidelines on BURs and to participation in ICA in accordance with the ICA modalities and guidelines, taking into account Article 4, paragraph 3, of the Convention. The Party considers all capacity-building needs listed in chapter II.D to be a priority.

[1] This refers to the number of capacity-building needs listed in chapter II.D.

# Annex

## Documents and information used during the technical analysis

### Reference documents

"Composition, modalities and procedures of the team of technical experts for undertaking the technical analysis of biennial update reports from Parties not included in Annex I to the Convention". Annex to decision 20/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=12>.

"Modalities and guidelines for international consultation and analysis". Annex IV to decision 2/CP.17.Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

"UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention". Annex III to decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

"Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention". Annex to decision 17/CP.8. Available at <http://unfccc.int/resource/docs/cop8/07a02.pdf#page=2>.

First biennial update report of Georgia. Available at <http://unfccc.int/8722.php>.

Third national communication of Georgia. Available at <http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php>.