United Nations FCCC/SBI/ICA/2015/TASR.1/AZE

Framework Convention on Climate Change

Distr.: General
2 February 2016

English only

Summary report on the technical analysis of the first biennial update report of Azerbaijan submitted on 31 March 2015

In accordance with 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, should 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, in accordance with 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 their first BURs. The process of ICA includes two steps: the technical analysis of the submitted BURs, followed by a workshop on 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 Azerbaijan undertaken by a team of technical experts in accordance with the modalities and procedures contained in the annex to decision 20/CP.19.

GE.16-01419(E)

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I. Introduction and process overview

A. Introduction

1. In accordance with 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, should 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, in accordance with 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 their first BURs. The process of ICA includes two steps: the technical analysis of the submitted BURs, resulting in a summary report for each BUR analysed, followed by a workshop on 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 Azerbaijan 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. Azerbaijan submitted its first BUR on 31 March 2015. During the consultation with the TTE, the delayed submission of the BUR was attributed to the internal approval process required by the relevant authorities. However, the technical team indicated that the BUR was completed in December 2014, consistent with 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).

4. The technical analysis of the BUR took place from 17 to 21 August 2015 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: Mr. Kamel Djemouai (Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE) member from Algeria), Mr. Amit Garg (India), Mr. Nicolas Leclercq (CGE member from Canada), Ms. Helen Joan Plume (New Zealand) and Mr. Marius Taranu (Republic of Moldova). Mr. Djemouai and Ms. Plume were the co-leads. Ms. Alma Jean and Ms. Karen Ortega (secretariat) provided administrative support to the TTE.

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 Azerbaijan also engaged in discussion via Skype conferencing, primarily to reach a common understanding on the identification and prioritization of the capacity-building needs. Following the technical analysis of the BUR, the TTE prepared and shared a draft summary report with Azerbaijan on 15 October 2015 for its review and comment. Azerbaijan, in turn, provided its feedback on the draft summary report on 28 January 2016.

6. The TTE responded to and incorporated the comments referred to in paragraph 5 above from Azerbaijan and finalized, in consultation with Azerbaijan, the summary report on 28 January 2016.

II. Technical analysis of 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 these actions, increase transparency of mitigation actions and their effects, and shall entail the following:

(a) Identification of the extent to which the elements of information listed in the ICA guidelines contained in decision 2/CP.17, annex IV, paragraph 3(a), are included in the BUR of the Party concerned (see chapter II.B);

(b) A technical analysis of the information contained in the BUR, specified in 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);

(c) Identification of, in consultation with the Party concerned, capacity-building needs related to the facilitation of reporting in accordance with annex III to decision 2/CP.17 and to the participation in ICA in accordance with annex IV to decision 2/CP.17, taking into account Article 4, paragraph 3, of the Convention (see chapter II.D).

8. The remainder of this chapter presents the results of each of the three parts of the technical analysis of Azerbaijan'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; 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 support received.

10. Further, in accordance with decision 20/CP.19, annex, paragraph 15(a), in undertaking the technical analysis of the submitted BUR, the TTE shall identify the extent to which the elements of information listed in the guidelines contained in decision 2/CP.17, annex IV, paragraph 3(a), are included in the BUR of the Party concerned. The results of this 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 annex III, paragraphs 3–10, of the same decision. Further, as per decision 2/CP.17, annex III, paragraph 3, non-Annex I Parties should submit updates of national GHG inventories according to paragraphs 8–24 of the "Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention" (hereinafter referred to as the UNFCCC guidelines for the preparation of national communications from non-Annex I Parties) as contained in the annex to decision 17/CP.8. The scope of the updates on national GHG inventories should be consistent with capacities, time constraints, data availabilities and the level of support provided by developed country Parties for biennial update reporting.

12. Table 1 below presents results of the identification of the extent to which the elements of information on GHGs are included in the first BUR of Azerbaijan 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 Azerbaijan

Decision	*Reporting requirements*	*Yes/ Partly/No*	*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	Partly	The BUR was submitted on 31 March 2015, which suggests that the minimum of four years for the inventory should be 2011; however, the year 2011 is not covered, and Azerbaijan's BUR covers the inventory information only for 1990–2010
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 for National GHG Inventories, the IPCC good practice guidance and Uncertainty Management in National GHG Inventories, and the IPCC good practice guidance for LULUCF; any change to the emission factor may be made in the subsequent full national communication	Partly	Azerbaijan provided some updates in its second national communication (2010). However, it did not provide updated activity data, a description of the tiers used or information on whether the IPCC good practice guidance and IPCC good practice guidance for LULUCF were used. In addition, Azerbaijan did not provide a detailed description of sources of activity data used in the estimation of emissions
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:		
	• 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	This information was provided for both table 1 and table 2; however, it was not fully in line with the annex to decision 17/CP.8 (tables 1 and 2), but followed the common tabular format for the "UNFCCC biennial reporting guidelines for developed country Parties", adopted through decision 19/CP.18
	• Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF_6)	Yes	

Decision	*Reporting requirements*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
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:		
	• Tables included in annex 3A.2 to chapter 3 of the IPCC good practice guidance for LULUCF	No	
	• The sectoral report tables annexed to the Revised 1996 IPCC Guidelines	No	
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	Yes	
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	
Decision 2/CP.17, annex III, paragraph 10	Additional or supporting information, including sector-specific information, may be supplied in a technical annex	Partly	Azerbaijan provided an annex with additional information on its inventory, but sector-specific information was not included
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	Partly	In sections 2.1 and 5.10.1 of the BUR, some information on the roles of institutions involved in compiling the GHG inventory was provided. However, Azerbaijan did not describe the procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories on a continuous process
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 and removals by sinks:		
	• CO_2	Yes	
	• CH_4	Yes	
	• 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	Partly	Information on anthropogenic emissions by sources of HFCs for the 2000–2010 time series, as well as of PFCs for 1990–1994, was provided; data did not include emissions of SF_6
Decision 17/CP.8, annex, paragraph	Non-Annex I Parties should, to the extent possible, and if disaggregated data are available, report emissions from international aviation and marine		

Decision	*Reporting requirements*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
19	bunker fuels separately in their inventories:		
	• International aviation	No	Emissions from international aviation and marine bunker fuels were not reported in the BUR. In response to technical clarification sought by the TTE during the technical analysis, Azerbaijan provided information on the emissions from international aviation and marine bunker fuels in an aggregated form. Azerbaijan explained that the emissions were mistakenly omitted from the final reporting tables provided in the annex to the BUR
	• Marine bunker fuels	No	
Decision 17/CP.8, annex, paragraph 16	Non-Annex I Parties are encouraged, as appropriate, to report on anthropogenic emissions by sources of other GHGs such as:		
	• CO	No	
	• NO_x	No	
	• NMVOCs	No	
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	No	
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:		
	• 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	
	• Explanation of the sources of emission factors	Yes	
	• Explanation of the sources of activity data	Yes	

Decision	*Reporting requirements*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
	• 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	
	• Source and/or sink categories		
	• Methodologies		
	• Emission factors		
	• Activity data		
	• Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building	Partly	Limited information was provided in the BUR (section 2.3) on areas where data may be further improved in future communications through capacity-building
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:		
	• Level of uncertainty associated with inventory data	Yes	
	• Underlying assumptions	No	
	• Methodologies used, if any, for estimating these uncertainties	No	

Abbreviations: BUR = biennial update report, GHG = greenhouse gas, 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*, NMVOC = non-methane volatile organic compound, Revised 1996 IPCC Guidelines = *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*, TTE = team of technical experts.

2. Mitigation actions and their effects

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

14. Azerbaijan did report mitigation actions in its first BUR. The mitigation actions reported are provided in tabular and textual formats.

15. Table 2 below presents results of the identification of the extent to which the elements of information on mitigation actions are included in the first BUR of Azerbaijan 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 Azerbaijan

Decision	*Reporting requirements*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
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:		
	• Information on the nature of the action and coverage (i.e. sectors and gases)	Yes	
	• Quantitative goals	Partly	Quantitative goals were given only for some actions
	• Progress indicators	Partly	Progress indicators were only provided for some actions
(b)	Information on methodologies and assumptions:		
	• Methodologies	Partly	Azerbaijan used various methodologies for quantifying achieved emission reductions and the LEAP tool to identify future mitigation scenarios in the energy and transportation sectors. However, information on modelling assumptions and methodologies to estimate mitigation from various policies and programmes was not provided
	• Assumptions	Partly	Azerbaijan did not completely indicate assumptions for quantifying mitigation actions
(c)	Objectives of the action and steps taken or envisaged to achieve that action:		
	• Objectives of the action	Yes	
	• Steps taken or envisaged to achieve that action	Yes	
(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:		
	• Progress of implementation of the mitigation actions	Partly	Azerbaijan partly provided information on the progress of implementation of some its mitigation actions

Decision	*Reporting requirements*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
	• Underlying steps taken or envisaged	Yes	
	• Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible	Partly	Azerbaijan partly presented the results achieved, which could be more specific and precise in estimating emission reductions
(e)	Information on international market mechanisms	Yes	Azerbaijan provided information on its involvement in the international market mechanism as a Party to the Kyoto Protocol
Decision 2/CP.17, annex III, paragraph 13	Parties should provide information on the description of domestic measurement, reporting and verification arrangements	Yes	Azerbaijan conducted measurement, reporting and verification of various parameters and related environmental activities by its different sectoral agencies and entities

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

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

17. Table 3 below presents 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 Azerbaijan 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 Azerbaijan

Decision	*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:		
	• Constraints and gaps	Yes	
	• Related financial, technical and capacity-building needs	Yes	
Decision 2/CP.17, annex III, paragraph 15	Non-Annex I Parties should also provide updated information on financial resources, technology transfer, capacity-building and technical support received from the GEF, Annex II Parties and other developed country Parties, the GCF and multilateral institutions for activities relating to climate change, including for the preparation of the current BUR	Partly	Only minimum information on support received for the preparation of the BUR was reported; further information was provided by Azerbaijan during the technical analysis on support received for the preparation of the BUR

Decision	*Reporting requirements*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
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:		
	• Technology needs, which must be nationally determined	Yes	
	• Technology support received	Yes	

Abbreviations: BUR = biennial update report, GCF = Green Climate Fund, GEF = Global Environment Facility.

C. Technical analysis of the information reported

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

19. In addition to covering the information in the BUR and any additional technical information provided by the Party concerned, the technical analysis also focused in relation to information reported on national GHG inventories, on the consistency of the methods used for developing 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. The results of the technical analysis are presented in the remainder of the chapter.

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

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

21. In accordance with decision 17/CP.8, annex, paragraph 3, Azerbaijan, in its BUR, reported on its national development priorities and demonstrated how climate change considerations are integrated in its economic development programmes and plans. Azerbaijan also reported on national circumstances such as its geography, population, and political and economic profiles. In particular, the TTE noted that Azerbaijan is a democratic, secular and unitary republic and that it is densely populated. The economy, which is one of the fastest growing in the world with a growth of 5.8 per cent in its gross domestic product in 2013, is mainly driven by the oil and gas sector.

22. During the technical analysis, the TTE received clarification from Azerbaijan regarding institutional arrangements relevant to the preparation of national communications and BURs on a continuous basis. Azerbaijan pointed out that an institutional framework for the preparation of BURs on a continuous basis is not yet fully in place. Azerbaijan also reported a number of challenges for the preparation of its national communications and BURs, including: the lack of coordination and collaboration between governmental

agencies; the lack of a mechanism for collection of data or information; and the lack of procedures for conducting quality assurance and quality control. Despite having an existing pool of qualified experts, Azerbaijan also noted that there is a lack of experienced experts in some specific sectors and subsectors.

23. Azerbaijan also reported on institutional arrangements relevant to the preparation of national GHG inventories and a domestic MRV system. More details on these arrangements are provided in the relevant sections (C.2 and C.5) of the summary report.

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

24. Azerbaijan has reported, in its BUR, information on its national GHG inventory covering GHG emissions and removals using the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (hereinafter referred to as the Revised 1996 IPCC Guidelines). In response to technical clarification sought by the TTE during the technical analysis, the Party explained that in some specific cases, for instance, in the calculation of methane (CH_4) fugitive emissions from oil and natural gas, the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (hereinafter referred to as the 2006 IPCC Guidelines) were also used. The TTE recognizes the efforts of the Party in using the 2006 IPCC Guidelines, which exceed the requirements for reporting by non-Annex I Parties.

25. Azerbaijan provided in the annex to its BUR a time series table with its total national GHG emissions; however, this was not fully in line with the reporting guidance contained in the annex to decision 17/CP.8 (tables 1 and 2). Rather, the Party chose to use one of the common tabular format tables for the "UNFCCC biennial reporting guidelines for developed country Parties", adopted through decision 19/CP.18.[1]

26. The first BUR of Azerbaijan describes the institutional arrangements for the preparation of its GHG inventory. The Ministry of Ecology and Natural Resources (MENR) has overall responsibility for the national inventory and also has responsibility for some parts of its management, such as requests for and receipt of information and obtaining approval from the Government for the submission of the national communications and BURs to the secretariat. The Climate Change and Ozone Center (CCOC), established in 2001 within the National Hydrometeorology Department of MENR, has responsibility for the preparation and most of the management of the national inventory. CCOC collects the necessary data, performs the calculations and compiles the BURs and the inventory reporting tables using the Greenhouse Gas Inventory Software for non-Annex I Parties (NAIIS).[2] The system also encompasses the State Statistics Committee (SSC) (the main provider of activity data) and other agencies and companies (State Oil Company of Azerbaijan Republic (SOCAR), Azeristiliktechizat OSC, Azenergy OSC, Tamiz Shahar OSC and State Agency on Alternative and Renewable Energy Sources), which provide additional information, as well as relevant government ministries (Ministry of Economy and Industry, Ministry of Agriculture, Ministry of Transport and Ministry of Energy), which provide support by, for example, reviewing the BURs and national communications before submission to the secretariat.

27. It was noted also that all large- and medium-scale economic entities, specifically those active in the energy and industry sectors, are submitting, to SSC, annual statistical reports on GHG emissions released into the atmosphere. The Department of Environment Protection and the Regional Departments of Ecology and Natural Resources, on behalf of

[1] According to decision 19/CP.18, paragraphs 1 and 4, Parties included in Annex I to the Convention shall use the biennial reporting common tabular format electronic application when preparing and submitting their biennial reports.

[2] <http://unfccc.int/national_reports/non-annex_i_national_communications/non-annex_i_inventory_software/items/7627.php>.

MENR, analyse the data provided by the economic entities and conduct quality assurance/quality control procedures. Since 2007, SSC has published, on a yearly basis, the national GHG inventory data in the Statistical Yearbook *Environment, Forestry, Fishery and Hunting in Azerbaijan*.[3]

28. The national GHG inventory covered most of the categories and gases for which GHG emissions occurred in Azerbaijan and for which information was available. However, the TTE noted that transparency of the GHG estimate calculations performed for specific source and sink categories could be enhanced by providing additional information on the methods and descriptions of the tiers used, as well as on the sources of activity data and emission factors and how they have been used in the estimation of emissions.

29. The emissions from some categories (specifically in the industrial processes sector, as for instance: 2A3 'Limestone and Dolomite Use', 2A4 Soda Ash Production and Use', 2A7 'Other' (glass, ceramic, bricks production), 2F2 'Foam blowing', 2F3 'Fire extinguishers', 2F4 'Aerosols' and 2F8 'Electric equipment') were not estimated or reported, and explanations were not provided in the BUR. Providing this information would clarify whether or not these emissions exist and, where necessary, would also enable the TTE to understand the reasons why these emissions were not estimated, such as due to lack of data. The TTE notes that the use of notation keys to a greater extent would improve the transparency of the inventory.

30. In response to technical clarification sought by the TTE during the technical analysis, Azerbaijan explained that it considers, to the extent possible, the need to continuously improve the transparency, consistency, comparability, completeness and accuracy of its national GHG inventories. In this regard, the Party is planning further improvements of the institutional arrangements in the subsequent inventory cycles to support continuous improvements in the quality of the GHG inventories. Further, the current legal and institutional framework will be improved in upcoming years, with the purpose of developing reliable statistics to estimate GHG emissions and removals that originated from the energy, industrial processes, agriculture, land use, land-use change (LULUCF) and waste sectors. The improvements are expected to incorporate specifically the collection, processing, assessment, verification, quality assurance and management of uncertainty of data, as well as the storage, use, distribution and presentation of data and information derived from entities holding data on anthropogenic emissions by sources and removals by sinks of GHGs.

31. Other areas where further improvements are expected relate to the process of the decisions taken on emission factors to be used, the analysis of the suitability of IPCC default emission factors to the national circumstances, as well as the identification and undertaking of studies that can provide country-specific emission factors in a scientifically sound and consistent manner, providing that they are more accurate than the IPCC default values. For a better prioritization of activities on developing the national GHG inventories, in a manner that better reflects the national circumstances, Azerbaijan intends also to undertake a key category analysis, following the IPCC tier 1 level and trend assessment, as well as to undertake an uncertainty assessment of the national inventories of GHG sources and sinks, thus providing information on the level of uncertainty in inventory data and their underlying assumptions, and describing the methodologies used for estimating these uncertainties.

32. Azerbaijan is also foreseeing improvements in setting up a centralized archiving system, which will be both electronic and paper based, to be maintained by CCOC. The archive will contain emission factors and activity data at disaggregated levels, including documentation on how these factors and data have been generated and aggregated for the

[3] <http://www.stat.gov.az/menu/6/statistical_yearbooks/indexen.php>.

preparation of the inventory. The archived information will also include internal documentation on quality assurance/quality control procedures, documentation on annual key categories and key category identification, and planned inventory improvements.

33. During the technical analysis, Azerbaijan explained that it will assess the possibility of developing a national inventory report to be submitted as a technical annex to the subsequent BURs. It is envisaged that the national inventory report might guide future inventory teams in their efforts to calculate the inventories on a continuous basis; this will ensure a considerable improvement in the transparency, consistency, comparability, completeness and accuracy of the next national GHG inventories. In addition, Azerbaijan plans to enhance the level of knowledge of experts and within institutions (e.g. employees of MENR, CCOC and SSC) involved in the development of the GHG inventories.

34. In 2010, the total GHG emissions in Azerbaijan were 42,799 gigagrams of carbon dioxide equivalent (Gg CO_2 eq) including LULUCF and 48,209 Gg CO_2 eq excluding LULUCF. In comparison with the 1990 levels, by 2010, Azerbaijan reduced its GHG emissions by 34.3 per cent excluding LULUCF and by 38.5 per cent including LULUCF. The lowest level of GHG emissions was noted in 1998, when it decreased to 53 per cent of the 1990 level excluding LULUCF. The significant reduction of the GHG emissions over the 1990–1998 period was mostly as a consequence of the deep transformation processes characteristic of the transition from a centralized economy to a market economy, specifically after the dissolution of the Union of Soviet Socialist Republics and the declaration of Azerbaijan's independence on 18 October 1991. From 1999 to 2008, a continuous increase in GHG emissions was noted in Azerbaijan, followed by a decrease in 2009, mostly due to the global economic crisis. In 2010, the GHG emission level in Azerbaijan was slightly (less than 1 per cent) below the previous year's level.

35. Carbon dioxide (CO_2) and CH_4 were the dominant gases, comprising approximately 54.8 per cent and 36.3 per cent, respectively, of total emissions excluding LULUCF, followed by nitrous oxide and fluorinated gases, which made up 6.8 and 2.1 per cent of the total, respectively. The energy and agriculture sectors made the largest contributions to the total GHG emissions in Azerbaijan, accounting for approximately 75.9 per cent and 15.0 per cent, respectively, of the total emissions excluding LULUCF in 2010, followed by the waste and industrial processes sectors, with contributions of 4.7 per cent and 4.4 per cent, respectively.

36. Consistent with the IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, Azerbaijan has estimated CO_2 emissions from fuel combustion using both the reference approach and the sectoral approach. However, Azerbaijan did not explain the large differences between the two approaches (e.g. 15.1 per cent in 1990 and 13.2 per cent in 2010), as encouraged in the UNFCCC guidelines for the preparation of national communications from non-Annex I Parties. In response to clarification requested by the TTE during the technical analysis, Azerbaijan explained that the main reason for the variation could be attributed to the fact that not all private sector entities submitted reliable data to SSC. The Party indicated that further efforts will be undertaken in the future to facilitate consistency in the estimates obtained from the two approaches and, when applicable, clarify the reasons for their differences.

37. The TTE also noted that Azerbaijan did not report in its BUR emissions from international aviation and marine bunker fuels. In response to clarification requested by the TTE during the technical analysis, the Party provided information on the emissions from international aviation and marine bunker fuels, but it was in an aggregated form. Further, these emissions were mistakenly omitted from the final reporting tables included in the annex to the first BUR. Azerbaijan also informed the TTE that further efforts will be undertaken to report in the subsequent BURs the emissions from international aviation and marine bunker fuels separately.

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

38. As indicated in table 2 above, Azerbaijan reported, in its BUR, information on mitigation actions and their effects.

39. Azerbaijan reported mitigation actions covering the energy, industry, waste, forestry and agriculture sectors and clearly indicated that it considers only those mitigation actions that have co-benefits. These actions span the period from 2003 to 2020.

40. The BUR provides information that is consistent with decision 2/CP.17, annex III, paragraphs 11 and 12, on mitigation actions in tabular format and provides a textual description of further sectoral mitigation policies, programmes and actions identified among the mitigation actions. The TTE noted 24 programmes (each containing many projects), 124 other projects including the clean development mechanism (CDM), four presidential decrees and one fuel replacement policy in the power sector. Azerbaijan reported the progress/potential of GHG emission reductions from six programmes, 98 projects, two presidential decrees and one policy. The TTE noted that the transparency of the information reported could be enhanced by providing additional information on the methodologies and assumptions used, quantitative goals, and progress indicators and quantification of the emission reductions of the mitigation policies, programmes and actions.

41. Azerbaijan has 54 projects where GHG mitigation is the primary objective, while mitigation co-benefits are highlighted for the remaining 99 mitigation policies, programmes and actions. The co-benefits and objectives include socioeconomic development, poverty reduction, sustainable development, regional development, alternate and renewable energy technology potential estimation and installation, reduction of energy consumption, and development of the agriculture, forestry and waste sectors.

42. Azerbaijan indicated that it has reduced its GHG emissions for the energy sector by 34.5 per cent during the period 1990–2010, which can be attributed to fuel switching from oil to natural gas in power plants and enhancing the fuel efficiency of power generation from 386.2 grams of fuel per kWh in 2003 to 317.6 386.2 grams of fuel per kWh in 2010. Some 97 per cent of the associated gas emissions is captured from oil and natural gas production processes and supplies to end users. Azerbaijan has a vibrant programme for promoting alternative and renewable energy sources.

43. Azerbaijan is working towards creation of a sustainable and cost-effective transport system that meets the growing public and economic demand for transport services, which in turn would help GHG emission mitigation to a certain degree. Owing to the expansion of the industry sector, GHG emissions are expected to increase, although the use of new technologies is reducing the rate of this growth. Azerbaijan has installed a solid waste treatment factory that is projected to mitigate 0.66 Mt CO_2 eq of GHG emissions during its 10 years of its operation, and the same is planned for other regions and large cities around the country.

44. Azerbaijan has a National Programme on the Rehabilitation and Expansion of Forests, mainly for restoration of degraded forest, improving tree composition quality in forests and expanding the share of forests in the country in accordance with international norms. It has also taken initiatives to plant trees outside forests, and to expand to 300,000 ha of new forest areas until 2050.

45. In its BUR, Azerbaijan provided a prognosis regarding GHG emissions until 2050 mainly covering the energy and transportation sectors using the LEAP model. Although information on the methodologies for quantifying the achieved emission reductions was provided, the TTE notes that the transparency of reporting could be enhanced by additional

information on the assumptions used for modelling and a more detailed explanation on the methodologies for estimating mitigation achieved from various policies and programmes.

46. Azerbaijan also provided preliminary emission projections under two scenarios: the 'business as usual' (BAU) scenario, which does not take into account mitigation measures, and a second scenario, which does take into account mitigation measures. The BAU scenario projects that GHG emission levels will reach 77 Mt CO_2 eq by 2050, while under the second scenario, GHG emissions will be approximately 53 Mt CO_2 eq by 2050.

47. Azerbaijan provided information on its involvement in the international market mechanism as a Party to the Kyoto Protocol. It has documented 34 CDM projects approved by its designated national authority and five verified CDM projects under the UNFCCC CDM process. The statistics include information on the total projects, sectors covered and quantity of certified emission reductions that have been issued for Azerbaijan.

48. Azerbaijan has expressed the need to set up a proper and reliable MRV system, including a robust institutional framework. The Party envisages establishing a comprehensive domestic MRV system for mitigation actions in coming years, but work is still ongoing.

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

49. In accordance with decision 2/CP.17, annex III, paragraph 14, Azerbaijan has provided transparent and updated information on constraints and gaps, and related financial, technical and capacity-building needs.

50. The information is reported in various sections of the BUR. In section 2.3, information on constraints and gaps in relation to the GHG inventory process and related needs to reduce uncertainties of the data obtained in the inventory process by sector is provided. The needs are mainly related to capacity-building and technologies to enhance the quantity and quality of data collected and measured in different sectors.

51. Sections 5.8 and 5.9 contain information on constraints and gaps related to the development of nationally appropriate mitigation actions (NAMAs), including a domestic MRV system for NAMAs, highlighting Azerbaijan's exclusion from many support programmes and the resulting limited experience of the Party with the development of NAMAs. General awareness-raising and increase of knowledge of current opportunities and expected benefits of NAMAs and MRV systems were also identified as a key need to focus on for the successful development of NAMAs and MRV systems.

52. In section 4, Azerbaijan identifies its needs for climate change related technologies in the context of its current economic circumstances and assesses its technology support needs. The TTE noted that Azerbaijan already has access to the technologies needed to implement its mitigation actions and that, in some cases, these technologies are produced in Azerbaijan. Although the status of a technology needs assessment was unclear from the BUR, during the technical analysis week, Azerbaijan clarified that it has completed a technology needs assessment.

53. Azerbaijan provided information on investments needed to fully implement some of its mitigation actions related to new technologies, although it noted that, so far, most of the technologies have been implemented with its own internal resources. It also noted that building a favourable investment environment is one of the major challenges it faces. Further, information was also provided on the capacity-building needed to successfully implement the intended climate change mitigation measures, such as enhancing the knowledge and skills of involved organizations in the new applied technologies.

54. In accordance with decision 2/CP.17, annex III, paragraph 15, Azerbaijan provided transparent and updated information on financial resources, technology transfer, capacity-building and technical support received from relevant Parties and organizations, including support received for the preparation of the BUR. The TTE noted that Azerbaijan provided information on support received in section 3 of its BUR, in particular, in table 24. Further information was provided to the TTE during the technical analysis on the type of support provided and the financial support received for the activities listed in table 24 of the BUR.

55. Azerbaijan also reported on support received from the United Nations Development Programme for the preparation of its BUR, and provided more details during the technical analysis on the nature of the support. The total project budget was USD 392,461, of which USD 321,461 was provided by the Global Environment Facility and USD 71,000 by MENR as an in-kind contribution.

5. Domestic measurement, reporting and verification

56. Azerbaijan has provided transparent information on the existing MRV arrangements and plans to enhance them appropriately for reporting GHG mitigation actions.

57. Azerbaijan conducts MRV of various parameters and related environmental activities using its different sectoral agencies and entities. For example, in accordance with the national legislation of Azerbaijan, every entity that has stationary sources of emissions shall submit an Official Statistical Report on Atmospheric Air Protection by 25 January of each year to the regional statistical authority. The second section of the Official Statistical Report includes emissions from GHGs, with the entities performing the monitoring and reporting of emissions themselves. The analysis and verification of the data is conducted through the Department of Environmental Protection and the Regional Department of Ecology and Natural Resources, on behalf of MENR.

58. SOCAR has established its own MRV system, involving structural units for report preparation and an ecological unit for monitoring, and verification through external experts.

59. Azerbaijan envisages establishing a comprehensive domestic MRV system for mitigation actions in coming years, which could also be a system to describe co-benefits. This system can be developed at different levels depending upon the purpose of the MRV system, such as at country, sector, corporate, company, facility and product levels. The TTE notes that establishing such a system can enhance the transparency of reporting on domestic MRV arrangements.

D. Identification of capacity-building needs

60. In consultation with Azerbaijan, the TTE identified the following capacity-building needs related to the facilitation of the preparation of subsequent BURs, participation in ICA, as well as needs related to climate change impacts and adaptation:

(a) Further strengthening the institutional arrangements in place for the preparation of national GHG inventories on a continuous basis (e.g. through a legal/normative act) and enhancing elements of the institutional arrangements (i.e. institutional arrangements for national inventory systems, methods and data documentation, description of quality assurance and quality control procedures, description of the archiving system, key category analysis and a national inventory improvement plan) using the appropriate available tools;

(b) Enhancing the level of knowledge of experts and within institutions (e.g. employees of MENR, CCOC and SSC) involved in the development of the GHG inventory;

(c) Developing a national inventory report to be submitted as an annex in subsequent BURs; the national inventory report could guide the inventory teams in their efforts to prepare the GHG inventories on a continuous basis. These efforts could enhance the transparency, consistency, comparability, completeness and accuracy in subsequent national GHG inventories;

(d) Developing a data management system for tracking and archiving the inventory information used in each inventory cycle;

(e) Transitioning to the use of the 2006 IPCC Guidelines for all sectors to enhance the capacity of local sectoral experts involved in the inventory process, particularly when moving to higher tier methodologies (e.g. in the agriculture and waste sectors);

(f) Undertaking further efforts on developing reliable statistics to estimate GHG emissions and removals originating from the energy, industrial processes, agriculture, LULUCF and waste sectors;

(g) Undertaking a key category analysis, following the IPCC tier 1 level and trend assessment, for better prioritization of activities on developing the national GHG inventories, in a manner that better reflects the national circumstances;

(h) Developing country-specific emission factors, specifically focusing on key categories (e.g. for enteric fermentation, manure management and solid waste disposal sites);

(i) Undertaking an uncertainty assessment of the national GHG inventories, providing information on the level of uncertainty with inventory data and their underlying assumptions, and describing the methodologies used for estimating these uncertainties;

(j) Developing detailed methodologies and tools (e.g. the LEAP model) for estimating/quantifying emission reductions from various mitigation policies, programmes and actions, including monitoring the progress of implementation and the results achieved;

(k) Reporting assumptions while estimating/quantifying emission reductions from various mitigation policies, programmes and actions;

(l) Reporting on steps taken or envisaged to achieve mitigation actions;

(m) Establishing reliable domestic MRV arrangements, including the establishment of performance indicators for mitigation policies, programmes and actions, and the use of the general guidelines for domestic MRV of domestically supported NAMAs by developed country Parties contained in decision 21/CP.19;

(n) Exploring more efficient international practices in the field of climate change legislation and policy and developing them according to country-specific conditions;

(o) Preparing low-carbon sustainable development strategies at the national and local levels, as well as by relevant sectors;

(p) Preparing for, and developing NAMAs, involving donors in this activity and implementing NAMAs using the different financial mechanisms of the Convention;

(q) Increasing the climate change awareness of local communities, the private sector, municipalities and other local authorities;

(r) Improving the knowledge and skills required to carry out the intended climate change mitigation measures, by ensuring that experts of the relevant organizations responsible for the implementation of the intended measures have the necessary knowledge of and skills in the new applied technologies;

(s) Creating early warning system on climate change and improving the existing forecasting system in order to prevent possible losses due to climate change impacts;

(t) Developing national adaptation plans that take into account national circumstances and modern scientific knowledge.

III. Conclusions

61. The TTE concludes that:

(a) Most of the elements of information listed in paragraph 3(a) of the ICA guidelines are included in the first BUR of Azerbaijan. In cases when some of the elements were not provided in the BUR, the Party provided clarification/additional information during the technical analysis;

(b) Azerbaijan transparently reported information on its national circumstances and institutional arrangements relevant to the preparation of BURs. Azerbaijan has taken significant steps to create institutional arrangements that allow for the sustainable preparation of BURs. These include organizational improvements within CCOC and knowledge-sharing procedures to facilitate sectoral information transfer. The TTE commends Azerbaijan for the progress made and notes that the plans to improve the overall MRV system of GHG emissions and reductions, as outlined in its BUR, would contribute to achieving sustainable reporting under the secretariat;

(c) Azerbaijan's GHG inventory constitutes an extension and improvement of the previous inventories and covers GHG emissions and removals for the period 1990–2010 using the Revised 1996 IPCC Guidelines, by recalculating the full time series for the years reported in previous national communications. During the technical review, Azerbaijan has transparently reported on its plans and considerations to continuously improve the transparency, consistency, comparability, completeness and accuracy of its national GHG inventories, and is planning steps and institutional arrangements in order to support continuous improvement. The planned arrangements address the collection, processing, assessment, verification, quality assurance and management of uncertainty of data, as well as the storage, use, distribution and presentation of data and information derived from entities holding data for anthropogenic emissions by sources and removals by sinks of GHGs. While Azerbaijan has transparently reported emission trends, the transparency of sources of data, methods and associated use of emission factors applied and planned improvements could be further enhanced;

(d) Azerbaijan reported mitigation actions covering the energy, industry, waste, forestry and agriculture sectors, and clearly indicated that it considers only those mitigation actions that have co-benefits. These actions span the period 2003–2020. The BUR provides information that is consistent with decision 2/CP.17, annex III, paragraphs 11 and 12, on mitigation actions in tabular format and provides a textual description of further sectoral mitigation policies, programmes and actions identified among the mitigation actions. Azerbaijan also provided a prognosis regarding GHG emissions until 2050 mainly covering the energy and transportation sectors using the LEAP model. Azerbaijan has expressed the need to set up a proper and reliable MRV arrangement for mitigation actions in the coming years, including a robust institutional framework;

(e) In its first BUR, Azerbaijan provided transparent and updated information on its existing gaps and constraints, as well as their related needs, in relation to developing a GHG inventory process, NAMAs and an MRV system;

(f) The TTE notes that Azerbaijan has important financial, technical and capacity-building needs in order to prepare national communications and BURs on a

continuous basis and to enable or enhance the implementation of climate change mitigation and adaptation actions.

62. The TTE, in consultation with Azerbaijan, identified 20 capacity-building needs related to the facilitation of reporting in accordance with annex III to decision 2/CP.17 and to the participation in ICA in accordance with annex IV to decision 2/CP.17, taking into account Article 4, paragraph 3, of the Convention. Key capacity-building needs prioritized by Azerbaijan are summarized in chapter II.D above.

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 Azerbaijan. Available at <http://unfccc.int/8722.php>.

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