



United Nations

FCCC/SBI/ICA/2015/TASR.1/AND



Framework Convention on
Climate Change

Distr.: General
24 June 2016

English only

Summary report on the technical analysis of the first biennial update report of Andorra submitted on 19 December 2014

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 Andorra undertaken 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. 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 Andorra 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. Andorra submitted its first BUR on 19 December 2014.
4. The technical analysis of the BUR took place from 18 to 22 May 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. Rodrigue Abourou Otogo (Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE) member from Gabon), Mr. Menouer Boughedaoui (Algeria), Ms. Patricia Grobбен (CGE member from Belgium), Mr. Ghislain Hippolyte Sabin Guendehou (Benin), Mr. Ayité-Lô Ajavon (Togo) and Ms. Silke Christina (Sina) Wartmann (Germany). Mr. Abourou Otogo and Ms. Grobбен were the co-leads. Ms. Sylvie Marchand and Ms. Victoria Novikova (secretariat) provided administrative support to the TTE.
5. During the technical analysis, in addition to the written exchange between the TTE and Andorra, through the secretariat, to provide technical clarifications on the information reported in the BUR, the TTE and Andorra also engaged in consultation, primarily to reach a common understanding on the identification of the capacity-building needs. Following the technical analysis of the BUR, the TTE prepared and shared a draft summary report with Andorra on 13 August 2015 for its review and comments. Andorra, in turn, provided its feedback on the draft summary report on 1 October 2015.
6. The TTE responded to and incorporated the comments referred to in paragraph 5 above from Andorra and finalized, in consultation with Andorra, the summary report on 24 November 2015.

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 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);

(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 Andorra’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” 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 Andorra 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 Andorra

<i>Decision</i>	<i>Reporting requirements</i>	<i>Yes/ Partly/No</i>	<i>Comments on the extent of the information provided</i>
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 first BUR of Andorra covers inventories for the time series 1990–2011
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	Yes	Andorra used the 2006 IPCC Guidelines
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: <ul style="list-style-type: none"> 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) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF₆) 	Yes Yes Partly	The BUR contains a section on national GHG inventories in line with decision 17/CP.8, annex, chapter III Andorra presents summary tables for each reported year in the annexes of the BUR. However, data are not disaggregated according to subcategories in the summary tables Andorra reported emissions of SF ₆ ; notation keys are not used for PFCs and HFCs
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: <ul style="list-style-type: none"> Tables included in annex 3A.2 to chapter 3 of the IPCC good practice guidance for LULUCF The sectoral report tables annexed to the Revised 1996 IPCC Guidelines 	NA No	During the technical analysis, Andorra provided access to a database and sectoral and background tables generated from the use of the 2006 IPCC Guidelines During the technical analysis, Andorra provided access to a database and sectoral and background tables generated from the use of the 2006 IPCC Guidelines

<i>Decision</i>	<i>Reporting requirements</i>	<i>Yes/ Partly/No</i>	<i>Comments on the extent of the information provided</i>
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	NA	Andorra has not submitted a national communication yet, but has reported, in its first BUR, GHG inventories for the time series 1990–2011
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)	NA	The BUR contains the first GHG inventory submitted by Andorra
Decision 2/CP.17, annex III, paragraph 10	Additional or supporting information, including sector-specific information, may be supplied in a technical annex	Yes	Sector-specific additional and supporting information is provided in the annexes of 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	Yes	The BUR and additional information provided by Andorra during the technical analysis describe the data-collection and archiving procedures in place
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: <ul style="list-style-type: none"> • CO₂ • CH₄ • N₂O 	Yes Yes 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	Owing to a lack of data, information on anthropogenic emissions by sources of HFCs and PFCs was not provided. Only emissions of SF ₆ were provided
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: <ul style="list-style-type: none"> • International aviation • Marine bunker fuels 	NA NA	International aviation does not occur in Andorra. Zero is reported instead of the use of notation key “NA” (not applicable) Maritime aviation does not occur in Andorra. Zero is reported instead of the use of notation key “NA” (not applicable)
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:		

<i>Decision</i>	<i>Reporting requirements</i>	<i>Yes/ Partly/No</i>	<i>Comments on the extent of the information provided</i>
	<ul style="list-style-type: none"> • CO • NO_x • NMVOCs 	<p>Yes</p> <p>Yes</p> <p>Yes</p>	
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	SO ₂ emissions are reported
Decision 17/CP.8, annex, paragraph 21	<p>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:</p> <ul style="list-style-type: none"> • Information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol • Explanation of the sources of emission factors • Explanation of the sources of 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: <ul style="list-style-type: none"> ○ 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 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>NA</p> <p>NA</p> <p>NA</p> <p>NA</p> <p>Yes</p>	<p>The 2006 IPCC Guidelines were used by Andorra</p> <p>The majority of the emission factors used are the default values from the 2006 IPCC Guidelines</p> <p>Most of the activity data used are country-specific</p> <p>The TTE identified that Andorra has not reported country-specific sources or sinks</p> <p>Andorra confirmed during the technical analysis that capacity-building is needed to improve data quality and completeness in the transport and AFOLU sectors</p>
Decision 17/CP.8, annex,	Non-Annex I Parties are encouraged to provide information on the level of uncertainty associated with inventory data and their underlying assumptions, and		

<i>Decision</i>	<i>Reporting requirements</i>	<i>Yes/ Partly/No</i>	<i>Comments on the extent of the information provided</i>
paragraph 24	to describe the methodologies used, if any, for estimating these uncertainties:		
	<ul style="list-style-type: none"> Level of uncertainty associated with inventory data 	Partly	The results of uncertainty assessment, generated by the use of the IPCC Inventory Software, are provided in the BUR
	<ul style="list-style-type: none"> Underlying assumptions 	No	This information was not reported in the BUR
	<ul style="list-style-type: none"> Methodologies used, if any, for estimating these uncertainties 	No	This information was not reported in the BUR

Abbreviations: AFOLU = agriculture, forestry and other land use, 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*, NA = not applicable, NMVOC = non-methane volatile organic compound, 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 reporting information on mitigation actions in the BUR are contained in decision 2/CP.17, annex III, paragraphs 11–13.

14. Andorra did report information on mitigation actions in its first BUR, in the sectors of buildings (energy efficiency), energy production (electricity and district heating), transport (low-emission vehicles) and waste. The information on mitigation actions is reported in tabular format.

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 Andorra 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 Andorra

<i>Decision</i>	<i>Reporting requirements</i>	<i>Yes/ Partly/No</i>	<i>Comments on the extent of the information provided</i>
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:		Andorra does not provide information on nationally appropriate mitigation actions in the context of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention
(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	Yes	The description of the nature of the action could be enhanced by using the following categories: legal, financial, regulation, research, education, etc.
(b)	Information on methodologies and assumptions: <ul style="list-style-type: none"> Methodologies 	No	The information provided

<i>Decision</i>	<i>Reporting requirements</i>	<i>Yes/ Partly/No</i>	<i>Comments on the extent of the information provided</i>
	<ul style="list-style-type: none"> Assumptions 	Partly	<p>does not mention which methods were used for the assessment of the effect of the measures. Andorra's BUR contains a section on projections</p> <p>Apart from the waste sector, assumptions are quantified, and time bound information is provided in annex VI</p>
(c)	<p>Objectives of the action and steps taken or envisaged to achieve that action:</p> <ul style="list-style-type: none"> Objectives of the action Steps taken or envisaged to achieve that action 	<p>Yes</p> <p>Yes</p>	
(d)	<p>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:</p> <ul style="list-style-type: none"> Progress of implementation of the mitigation actions Underlying steps taken or envisaged Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible 	<p>Yes</p> <p>Yes</p> <p>Partly</p>	<p>Andorra provides information on the status of the progress indicators, but does not provide information on the estimated emission reductions from the actions or explanations why this could not be estimated</p>
(e)	Information on international market mechanisms	No	<p>For transparency, Andorra could have mentioned if it has projects under the international market mechanisms</p>
Decision 2/CP.17, annex III, paragraph 13	Parties should provide information on the description of domestic measurement, reporting and verification arrangements	No	

Abbreviation: BUR = biennial update report.

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 Andorra 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 Andorra

<i>Decision</i>	<i>Reporting requirements</i>	<i>Yes/ Partly/No</i>	<i>Comments on the extent of the information provided</i>
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:		
	<ul style="list-style-type: none"> • Constraints and gaps 	No	This information was no in the BUR. Andorra has self-financed the preparation of its BUR
	<ul style="list-style-type: none"> • 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	Yes	Information on financial resources, capacity-building and technical support received is provided in a transparent manner
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:		
	<ul style="list-style-type: none"> • Technology needs, which must be nationally determined 	Yes	
	<ul style="list-style-type: none"> • 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. The BUR is the first report that Andorra has submitted to the secretariat. The TTE commends Andorra for this effort.

22. In accordance with decision 17/CP.8, annex, paragraph 3, Andorra, in its BUR, reported the following information on national circumstances: features of its geography, hydrogeology, climate, population and economy. The presented information on national circumstances mostly supports the understanding of the remaining information provided in the BUR. The TTE noted that the provision of more detailed sectoral information, for example, on sectoral GHG emission drivers, could enhance transparency of information reported on mitigation measures and the national GHG inventory data presented in the BUR.

23. Andorra, in its BUR, describes institutional arrangements relevant to the preparation of national communications and BURs on a continuous basis. The description covers key aspects of the institutional arrangements such as the roles and responsibilities of the overall coordinating entity, and the involvement and roles of other institutions and experts.

24. The BUR indicates that the overall responsibility for the preparation of national communications and BURs lies with the Ministry for Environment and Tourism. The preparation process is guided by a steering committee formed from stakeholders of relevant administration entities, the private sector and non-governmental organizations.

25. Three working groups were created for the compilation of national communications and BURs: a working group for the national GHG inventory and mitigation, a working group on vulnerability and adaptation and a working group on cross-cutting issues, including education, assessment of technology needs, and systematic observation and research. The working group on vulnerability and adaptation has not yet been implemented, as it is only relevant to the compilation of national communications and not to BURs.

26. During the analysis week, Andorra informed the TTE that as part of ministerial restructuring activities, an agency for Energy and Climate Change was established under the newly created Ministry of Environment, Agriculture and Sustainable Development in April 2015. This agency is responsible for the reporting of national communications and BURs, and will make use of the steering committee and the working groups for these reporting tasks.

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

27. In accordance with decision 2/CP.17, annex III, paragraph 3, Andorra reported, in its BUR, information on national GHG inventories covering emissions and removals for the time series for the period 1990–2011. The TTE notes with appreciation the efforts made by Andorra to report emissions and removals for this long time series, given that this BUR is the first submission from Andorra to the secretariat. To estimate emissions and removals, Andorra used the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the 2006 IPCC Guidelines), together with a combination of country-specific activity data and emission factors (e.g. root-to-shoot ratio and carbon fraction) and default emission factors from the 2006 IPCC Guidelines. During the technical analysis, Andorra described the data-collection procedures and agreed that the archiving system needs to be improved. The Party also confirmed that capacity-building is needed to improve the data quality in the transport sector and in the agriculture, forestry and other land use (AFOLU) sector.

28. The information reported by Andorra in its BUR relating to the methodology used for the GHG inventory, is not transparently reported. The TTE noted that the transparency of the information reported could have been enhanced by including information on how GHG emissions and removals were calculated. During the technical analysis, in response to technical clarification sought by the TTE, Andorra provided access to the database containing worksheets and sectoral and background tables of the IPCC Inventory Software, which enabled the TTE to understand the methodologies and data used.

29. During the technical analysis, the TTE identified that the results of the key category analysis and uncertainty assessment were generated by the IPCC Inventory Software. From the table on uncertainty of the software, uncertainty ranges reported by Andorra were 1.0–40.0 per cent and 5.0–50.0 per cent for activity data and emission factors, respectively. However, no description explaining how this information was generated is provided. The TTE noted that the transparency of information reported on the approach used to derive the uncertainties of activity data and emission factors, could have been enhanced, if this information was reported in the BUR. Given that this first BUR of Andorra includes the first GHG inventories developed by Andorra, no recalculations were performed. However, Andorra indicated, during the technical analysis, that the next submission will include recalculations to reflect possible changes in the data.

30. The inventory of Andorra covers the majority of categories and subcategories. Owing to a lack of data, only emissions of sulphur hexafluoride (SF₆) were reported, but emissions of hydrofluorocarbons (HFCs) and perfluorocarbons were not reported. The TTE noted that the transparency of information reported could have been enhanced by using a proxy of a cluster of neighbouring countries to estimate emissions of fluorinated gases (F-gases).

31. Quality assurance (QA) was conducted by the GHG inventory team leader of Andorra, who was already fully involved in the inventory process; this is not in line with the IPCC *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* (hereinafter referred to as the IPCC good practice guidance). During the technical analysis, Andorra agreed that QA should be carried out by an external expert not involved in the inventory process, as mentioned in the BUR. The TTE noted that the transparency of information reported on quality of the future QA/quality control (QC) could have been enhanced through capacity-building of local experts.

32. The energy sector, with 69 per cent of its emissions from transport, is the largest source of GHG emissions in Andorra. It contributed to 97 per cent of the total emissions in 2011. Andorra currently imports electricity from France and Spain, and does not have domestic electricity generation. The emission estimates from transport were based on fuel imports, which increased during the period 1990–2011. The TTE, in consultation with Andorra, highlighted the need for calculations based on the vehicle fleet and country-specific parameters such as mileage and vehicle standards. Andorra does have enough information to improve its emissions inventory. Helicopters are used for domestic and international transport, but are not accounted for under international bunkers to be in line with the IPCC good practice guidance. Waste incineration for power generation is reported under the waste category. The methodology is described, with activity data reported for all subcategories. Following the consultation during the technical analysis, Andorra submitted calculation tables generated by the IPCC Inventory Software, which was highly appreciated by the TTE as it facilitated the technical analysis of the reported information.

33. There is no industrial activity in Andorra, but there are emissions from product use, which accounted for 0.5 per cent of the total emissions of Andorra during the year 2011. F-gas emissions are estimated only for SF₆ used in power distribution, and the methodology is described using activity data and emission factors. However, HFCs from air conditioning and refrigeration are not estimated because of a lack of data. During the technical analysis,

the TTE, in consultation with the Party, identified the use of a methodology based on a proxy of a cluster of neighbouring countries, such as Spain and France, to estimate emissions from these subcategories as a possible area for capacity-building.

34. In 2011, in the AFOLU sector, removals amounted to 128.08 Gg carbon dioxide equivalent (CO₂ eq), while emissions accounted for 5.25 Gg CO₂ eq. For the years 2010 and 2011, emissions and removals varied only slightly.

35. The categories of forest land remaining forest land and land converted to other land were identified as key categories in the AFOLU sector. The IPCC Inventory Software, which is based on the 2006 IPCC Guidelines, was used to estimate emissions and removals. Andorra has sporadic data on land area for the years 1972, 1995 and 2006. To fill in historical data gaps on land area, in order to report inventory data for the time series 1990–2011, Andorra applied an interpolation approach for the time periods 1972–1995 and 1995–2006. The TTE, in consultation with the Party, identified that using interpolation over long periods of time (i.e. 23 years and 11 years) is not in line with the IPCC good practice guidance. Andorra clarified, during the technical analysis, that given the small size of the country, the inter-annual variation in land area is unlikely to be large. Andorra agreed that collecting historical data on land area using, for example, remote-sensing techniques and satellite images in order to fill data gaps and enhancing the time-series consistency is an area for improvement. The TTE noted that the transparency of information reported on data quality on the land area could be enhanced by using remote-sensing techniques.

36. To estimate changes in carbon stocks in living biomass in forest land, Andorra has applied the gain–loss method. The IPCC default parameters on biomass growth and country-specific data on root-to-shoot ratio and carbon fraction were used to derive the increase in biomass. Andorra reported biomass loss resulting from commercial felling, fuelwood gathering and fires as zero, and clarified that these disturbances occur at very insignificant scales.

37. For dead wood and litter, Andorra used the IPCC tier 1 assumption that there is no change in carbon stocks in these pools.

38. The TTE noted high inter-annual variations in emissions during the periods 1990–1995, 1995–2000 and 2005–2010 for cropland. In response to technical clarification sought by the TTE during the technical analysis, Andorra clarified that there was an error in the figures reported in the IPCC Inventory Software and that this will be corrected in the next submission.

39. The category ‘other’ reported by Andorra in its national land classification is artificial and does not match the IPCC definition. It was used to meet the integrity of the country, that is, to match the sum of land area of land-use categories with the total area of the country. Andorra agreed with the finding during the technical analysis and confirmed the need to improve the data quality on land area in the AFOLU sector (see para. 35 above).

40. Andorra has a selective collection system of waste; waste is exported for recycling and reuse, which drastically reduces the amount of waste for incineration. Emissions from waste accounted for 1.42 per cent of the total emissions of Andorra in 2011. Up to 78 per cent of emissions from waste are generated by waste incineration. As there are no industrial activities in Andorra, all wastewater is considered to be urban wastewater and is treated at the same water treatment station. The methodology is described well for this category, with activity data for all subcategories and emission factors used and reported in a transparent manner.

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

41. As indicated in table 2 above, Andorra reported, in its BUR, information on mitigation actions and their effects. Considering the national circumstances of Andorra, the TTE commends Andorra for its efforts to report in a transparent way on the different reporting elements on mitigation actions as required by the UNFCCC reporting guidelines on BURs.

42. Andorra reports on four mitigation actions, in the sectors of buildings (energy efficiency), energy production (electricity and district heating), transport (low-emission vehicles) and waste. These actions cover carbon dioxide and methane emissions. The time-horizon for the achievement of the targets is 2030 for the electricity generation sector and 2050 for the actions in the buildings and transport sectors. The time-horizon for the actions in the waste sector is not clearly specified in the tables on mitigation actions.

43. In general, Andorra provides a transparent description of its mitigation actions. It specifies the coverage in terms of sectors and gases, the quantified objectives and the progress indicators. The TTE considers that the reporting on the nature of the action could be enhanced by using a description such as legal, financial, regulation, research, education, etc. Andorra provided this information to the TTE during the technical analysis.

44. Andorra does not describe the methodologies used to estimate the effects of its mitigation actions. However, the BUR includes a section on GHG projections until 2050 under three scenarios: 'business as usual' (BAU), 'with existing measures' and 'with additional measures'. The latter has two subscenarios distinguishing the effects of the introduction of electric vehicles on internal fuel consumption and on the total fuel sold in the country. Annex VI of the BUR transparently describes how the projections were established for the different scenarios, as well as the adjustments made to previously established estimates for relevant parameters to better reflect the current national circumstances. The report provides the GHG emission reduction effects for the 'with measures' and 'with additional measures' scenarios in relative terms (percentages) compared to the BAU scenario and absolute data for the two 'with additional measures' subscenarios. During the technical analysis, Andorra provided further clarification on its approach to the projections and the way that its mitigation actions are included in the different scenarios.

45. The assumptions related to the implementation of the mitigation measures in the energy production sector (electricity and district heating) provide specific time-horizons, but this is not the case for the measures in the buildings, transport and waste sectors. During the technical analysis, Andorra provided additional information in relation to the vehicle fleet in the country, which contributed to a better understanding of the mitigation actions in the transport sector.

46. Andorra clearly describes the steps taken or envisaged to achieve the actions, and it provides information on the actual implementation level of the different actions by means of the status of progress indicators. It does not estimate the GHG emission reduction effect and it does not provide clarification why this was not estimated. During the technical analysis, the TTE explored with Andorra the option of using the progress indicators to estimate the GHG emission reduction effect.

47. Andorra does not report information on international market mechanisms. The TTE noted that transparency of the information reported could be enhanced if, Andorra included information in its BUR, if it has participated or planned to participate in the international market mechanisms.

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

48. Andorra reported information on the identification of technical, capacity-building, financial and technology needs. A summary of information on support received in terms of financial resources, technology transfer, capacity-building needs and technical needs is also reported.

49. The TTE noted that Andorra did not seek any financial support for the preparation of the BUR. Technical support was received from the United Nations Environment Programme, but this information was not reported as such, in line with the decision 2/CP.17, annex III, paragraph 15, as the requirement for reporting on technical support received for activities relating to climate change.

50. Further, the TTE noted the real technical, capacity-building, financial and technology support needs and the challenges to Andorra for attracting and monitoring the finance with the aim to build capacities and implement the projects relating to climate change, including the preparation of the BUR.

51. Finally, the information reported on constraints and gaps in accordance with decision 2/CP.17, annex III, paragraph 14, with a focus on barriers, challenges and bottlenecks in the preparation of the BUR could have been enhanced if Andorra highlighted the inadequacy of its human resources for technical needs (e.g. preparation of the GHG inventory and implementation of mitigation actions) and the need for an institutional arrangement that can ensure more effectively the preparation of the BUR (by strengthening capacity-building).

5. Domestic measurement, reporting and verification

52. In its BUR, Andorra did not provide information on its domestic MRV arrangements. During the technical analysis, Andorra reiterated the fact that it is a small country with a low residential population. Owing to the small size of the country, relevant actors, both public and private, are in close contact with each other, which contributes to the exchange of information. Andorra informed the TTE that the newly created Energy and Climate Change Agency will be in charge of the monitoring and verification of the progress of implementation of Andorra's mitigation actions.

D. Identification of capacity-building needs

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

(a) Further understanding the UNFCCC reporting guidelines on BURs, the specific reporting requirements and the level of detail expected with respect to reporting information on mitigation actions and their effects, and identifying mitigation actions and how to group them in a coherent manner;

(b) Establishing methodologies to estimate the GHG emission reduction effects of mitigation actions;

(c) Developing a domestic MRV system that is able to generate the required information in a more automated way;

(d) Enhancing the technical capacity to collect historical data in order to improve the time-series consistency in the AFOLU sector and to improve the data quality in the transport sector;

- (e) Improving institutional arrangements for GHG inventories, in particular, the archiving system;
- (f) Improving the transparency on uncertainties associated with activity data and emission factors;
- (g) Capacity-building to reinforce local expertise on QA/QC;
- (h) Training national experts on the use of techniques for using a proxy to fill in gaps or lack of data to estimate emissions of F-gases;
- (i) Capacity-building to reinforce the understanding and the importance of the reporting of constraints and gaps in the BUR.

III. Conclusions

54. 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 Andorra;
- (b) The provision of more detailed sectoral information, for example, on sectoral GHG emission drivers, could have enhanced the information reported on mitigation measures and the national GHG inventory data presented in the BUR (see para. 22 above);
- (c) The GHG inventory of Andorra covers the majority of categories and subcategories. The additional and supporting material provided by Andorra during the technical analysis facilitated the technical analysis of the GHG emissions and removals calculations (see paras. 27 and 28 above);
- (d) The improvement of inventory data for the AFOLU and transport sectors will greatly contribute to improving the quality of information on the GHG inventory of Andorra;
- (e) The transparency of information on the approach used to derive uncertainties of activity data and emission factors needs to be further enhanced;
- (f) In general, Andorra reported in a transparent way on the four mitigation actions included in the BUR. The transparency of the reporting on the nature of the actions, methodologies to estimate the effects of the mitigation actions and the links to GHG reduction effects could be enhanced (see para. 42 above);
- (g) Andorra reported information on financial, technical and capacity-building needs in a transparent manner.

55. The TTE, in consultation with Andorra, identified nine 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 Andorra 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 Andorra. Available at <<http://unfccc.int/8722.php>>.
