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Technical analysis of the fourth biennial update report of Argentina submitted on 31 December 2021

Summary report by the team of technical experts

Summary

According to decision 2/CP.17, paragraph 41(a), Parties not included in Annex I to the Convention, consistently with their capabilities and the level of support provided for reporting, were to submit their first biennial update report by December 2014. Further, paragraph 41(f) of that decision states that Parties not included in Annex I to the Convention shall submit a biennial update report every two years, either as a summary of parts of their national communication in the year in which the national communication is submitted or as a stand-alone update report. As mandated, the least developed country Parties and small island developing States may submit biennial update reports at their discretion. This summary report presents the results of the technical analysis of the fourth biennial update report of Argentina, conducted by a team of technical experts in accordance with the modalities and procedures contained in the annex to decision 20/CP.19.

Abbreviations and acronyms

2006 IPCC Guidelines	*2006 IPCC Guidelines for National Greenhouse Gas Inventories*
2019 Refinement to the 2006 IPCC Guidelines	*2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*
AD	activity data
AFOLU	agriculture, forestry and other land use
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BUR	biennial update report
CDM	clean development mechanism
CER	certified emission reduction
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
EF	emission factor
ETF	enhanced transparency framework under the Paris Agreement
GEF	Global Environment Facility
GHG	greenhouse gas
GSF	Gold Standard Foundation
GWP	global warming potential
HFC	hydrofluorocarbon
HWP	harvested wood products
ICA	international consultation and analysis
IE	included elsewhere
IEF	implied emission factor
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*
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
MRV	measurement, reporting and verification
N_2O	nitrous oxide
NA	not applicable
NC	national communication
NDC	nationally determined contribution
NE	not estimated
NIR	national inventory report
NO	not occurring
non-Annex I Party	Party not included in Annex I to the Convention
PFC	perfluorocarbon
QA/QC	quality assurance/quality control
REDD+	reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks (decision 1/CP.16, para. 70)
Revised 1996 IPCC Guidelines	*Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*
SF_6	sulfur hexafluoride

TTE	team of technical experts
UNFCCC guidelines for the preparation of NCs from non-Annex I Parties	"Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention"
UNFCCC reporting guidelines on BURs	"UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention"
VCS	Verified Carbon Standard

I. Introduction and process overview

A. Introduction

1. The process of ICA consists of two steps: a technical analysis of the submitted BUR and a facilitative sharing of views under the Subsidiary Body for Implementation, resulting in a summary report and a record, respectively.

2. According to decision 2/CP.17, paragraph 41(a), non-Annex I Parties, consistently with their capabilities and the level of support provided for reporting, were to submit their first BUR by December 2014. In addition, paragraph 41(f) of that decision states that non-Annex I Parties shall submit a BUR every two years, either as a summary of parts of their NC in the year in which the NC is submitted or as a stand-alone update report.

3. Further, according to paragraph 58(a) of the same decision, the first round of ICA is to commence for non-Annex I Parties within six months of the submission of the Parties' first BUR. The frequency of developing country Parties' participation in subsequent rounds of ICA, depending on their respective capabilities and national circumstances, and the special flexibility for small island developing States and the least developed country Parties, will be determined by the frequency of the submission of BURs.

4. Decision 14/CP.19, paragraph 7, outlines that developing country Parties seeking to obtain and receive payments for results-based actions can submit relevant information and data through the BUR in the form of a technical annex as per decision 2/CP.17, annex III, paragraph 19.[1] Decision 14/CP.19, paragraph 8, outlines that the submission of the technical annex is voluntary and in the context of results-based payments. As mandated by decision 14/CP.19, paragraphs 10–14, the technical annex submitted by Argentina has been subject to technical analysis by two LULUCF experts who are included as members of a TTE. The results of the technical analysis are captured in a separate technical report.[2]

5. Argentina submitted its third BUR on 26 November 2019, which was analysed by a TTE in the fifteenth round of technical analysis of BURs from non-Annex I Parties, conducted from 9 to 13 March 2020. After the publication of its summary report, Argentina participated in the tenth workshop for the facilitative sharing of views, convened remotely on 11 June 2021.

6. This summary report presents the results of the technical analysis of the fourth BUR of Argentina, undertaken by a 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

7. In accordance with the mandate referred to in paragraph 2 above, Argentina submitted its fourth BUR on 31 December 2021 as a stand-alone update report. The submission was made within two years and two months from the submission of the third BUR.

8. A desk analysis of Argentina's BUR was conducted remotely from 4 to 8 April 2022 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: Zuelclady Maria Fernanda Araujo Gutiérrez (Mexico), Juliana Bempah Boateng (Ghana), Luis Caceres Silva (former member of the Consultative Group of Experts from Ecuador), Andres B. Espejo (Spain), Ngozi Eze (Nigeria), Nicolo Macaluso (Canada), Marcela Itzel Olguin-Alvarez (Mexico), Lucio Santos (Colombia), Kimberly Todd (United States of America) and Alexander Valencia (Colombia). Nicolo Macaluso and Marcela Itzel Olguin-Alvarez were the co-leads. The technical analysis was coordinated by Javier Hanna Figueroa and Gopal Joshi (secretariat).

[1] The technical annex on the results of implementing REDD+ activities.

[2] FCCC/SBI/ICA/2022/TATR.2/ARG.

9. During the technical analysis, in addition to the written exchange, in the virtual team room, to provide technical clarifications on the information reported in the BUR, the TTE and Argentina engaged in consultation[3] on the identification of capacity-building needs for the preparation of BURs and participation in the ICA process. Following the technical analysis of Argentina's fourth BUR, the TTE prepared and shared a draft summary report with Argentina on 1 July 2022 for its review and comment. Argentina, in turn, provided its feedback on the draft summary report on 26 September, 11 November and 5 December 2022.

10. The TTE responded to and incorporated Argentina's comments referred to in paragraph 9 above and finalized the summary report in consultation with the Party on 26 December 2022.

II. Technical analysis of the biennial update report

A. Scope of the technical analysis

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

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

(b) A technical analysis of the information reported in the BUR, specified in the UNFCCC reporting guidelines on BURs (decision 2/CP.17, annex III), and any additional technical information provided by the Party concerned (see chap. II.C below);

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

12. The remainder of this chapter presents the results of each of the three parts of the technical analysis of Argentina's BUR outlined in paragraph 11 above.

B. Extent of the information reported

13. The elements of information referred to in paragraph 11(a) above include the national GHG inventory report; information on mitigation actions, including a description of such actions, an analysis of their impacts and the associated methodologies and assumptions, and information on progress in their implementation; information on domestic MRV; and information on support needed and received.

14. According to decision 20/CP.19, annex, paragraph 15(a), in undertaking the technical analysis of the submitted BUR, the TTE is to identify the extent to which the elements of information listed in paragraph 13 above have been included in the BUR of the Party concerned. The TTE considers that the reported information is mostly consistent with the UNFCCC reporting guidelines on BURs. Specific details on the extent of the information reported for each of the required elements are provided in the tables included in annex I.

15. The current TTE noted improvements in the reporting in Argentina's fourth BUR compared with that in its previous BUR. Information on the GHG inventory, mitigation actions and their effects, and domestic MRV reported in the Party's fourth BUR demonstrates that it has taken into consideration the areas for enhancing the transparency of the extent of

[3] The consultation was conducted via videoconferencing.

the information reported noted by the previous TTE in the summary report on the technical analysis of the Party's third BUR.

16. Regarding the areas for enhancing understanding of the extent of the information reported in the BUR noted by the previous TTE in the summary report on the technical analysis of the Party's previous BUR, Argentina identified the areas that were not addressed in its current BUR. They include information on methodologies and results achieved for each mitigation action, technical support received and technology needs, which are potential areas for enhancing national capacity.

C. Technical analysis of the information reported

17. The technical analysis referred to in paragraph 11(b) above aims to increase the transparency of information reported by the Parties on mitigation actions and their effects, without engaging in a discussion on the appropriateness of those actions. Accordingly, the focus of the technical analysis was on the transparency of the information reported in the BUR.

18. For information reported on national GHG inventories, the technical analysis also focused on the consistency of the methods used for preparing those inventories with the appropriate methods developed by the IPCC and referred to in the UNFCCC reporting guidelines on BURs. Argentina submitted an NIR as a stand-alone document and, further to consultations with the TTE, requested a more detailed analysis and documentation of the findings contained in the NIR to be undertaken using the agreed GHG inventory tool. During the technical analysis, Argentina provided to the TTE a spreadsheet with sectoral and summary tables for its GHG inventory. In addition, in its comments to the draft summary report, Argentina indicated that this approach was a testing ground for the transition to the ETF, before it becomes fully operational.

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

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

20. As per the scope defined in paragraph 2 of the UNFCCC reporting guidelines on BURs, the BUR should provide an update to the information contained in the most recently submitted NC, including information on national circumstances and institutional arrangements relevant to the preparation of NCs on a continuous basis. In their NCs, non-Annex I Parties report on their national circumstances following the reporting guidance contained in decision 17/CP.8, annex, paragraphs 3–5, and they could report similar information in their BUR, which is an update of their most recently submitted NC.

21. In its fourth BUR, Argentina provided an update on its national circumstances, including a description of national and regional development priorities, objectives and circumstances, covering features of geography, climate, economy, demography and spatial planning that might affect the Party's ability to deal with mitigating and adapting to climate change, as well as information regarding national circumstances and constraints on the specific needs and concerns arising from the adverse effects of climate change.

22. Argentina has an area of 3.8 million km^2. As at 2018, Argentina had 44.9 million inhabitants, with an average population density of 11 inhabitants/km^2. Most of the population (91 per cent) lives in urban areas, and 32 per cent of the urban population is located in the Metropolitan Area of Buenos Aires.

23. The variety of climatic characteristics of Argentina is influenced by the Andes Mountains and the southern Atlantic and Southern Oceans, as well as by the latitudes it spans. The west and south of the country are characterized by arid regions with cold climatic conditions. In contrast, in the north, the climate is warm, with a significant annual rainfall gradient from east to west. In the centre and east of the country the climate is mild.

24. In 2018, the country's main economic sectors, in terms of generation of aggregate value, were manufacturing (20 per cent), trade (15 per cent), real estate (13 per cent),

transport, storage and communications (10 per cent) and livestock, hunting and agroforestry (7 per cent). In that year, the main source of energy was of fossil origin – a total of around 88 per cent comprising natural gas (58 per cent), oil and its derivatives (28 per cent) and mineral coal (1 per cent). Hydropower and nuclear energy contributed to the country's energy mix, approximately 6 and 2 per cent, respectively, and non-conventional renewable sources (biomass, small-scale hydroelectric, wind and solar) contributed around 5 per cent.

25. Argentina's participation in foreign markets is strongly led by its agriculture sector, including by both primary products and products that involve some type of manufacturing. The main products of this economic area are oil seeds and cereals: the area under their cultivation has a general growing trend and reached almost 39 million ha in the 2017–2018 cultivation campaign. More than 95 per cent of grains harvested are moved by long-distance heavy-duty road transport.

26. Argentina reported in its fourth BUR an update on its existing institutional arrangements relevant to the preparation of its NCs and BURs. The description covers key aspects of the institutional arrangements, including the legal status and roles and responsibilities of the overall coordinating entity, the involvement and roles of other institutions and experts, mechanisms for information and data exchange, QA/QC procedures and provisions for public consultation and other forms of stakeholder engagement. The TTE noted improvements to the information reported in the BUR, including the details provided about law 27520 (Minimum Standards for Adaptation and Mitigation to Global Climate Change) passed in 2019 and its regulatory decree 1030 (approved in 2020), which institutionalized the National Climate Change Cabinet created in 2016 by national decree 891/2016 as the governmental body responsible for designing national climate change adaptation and mitigation policies. In addition, the National Climate Change Directorate, which is part of the Ministry of Environment and Sustainable Development, is responsible for coordinating the preparation of the national GHG inventory and managing the funds for the preparation of NCs and BURs.

27. Information on institutional arrangements relevant to the preparation and reporting of future NCs and BURs on a continuous basis was not clearly reported in Argentina's BUR. During the technical analysis, the Party clarified that the Law on Minimum Standards for Adaptation and Mitigation to Global Climate Change and its regulatory decree created the legal framework for developing and reporting on climate change aspects. In addition, under this framework, the National Climate Change Information System was created as a key tool for ensuring the transparency and promoting the collection of information required for preparing future reports on a continuous basis. For example, the MRV system for mitigation actions, a key component of the System, operates on a continuous improvement cycle and will be updated in accordance with the requirements of the ETF. In its comments to the draft summary report, Argentina emphasized that external funding for reporting is a commitment and should be ensured in order to support developing countries in fulfilling their reporting commitments under the UNFCCC, beyond their domestic institutional arrangements.

28. The TTE noted that the transparency of the information reported on institutional arrangements could be further enhanced by addressing the areas noted in paragraph 27 above, which could facilitate a better understanding of the information reported on institutional arrangements since the submission of Argentina's previous BUR.

29. In paragraph 27 of the summary report on the technical analysis of Argentina's third BUR, the previous TTE noted areas where the transparency of the reporting on institutional arrangements could be further enhanced, specifically reporting on mechanisms for information and data exchange, QA/QC procedures and provisions for public consultation. The current TTE noted the improvements referred to in paragraph 26 above and commends the Party for enhancing the transparency of its reporting.

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

30. As indicated in table I.1, Argentina reported information on its GHG inventory in its BUR mostly in accordance with paragraphs 3–10 of the UNFCCC reporting guidelines on BURs and paragraphs 8–24 of the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties, contained in the annex to decision 17/CP.8.

31. Argentina submitted its fourth BUR in 2021 and the GHG inventory reported is for 1990–2018. The GHG inventory is consistent with the requirements for the reporting time frame.

32. Argentina submitted an NIR with its fourth BUR on 9 March 2022 (three weeks before the technical analysis). The relevant sections of the NIR were referenced in the BUR and the document was made publicly available on the UNFCCC website.[4] During the technical analysis, the Party clarified that, as Argentina is a non-Annex I Party, the NIR is a voluntary report, and Argentina has decided to submit the NIR in conjunction with its fourth BUR. The NIR was not submitted in conjunction with the fourth BUR owing to a combination of the limited human resources available for supporting different aspects of the reporting process and the lack of access, within the required time frame, to external financial mechanisms that would have provided the Party the resources it needed in time to prepare the reports and submit them to the UNFCCC.

33. On the basis of the information provided in the BUR (p.130), more than 60 per cent of the GHG emissions and removals covering the 1990–2018 inventories were estimated using tier 1 methodologies with revised EFs and tier 2 and in few cases tier 3 methodologies from the 2006 IPCC Guidelines. For example, under the IPPU sector, a tier 2 methodology was used for estimating CO_2 emissions from 2.A.1 cement production and a tier 3 methodology was used for estimating PFC emissions from 2.C.3 aluminium production (using plant-specific EFs). Under the AFOLU sector, tier 2 methodologies were used for estimating CH_4 emissions from enteric fermentation for dairy and non-dairy cattle, CH_4 and N_2O emissions from manure management for dairy and non-dairy cattle, N_2O emissions from managed soils, CO_2 emissions and removals for biomass under forest land remaining forest land and CO_2 emissions for biomass under forest land converted to cropland or grassland. The TTE commends Argentina for using the methodologies from the 2006 IPCC Guidelines and, for some categories, the 2019 Refinement to the 2006 IPCC Guidelines for reporting emissions and removals in its fourth BUR.

34. For some categories, the information reported in summary tables in both the BUR and the NIR was not consistent with the more detailed information reported by category in the NIR tables. The reason for these inconsistencies was not clear to the TTE. For example, in the NIR, Argentina reported using both tier 1 and tier 2 methodologies for calculating emissions for the categories 3.B.2 cropland (table 502, p.876) and 3.B.3 grassland (table 507, p.887), while it reported using a tier 2 methodology for the same categories in its BUR (table 17, p.133) and in a summary table of the NIR (table 264, p.555). In its comments to the draft summary report, Argentina explained that different subcategories within the categories (for example under category 3.B.2 cropland) were calculated using tier 1 or tier 2 methodologies according to the information available, but in the BUR tables only tier 2 was reported as these tables provide the information aggregated by categories. Another example of the lack in consistency is the reporting of other halogenated gases. In summary table 33 of the BUR (p.155), Argentina reported emissions of 3.62 Gg CO_2 eq from other halogenated gases for the category 2.F product uses as substitutes for ozone-depleting substances, but in table 41 of the BUR (p.169), it reported these emissions as "NO". In its comments to the draft summary report, the Party clarified that the inconsistency identified between summary table 33 and sectoral table 41 is owing to a difference in the criteria used to report HFC-365 and HFC-245fa, which do not have GWP values provided by the IPCC in its AR2. In the summary table these gases were reported under the column "Other halogenated gases with CO_2 equivalent conversion factors" using the GWP values provided by the IPCC in its AR4, as indicated in the BUR (table 14, p.129), while in the sectoral table they were reported under the column "Other halogenated gases without CO_2 equivalent conversion factors".

35. Information on AD and EFs used and their sources was clearly reported in the BUR, including information by category and subcategory.

36. Information on the Party's total GHG emissions by gas for 1990–2018 is outlined in table 1 in Gg CO_2 eq. It shows an increase in emissions of 38.8 per cent including land and

[4] http://unfccc.int/BURs.

HWP and other emissions since 1990 (102,351.16 Gg CO_2 eq) and 52.9 per cent excluding land and HWP and other emissions since 1990 (113,789.97 Gg CO_2 eq).

Table 1
Greenhouse gas emissions by gas of Argentina for 1990–2018

Gas	*GHG emissions (Gg CO_2 eq) including land and HWP*[a]	*% change 1990–2018*	*GHG emissions (Gg CO_2 eq) excluding land and HWP*[a]	*% change 1990–2018*
CO_2	230 875.06	56.1	194 032.89	94.8
CH_4	82 872.35	8.3	82 872.35	8.3
N_2O	46 996.18	20.3	46 996.18	20.3
HFCs	5 130.31	NA[b]	5 130.31	NA
PFCs	12.26	–75.6	12.26	–75.6
SF_6	–	NA	–	NA
Other	3.62	NA	3.62	NA
Total	365 889.78	38.8	329,047.61	52.9

[a] 2006 IPCC Guidelines AFOLU category 3.B (land) and 3.D (HWP (3.D.1) and other emissions (3.D.2)).
[b] HFC emissions were not reported for 1990.

37. Information on other emissions was clearly reported, including 840.33 Gg nitrogen oxides, 5,247.72 Gg carbon monoxide, 675.79 Gg non-methane volatile organic compounds and 78.40 Gg sulfur dioxide for 2018.

38. Information on SF_6 emissions at the national level and for the IPPU sector was reported using "-" in Argentina's BUR (tables 33–34, pp.155–156), without an explanation in the main text of the BUR or as a footnote to tables 33–34, and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that "-" was used for cases when specific notation keys were used at the level of the categories or subcategories (as reported in BUR tables 21–22, pp.138–139) that are part of the SF_6 emissions at the national level or the IPPU sector level. Also, the Party clarified that it lacks the sustained financial and human resources required for addressing both the lack of AD and EFs and their systematization for estimating SF_6 emissions, as well as for adapting the templates used as part of the national GHG inventory system.

39. Argentina applied notation keys in tables where numerical data were not provided. The use of notation keys was mostly consistent with the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties. Argentina used "NO", "NE", "NA" or "IE" in its BUR for emissions for some categories and subcategories across all sectors.

40. The Party reported as "NO" the emissions from 1.B.1.a.ii surface mines (CO_2 and CH_4); 1.C CO_2 transport and storage (CO_2, CH_4 and N_2O); 2.B.3 adipic acid production (CO_2, CH_4 and N_2O); 2.B.4 caprolactam, glyoxal and glyoxylic acid production (CO_2, CH_4 and N_2O); 2.B.6 titanium dioxide production (CO_2, CH_4 and N_2O); 2.B.8.d ethylene oxide (CO_2, CH_4 and N_2O); 2.B.8.e acrylonitrile (CO_2, CH_4 and N_2O); and 2.E electronics industry (CO_2, CH_4, N_2O, HFCs, PFCs and SF_6).

41. The Party reported as "NE" emissions from 1.A.1.c.i manufacture of solid fuels (CO_2, CH_4 and N_2O); 1.B.1 fugitive emissions from solid fuels (CO_2); 1.B.2.a.iii other oil emissions from energy production (CO_2 and CH_4); 1.B.2.b.iii other natural gas emissions from energy production (CO_2 and CH_4); 1.B.3 other emissions from energy production (CO_2, CH_4 and N_2O); 2.A.3 glass production (CO_2 and CH_4); 2.A.5 other (mineral industry) (CO_2, CH_4 and N_2O); 2.B.10 other (chemical industry) (CO_2, CH_4 and N_2O); 2.C.4 magnesium production (CO_2); 2.C.5 lead production (CO_2); 2.C.7 other (metal industry) (CO_2, CH_4 and N_2O); 2.D.2 paraffin wax use (CH_4 and N_2O); 2.D.4 other (non-energy products from fuels and solvent use) (CO_2, CH_4 and N_2O); 2.G other product manufacture and use (CO_2, CH_4 and N_2O); 2.H.1 pulp and paper industry (CO_2 and CH_4); 2.H.2 food and beverages industry (CO_2 and CH_4); 2.H.3 other (CO_2 and CH_4); 3.B.1.b land converted to forest land (CO_2); 3.B.4 wetlands (CO_2, CH_4 and N_2O); 3.B.5 settlements (CO_2, CH_4 and N_2O); 3.B.6 other land (CO_2, CH_4 and N_2O);

3.C.2 liming (CO_2); 3.C.8 other (aggregate sources and non-CO_2 emissions sources on land) (CO_2, CH_4 and N_2O); and 4.C.2 open burning of waste (CO_2, CH_4 and N_2O).

42. Information on the use of "NE" for most categories and subcategories noted in paragraph 41 above was clearly reported in tables 19–26 of the BUR (pp.136–143), together with the rationale for the lack of estimates for each category. However, the TTE noted that emissions of some gases for some of these categories and subcategories may not occur in the country and therefore the correct notation key would be "NO", in particular in cases when the 2006 IPCC Guidelines do not provide specific methodological guidance for estimating emissions of such gases for the activities defined under the categories or subcategories mentioned above or when the relevant activities in combination with the possible related emissions do not occur in the country. The reason for this was not clear to the TTE. During the technical analysis, the Party explained that "NE" was used in categories for which emissions occur in the country, but default EFs or IPCC calculation methods are not available as a conservative criterion to allow the Party to further analyse completeness and identify potential improvements in the future. Also, during the technical analysis, the Party indicated that it requires resources to address both the lack of AD and EFs and their systematization for estimating emissions for these categories and subcategories, as well as for adapting the templates used as part of the national GHG inventory system. Argentina also indicated that sustained and sufficient financial and human resources are essential to count on a team of technical personnel who can address this need.

43. The notation key "IE" was used mostly in accordance with the 2006 IPCC Guidelines. However, the TTE noted, for example, that "IE" was used for reporting CO_2, CH_4 and N_2O for 1.A.3.b.v evaporative emissions from vehicles, even though evaporative emissions do not comprise these gases; CO_2, CH_4 and N_2O for 1.A.3.b.vi urea-based catalysts; and some HFC species for 2.F product uses as substitutes for ozone-depleting substances. Information on the use of "IE" for these categories or subcategories or where these emissions were included was not clearly reported in the Party's BUR. During the technical analysis, the Party explained that, for some F-gases for some subcategories under 2.F product uses as substitutes for ozone-depleting substances, AD were modified and the disaggregation of subcategories changed (NIR, p.535), so "IE" was used.

44. The notation key "NA" was also used mostly in accordance with the 2006 IPCC Guidelines. However, the TTE noted that "NA" was used to report HFCs, PFCs and SF_6 for a number of categories across all sectors, including, for example, for 1.A fuel combustion, for which emissions of these gases obviously do not occur. Information on the use of "NA" for these categories was not clearly reported in the Party's BUR. During the technical analysis, the Party indicated that, in accordance with the reporting guidance provided in the 2006 IPCC Guidelines (vol. 1, chap. 8, table 8.1, p.8.7), the use of "NA" applies since "the activity or category exists but relevant emissions and removals are considered never to occur … [and] such cells are normally shaded in the reporting tables". In its comments to the draft summary report, Argentina indicated that, owing to printing requirements established by the government, all reporting tables must be in colour, and therefore it is not possible to differentiate the shaded cells. The TTE noted that the 2006 IPCC Guidelines are not prescriptive, and it is necessary to consider carefully the specific methodological guidance provided for each category or subcategory and gas. In the case of category 1.A fuel combustion, for example, the 2006 IPCC Guidelines do not provide any methodological guidance for estimating HFC, PFC and SF_6 emissions as they do not occur for this category.

45. Argentina did not report in its BUR (table 33, p.155) information on N_2O, HFC and SF_6 emissions from 2.C metal industry; CH_4 and N_2O emissions from 2.D non-energy products from fuels and solvent use; and PFC and SF_6 emissions, as well as CO_2, CH_4 and N_2O emissions, which do not occur, from 2.F product uses as substitutes for ozone-depleting substances. The Party used "-" instead of numerical data or notation keys for these categories and gases and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that "-" corresponds to combined notation keys of the subcategories that are part of the categories indicated above that at their level have their specific notation key reported in BUR tables 19–26 (pp.136–143).

46. Argentina reported (in both the BUR and the NIR) comparable information addressing the tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF and the

sectoral reporting tables annexed to the Revised 1996 IPCC Guidelines. For example, CO_2 emissions and removals from changes in biomass carbon stocks were reported annually for 1990–2018 for categories 3.B.1 forest land, 3.B.2 cropland and 3.B.3 grasslands in BUR tables 47 (p.186) and 71–73 (pp.235–237). Information on non-CO_2 emissions for these land-use categories, including emissions from fires under subcategory 3.B.1.a forest land remaining forest land, was clearly reported under 3.C.1 emissions from biomass burning in BUR table 44 (p.176).

47. Information on emissions and removals for the following categories and gases under the AFOLU sector was not reported in Argentina's BUR: 3.B.4 wetlands (CO_2, CH_4 and N_2O), 3.B.5 settlements (CO_2) and 3.B.6 other land (CO_2). Together, the land-use types in these categories cover an area of about 34 per cent of Argentina's total territory. However, the Party provided clarification in its BUR (table 96, p.311), indicating that it is making efforts to improve the consistency of land representation for future reports. Further to this, the Party explained during the technical analysis that work has begun on identifying, collecting and analysing georeferenced data available from various enforcement agencies in the government that will enable it to generate a complete and consistent land representation for the reported time series.

48. The shares of emissions that different sectors contributed to the Party's total GHG emissions excluding land and HWP and other emissions (categories 3.B and 3.D), as calculated by the TTE using information from the BUR and NIR, in 2018 are reflected in table 2.

Table 2
Shares of greenhouse gas emissions by sector of Argentina for 2018

Sector	*GHG emissions (Gg CO_2 eq)*	*% share*[a]	*% change 1990–2018*
Energy	185 492.90	56.4	94.3
IPPU	20 769.44	6.3	148.5
AFOLU	143 195.54	NA	–5.8
Livestock (category 3.A)	57 850.77	17.6	–2.5
Land (category 3.B)	39 283.65	NA	–18.9
Aggregate sources and non-CO_2 emissions sources on land (category 3.C)	48 502.61	14.7	9.4
HWP and other emissions (category 3.D)	–2 441.48	NA	1 567.8
Waste	16 431.90	5.0	111.8

[a] Share of total without 2006 IPCC Guidelines AFOLU category 3.B (land) and 3.D (HWP (3.D.1) and other emissions (3.D.2)).

49. Argentina reported information on its use of GWP values consistent with those provided by the IPCC in its AR2 based on the effects over a 100-year time-horizon of GHGs. In its comments to the draft summary report, the Party indicated that, for HFC-365 and HFC-245fa, which do not have GWP values provided by the IPCC in its AR2, the GWP values provided by the IPCC in its AR4 were used.

50. For the energy sector, information was clearly reported on GHG emissions, methodological tier levels, AD and their sources, EFs, key categories, notation keys used and completeness of emission estimates. In 2018, emissions expressed in CO_2 eq from category 1.A fuel combustion activities accounted for 94.2 per cent of energy sector emissions and category 1.B fugitive emissions from fuels accounted for the remaining 5.8 per cent. Emissions expressed in CO_2 eq from subcategories 1.A.1.a public electricity and heat production, 1.A.3.b road transportation and 1.A.4.b residential together accounted for 61.7 per cent of sectoral emissions in 2018. The key categories 1.A.1 energy industries – gaseous fuels (CO_2), 1.A.3.b road transportation – liquid fuels (CO_2), 1.A.4 other sectors – gaseous fuels (CO_2) and 1.A.2 manufacturing industries and construction – gaseous fuels (CO_2) together accounted for 36.4 per cent of total national GHG emissions in 2018.

51. Argentina reported information on IEFs for CH_4 emissions from the use of biomass in the energy sector (NIR, p.133). These IEFs varied from 6.6 kg CH_4/toe in 1990 to 1.8 kg

CH_4/toe in 2018. In the NIR, the Party explained this variation as owing to an increase in biomass consumption, but it was not clear to the TTE how an increase in biomass consumption could affect CH_4 IEFs. During the technical analysis, the Party clarified that the IEFs for CH_4 emissions from biomass vary by year in accordance with the contribution of different types of biomass (e.g. bioethanol and biodiesel) to the total biomass consumed in the country. The decreasing trend of CH_4 IEFs in 1990–2018 corresponds to the decrease in the use of biomass types with greater CH_4 EFs, such as firewood. The decrease in CH_4 IEF values becomes more noticeable from 2010 because of the increase in the use of mixtures of diesel oil and gasoline with biofuels (biodiesel and bioethanol) in the country.

52. For the IPPU sector, information was clearly reported on GHG emissions, methodological tier levels, AD and their sources, EFs, key categories, notation keys used and completeness of emission estimates. In 2018, emissions for category 2.A mineral industry accounted for 35.7 per cent of sectoral emissions, while emissions for categories 2.C metal industry and 2.B chemical industry accounted for 29.3 and 11.7 per cent, respectively. The remaining 23.3 per cent comprised emissions from categories 2.D non-energy products from fuels and solvent use and 2.F product uses as substitutes for ozone-depleting substances. The key categories 2.C.1 iron and steel production (CO_2), 2.A.1 cement production (CO_2), 2.F.1 refrigeration and air conditioning (HFCs and PFCs) and 2.A.2.lime production (CO_2) together accounted for 4.1 per cent of total national GHG emissions in 2018.

53. GHG emissions for the following categories were reported as "NE" in Argentina's BUR and NIR: 2.A.3 glass production (CO_2), 2.A.5 other (mineral industry) (CO_2, CH_4 and N_2O), 2.B.10 other (chemical industry) (CO_2, CH_4 and N_2O), 2.C.4 magnesium production (CO_2), 2.C.5 lead production (CO_2), 2.C.7 other (metal industry) (CO_2, CH_4 and N_2O), 2.D.3 solvent use (CO_2, CH_4 and N_2O reported as "NA"), 2.D.4 other (non-energy products from fuels and solvent use) (CO_2, CH_4 and N_2O) and 2.G other product manufacture and use (CO_2, CH_4, N_2O and SF_6). However, the Party provided relevant clarification in its BUR (pp.138–139), indicating that either EFs or AD were not available for calculating emission estimates for these categories.

54. For 2006 IPCC Guidelines AFOLU categories 3.A and 3.C, CH_4 emissions from 3.A.1.a.ii enteric fermentation (non-dairy cattle) and N_2O emissions from 3.C.4.c direct N_2O emissions from animal manure applied to soils (non-dairy cattle) were identified as key categories and the most relevant emissions sources in the sector, accounting for 43.9 and 13.1 per cent, respectively, of the total agriculture sector emissions in 2018. In that year, CH_4 emissions from enteric fermentation of non-dairy cattle (subcategory 3.A.1.a.ii) accounted for 11.5 per cent of the total national GHG emissions, ranking the subcategory second in terms of level contribution in the key category analysis. Argentina used EFs from the 2006 IPCC Guidelines and country-specific EFs. Information on AD and EFs and their sources, including country-specific information developed at the regional level, for categories 3.A and 3.C was clearly reported in Argentina's NIR.

55. Argentina reported using tier 2 methodologies from the 2006 IPCC Guidelines for estimating CH_4 emissions from enteric fermentation of dairy and non-dairy cattle and CH_4 and N_2O emissions from manure management under category 3.A (NIR, pp.746, 758, 777 and 791). Under category 3.C, CO_2, CH_4 and most N_2O emissions were estimated using tier 1 methodologies. The Party used tier 2 methodologies only in the case of direct and indirect N_2O emissions from managed soils (urine and dung deposited on pasture by dairy and non-dairy cattle) (NIR, pp.971, 1,040, 1,051, 1,108 and 1,117).

56. For land and HWP and other emissions (categories 3.B and 3.D), Argentina reported annual GHG emissions and removals for 1990–2018. Overall, the net balance from land and HWP and other emissions (categories 3.B.1, 3.B.2, 3.B.3, 3.B.7 and 3.D.1) was reported as a net source of emissions throughout the time series, fluctuating between a minimum of 28,758.44 Gg CO_2 in 2016 and a maximum of 112,890.57 Gg CO_2 in 2007. These fluctuations were mainly driven by changes in the annual rate of land conversions from 3.B.1 forest land to 3.B.2 cropland or 3.B.3 grassland. Information on AD and EFs and their sources for categories 3.B and 3.D was in general clearly reported in Argentina's NIR.

57. Argentina reported in its NIR (pp.826–829) using a combination of tier 1 and 2 methodologies from the 2006 IPCC Guidelines, with both country-specific and default EFs,

to estimate carbon stock changes in the above-ground biomass, below-ground biomass and soil organic carbon pools and their corresponding CO_2 fluxes for the land (3.B) and HWP and other emissions (3.D) categories. The TTE commends Argentina for using the 2019 Refinement to the 2006 IPCC Guidelines to report for the first time on CO_2 emissions and removals for HWP under category 3.D, which is not required by the UNFCCC reporting guidelines on BURs or the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties.

58. Information on CO_2 emissions and removals from annual changes in soil carbon stocks was not reported in Argentina's BUR by land-use category. Instead, the Party reported (NIR, p.187) using a country-specific category 3.B.7 soil organic matter variation, under which the net sum of all estimates for CO_2 fluxes corresponding to soil carbon stock dynamics for category 3.B (land) was aggregated at this higher level. The reason for this was not clear to the TTE. Argentina provided in its NIR (pp.899–925) a detailed description of the methods, assumptions and data sources used in its reporting on CO_2 emissions under the country-specific category 3.B.7. However, the TTE noted that reporting on soil carbon stock dynamics by land-use category enhances the accuracy of the CO_2 emission estimates under category 3.B (land) and adheres to approach 1 of the 2006 IPCC Guidelines. During the technical analysis, Argentina explained that, in addition to the improvements to land representation referred to in paragraph 47 above, it is planning, in collaboration with national researchers, to identify and implement soil organic carbon models that are consistent with the 2006 IPCC Guidelines and which will improve the reporting on soil carbon stock changes by land-use category.

59. Information on CO_2 emissions arising from carbon stock changes in the deadwood and litter carbon pools were not reported in Argentina's BUR for transitions from category 3.B.1 forest land to other land uses and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that it has begun work on collecting new information (e.g. through the second national forest inventory for native forests) that will enable it to produce robust estimates for carbon stock changes, including carbon stocks in deadwood, and new estimates in the case of biomass and soil organic carbon pools. In its comments to the draft summary report, Argentina emphasized that according to the 2006 IPCC Guidelines, for the use of tier 1 methods, deadwood and litter pools are often considered together under dead organic matter.

60. Information on the underlying EFs and methods used for assuming net zero CO_2 emissions from fires under subcategory 3.B.1.a forest land remaining forest land was not clearly reported in Argentina's BUR. In the NIR (table 266, p.557), Argentina explained that it does not account in its inventory for emissions resulting from fire disturbance or removals from forest growth after the disturbance. During the technical analysis, the Party clarified that current estimates of CO_2 emissions from fires in permanent forests consider only the amount of total area burned as an aggregate forest class because there is no information available on (1) area affected by fire by forest type, (2) severity of the fire or (3) the successional stages of forests and their growth rates.

61. For the waste sector, information was clearly reported on GHG emissions, methodological tier levels, AD and their sources, EFs, key categories, notation keys used and completeness of emission estimates. In 2018, CH_4 emissions from category 4.A solid waste disposal and CH_4 and N_2O emissions from 4.D wastewater treatment and discharge accounted for 58.7 and 40.8 per cent, respectively, of sectoral emissions. The remaining sectoral emissions came from 4.B biological treatment of solid waste and 4.C waste incineration: 0.4 and 0.2 per cent, respectively. The key categories 4.A solid waste disposal (CH_4), 4.D.1 domestic wastewater treatment and discharge (CH_4) and 4.D.2 industrial wastewater treatment and discharge (CH_4) together accounted for 3.8 per cent of total national GHG emissions in 2018.

62. CH_4 and N_2O emissions for category 4.C.1 waste incineration and CO_2, CH_4 and N_2O emissions for category 4.C.2 open burning of waste were not reported in Argentina's BUR. However, the Party provided relevant clarification in its BUR (p.143), indicating that no EFs for category 4.C.1 or AD for category 4.C.2 were available for calculating emission estimates.

63. The BUR and the NIR provide an update to all GHG inventories reported in the Party's previous NCs and BURs. The information reported provides an update of the Party's NC3 and third BUR, which addresses anthropogenic emissions and removals for 1990–2018. The update was carried out for 1990–2016 using the methodologies contained in the 2006 IPCC Guidelines, thus generating a consistent 29-year time series. The Party reported that it recalculated emissions for all sectors for 1990–2016 owing to updated AD being available and inclusion of emission estimates for category 3.D.1 harvested wood products for the first time. The recalculations resulted in a decrease of estimated total national emissions for 2016 by 1.0 per cent. The Party reported in the BUR (tables 51–54, pp.196–202) the differences resulting from the recalculations at the category level for 2016. The GHG inventories for 1990–2018 reported in the BUR are consistent.

64. Argentina described in its BUR and NIR the institutional framework for the preparation of its GHG inventory. The Party reported that the Ministry of Environment and Sustainable Development, through the National Climate Change Directorate, is the governmental body responsible for the national GHG inventory. The Party identified improvements in the information reported on institutional arrangements for its GHG inventory, such as those relating to the archiving system, the data validation process, and the access to data, and improvements in the emission estimation process for the GHG inventory.

65. Argentina clearly reported that a key category analysis was performed for the level of and trend in emissions. The Party also identified and reported key categories using approach 2 for incorporating the results of the uncertainty analysis. The Party identified improvements in the information reported, such as the use of a more detailed disaggregation of categories. This detailed analysis enabled the Party to prioritize QA/QC efforts.

66. The BUR provides information on QA/QC measures for all sectors. The information reported includes a description of the structure of the GHG inventory team responsible for performing QA/QC procedures, which includes sectoral experts, sectoral leaders, a compiler and a coordinator, and the data cross-checking procedures carried out during inventory compilation. The TTE commends Argentina for providing information in accordance with the 2006 IPCC Guidelines on QA/QC activities. As a result of its QA/QC activities, the Party identified improvements for its reporting, which led to enhanced time series consistency.

67. Argentina reported information on CO_2 fuel combustion emissions using both the sectoral and the reference approach. The information reported indicates that the combustion CO_2 emissions estimated under the sectoral and reference approach are 172,665 Gg and 179,279 Gg, respectively. The difference between the CO_2 emission estimates calculated using the two approaches was reported as 3.8 per cent for 2018.

68. Argentina reported information on the reasons for the difference between the CO_2 emission estimates calculated using the two approaches. The Party indicated that the main reason for the difference is that emissions estimated using the reference approach were overestimated owing to the fact that fuel losses were not excluded from the calculations of apparent consumption. Also, it indicated that emissions estimated using the sectoral approach were slightly overestimated owing to double counting of the natural gas used as feedstock in the petrochemical industry and iron and steel production in the IPPU and the energy sectors. The reason for these issues in the calculations was not clear to the TTE. In its comments to the draft summary report, the Party indicated that fuel losses include natural gas venting and flaring and losses in distribution networks and were not excluded from calculations since it is not possible to separate data on flared natural gas from that which is vented and leaked. It also indicated that, in the case of double counting emissions in the IPPU and the energy sectors, it is not feasible to separate data on natural gas used as feedstock from total natural gas consumption. One of the planned improvements reported in the BUR (p.223) is to address this double counting.

69. Information was clearly reported on international aviation and marine bunker fuels.

70. Argentina reported information on the uncertainty assessment (level and trend) of its national GHG inventory. The uncertainty analysis was based on a combination of approaches 1 and 2 and covers all categories and all direct GHGs. The results obtained, as reported in the BUR, reveal that the level uncertainty for emissions is 6.3 per cent and the trend uncertainty is 22.0 per cent.

71. Detailed information on the selected uncertainty values for AD and EFs for a number of categories was not reported in Argentina's BUR or NIR (e.g. table 795, p.1,292) and the reason for this was not clear to the TTE. In its comments to the draft summary report, the Party explained that, where the linear error propagation method and IPCC default values were used for the uncertainty estimation, the source of these data is mentioned in the corresponding category section of the NIR. In cases where Monte Carlo simulation was used for the uncertainty estimation, the parameters applied for each variable are indicated in each corresponding section of the NIR.

72. The TTE noted that the transparency of the information reported on GHG inventories could be further enhanced by addressing the areas noted in paragraphs 34, 38, 42, 43, 44, 45, 51, 58, 59, 60, 68 and 70 above, which could facilitate a better understanding of the information reported on GHG inventories.

73. In paragraph 53 of the summary report on the technical analysis of the Party's third BUR, the previous TTE noted areas where the transparency of the reporting on GHG inventories could be further enhanced, specifically by including relevant references to the NIR in the BUR, submitting the NIR with the BUR and explaining the allocation of non-CO_2 emissions from fires on forest land. The current TTE noted the improvements referred to in paragraph 46 above and commends the Party for enhancing the transparency of its reporting.

74. Argentina reported in its BUR (p.220) information on its current initiatives for enhancing its GHG inventory reporting for compliance with requirements under the ETF. The initiatives relate to the organization of workshops with national and international experts with the aim to reviewing inventory calculation methods and, in addition, evaluating the Common Reporting Format reporter of the UNFCCC and a proposal for a common reporting format prepared by 'RedINGEI', the Latin American Network on National Greenhouse Gas Inventories, as part of a preliminary analysis for preparing the country for the new online reporting format of inventories under the ETF. The TTE commends the Party for the clear and comprehensive reporting on its proactive approach to preparing for ETF implementation.

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

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

76. The information reported provides a clear and comprehensive overview of the Party's mitigation actions and their effects. In its BUR, Argentina reported information on its national context and framed its national mitigation planning and actions in the context of its updated second NDC, submitted in November 2021. This NDC presents an absolute and unconditional target covering the entire national territory and all sectors of the economy. In this updated second NDC, Argentina has committed to not exceeding 349 Mt CO_2 eq net emissions in 2030, which represents a 27.7 per cent increase in ambition compared with the target in the first NDC, submitted in 2016.

77. Argentina reported in its BUR (p.248) that climate change has been mainstreamed in and integrated into its development plans, mainly owing to the approval of law 27520 (Minimum Standards for Adaptation and Mitigation to Global Climate Change), which institutionalized the National Climate Change Cabinet. The aim of the National Climate Change Cabinet is to design coherent and consensual public policies that encompass the country's strategic vision to reduce GHG emissions and generate coordinated adaptation responses to the impacts of climate change. The mitigation actions reported in the BUR in tabular format are for the energy (covering the strategic lines of energy transition and sustainable transport) and AFOLU sectors. Most of the mitigation actions are in the energy sector (with energy transition and sustainable transport being of strategic importance to the country). Further, the implemented mitigation actions for which estimates were reported resulted in estimated emission reductions and increase of removals of 85,015.30 Gg CO_2 eq for 2018, with the AFOLU sector being the main source of emission reductions and removal increase (74,308.00 Gg CO_2 eq). For 2020, the estimated emission reductions include only

the mitigation actions for the energy sector, which contributed 10,849.00 Gg CO_2 eq in emission reductions.

78. The Party reported a summary of its sectoral mitigation actions in tabular format in accordance with decision 2/CP.17, annex III, paragraph 11. Detailed information was provided for 12 mitigation actions in BUR tables 84–95 (pp.251–288). The Party also reported information on some of its mitigation actions in narrative format; these actions address ongoing measures that have a certain degree of progress and cover solar water heating and energy efficiency (e.g. energy efficiency labelling for vehicles, and energy-efficient transport, water heating and household appliances); however, not enough information was available to report on the progress of the actions in tabular format. The actions reported in tabular format have a higher degree of implementation than those reported in narrative format, and have periodic data, consistent with the GHG inventory, to allow their individual reporting. For the actions presented in narrative format, the Party indicated that there is a lack of officially validated data that would allow continuous monitoring of and reporting on them in line with the requirements for reporting in tabular format.

79. Consistently with decision 2/CP.17, annex III, paragraph 12(a), Argentina clearly reported the names of the 12 mitigation actions reported in tabular format, their coverage (sector, category and main gases), and progress indicators in the BUR (tables 84–95, pp.251–288). A description of mitigation actions, as well as information on quantitative goals, was provided in the BUR. Most of the mitigation actions included quantitative goals.

80. Information on the quantitative goals for two AFOLU sector measures (preventing deforestation of native forests; and promoting sustainable management, conservation, restoration and recovery of native forests, and preventing forest fires) was reported as "under evaluation" in Argentina's BUR (tables 94–95, pp.282–287). The reason for this was not clear to the TTE. During the technical analysis, the Party clarified that the internal targets for these actions are being evaluated to ensure their consistency with the NDC submitted in 2020 and for which it updated its mitigation target in November 2021. For this reason, the Party considered the quantitative goals for these measures as "under evaluation", and thus could not yet be reported in the BUR.

81. Information on methodologies and assumptions was not reported in Argentina's BUR for four mitigation actions related to distributed power generation; off-grid power generation; construction and expansion of rapid transit bus systems; and sustainable management, conservation, restoration and recovery of native forests, and prevention of forest fires (BUR tables 85, 89, 92 and 95, pp.256, 269, 277 and 286, respectively), and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that these mitigation actions have already been implemented and they are included in the report, even if no proper data are available for developing a methodology or making assumptions for further estimating emission reductions. Argentina indicated that these methodologies and assumptions will be included in its BURs when it has sufficient information.

82. Argentina clearly reported information on the objectives of the actions and steps taken or envisaged to achieve those actions for all mitigation actions in the energy and AFOLU sectors. For most mitigation actions, the Party reported annual achieved results for 2015–2020 in terms of progress of implementation or emission reductions (energy sector), while for the other actions, the reported annual achieved results were presented for 2015–2018 (these results for the LULUCF sector are the same as those as reported in the Party's third BUR).

83. Information on emission reductions for the four mitigation actions referred to in paragraph 81 above was not reported in Argentina's BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that emission reductions were not estimated and reported owing to the lack of officially validated data. Argentina indicated that these mitigation actions have already been implemented and that the information on emission reductions will be reported in its BURs when it has sufficient data.

84. The nine mitigation actions for the energy sector focus mainly on renewable energy sources, nuclear power, energy efficiency and efficient urban public transport, and were reported as ongoing. The Party reported information on the progress of implementation for

all its mitigation actions in the energy sector and underlying steps taken or envisaged to achieve them.

85. The Party reported the results of implementing its mitigation actions for the energy sector as emission reductions in most cases. The estimated emission reductions achieved by the measure on electricity generation from non-conventional renewable sources connected to the grid were reported for 2015–2020, achieving 4,957 Gg CO_2 eq in 2020. Implementation of the measure on distribution of electricity from renewable sources was reported as in progress with a cumulative installed capacity of all distributed renewable electricity generators of 3.1 MW in 2020, but no quantitative emission reduction was reported. The estimated emission reductions achieved by the mitigation action concerned with introducing biofuels into the energy sector were reported for 2015–2020, achieving 2,438 Gg CO_2 eq in 2020. For the measure on hydroelectricity generation, the estimated emission reductions were reported for 2015–2020, achieving 315 Gg CO_2 eq in 2020.

86. For the nuclear power generation measure, the estimated emission reductions were reported for 2015–2020, achieving 3,139 Gg CO_2 eq in 2020. For the efficient public lighting measure in the autonomous city of Buenos Aires, the estimated emission reductions were 50.10 Gg CO_2 eq for 2019 and 25.9 Gg CO_2 eq for 2018, within the framework of the efficient lighting plan. For the efficient residential lighting mitigation action, the estimated emission reduction was reported for two separate programmes: replacing lighting in vulnerable neighbourhoods in the autonomous city of Buenos Aires (2.40 Gg CO_2 eq for 2018) and moving to LED lighting (50.70 Gg CO_2 eq for 2019). Finally, implementation of the measure on construction and expansion of rapid transit bus systems was reported in terms of the cumulative number of bus corridors in use and a cumulative distance of the network in use (in kilometres) by the rapid transit buses, but no quantitative emission reduction was reported.

87. The three mitigation actions for the AFOLU sector focus on (1) increasing the area of forest plantations of conifers, eucalyptus trees, Salicaceae and other species; (2) preventing deforestation of native forests; and (3) promoting the sustainable management, conservation, restoration and recovery of native forests, and preventing forest fires. These mitigation actions were reported as ongoing. The Party reported information on the progress of implementation of all these mitigation actions and underlying steps taken or envisaged to achieve them. The Party also reported the results of implementing these mitigation actions and provided results in terms of emission reductions for mitigation actions (1) and (2). For mitigation action (3), the progress indicators relate to the number of hectares under forestry management plans (this area increased from 712,268 ha in 2010 to 3,540,710 ha in 2018) and the number of implemented policies. The mitigation action on preventing deforestation of native forests achieved the highest overall emission reduction for 2014–2018: 274,630 Gg CO_2 eq (53,855 Gg CO_2 eq in 2018). The mitigation action on increasing the area of forest plantations achieved an overall emission removal for 2015–2018 of 87,418 Gg CO_2 eq (20,453 Gg CO_2 eq in 2018).

88. Argentina provided information on its involvement in international market mechanisms as a Party to the Kyoto Protocol, indicating that it participated in UNFCCC regulated markets (CDM) and voluntary markets. The standards used for Argentina's projects include those from the UNFCCC CDM process, VCS and GSF. Argentina documented that it had registered 58 projects; of these, 46 projects approved by its designated national authority are registered under the UNFCCC CDM process, 11 projects are registered under VCS and 1 project is registered under GSF. Four projects have been registered under both the CDM and VCS, but their registrations apply to different periods, as VCS registered reductions predate the start of the CDM crediting period.

89. The statistics provided by the Party include information on the total projects, sectors covered and quantity of verified CERs issued for Argentina. CDM projects are mainly focused on the energy sector, followed by the waste sector. In the energy sector, the focus is on renewable energy sources (such as wind, solar, hydroelectric and biomass), while in the waste sector, landfill projects involving the capture, flaring and/or use of biogas stand out. Of the 46 projects registered under the CDM, 18 have had CERs issued, reaching a total of about 16.2 million CERs. Under VCS, 1.3 million verified carbon units have been issued for five projects. GSF has not yet issued verified emission reductions.

90. Argentina reported information on its domestic MRV arrangements in accordance with decision 2/CP.17, annex III, paragraph 13. The information reported indicates that Argentina has in place a domestic MRV system for mitigation actions. Argentina reported that its national MRV system, launched in 2017, identified more than 300 indicators for tracking the progress of about 40 mitigation measures. At the time of preparing its fourth BUR, it was possible to quantify around 80 indicators corresponding to energy, transport, industry and forestry measures, and the results for 2015–2018 were published for 32 of these indicators.

91. In addition, Argentina reported on its National Native Forest Monitoring System, which provides up-to-date information on the country's native forest resources that is used in monitoring the implementation of law 26331 (Minimum Standards for the Environmental Protection of Native Forests), the objective of which is the enrichment, restoration, conservation, use and sustainable management of native forests, and the environmental services they provide to society. As part of its implementation, the National Native Forest Monitoring System uses a combination of field data and data from remote sensing and from other sources to generate base data for estimating emissions and removals for native forests within the national GHG inventory system. The System produces reports with consistent information since 1998, the periodicity of which varies by region, with reports available for 1998–2002, 2002–2006, 2006–2007, 2007–2011 and 2011–2013, as well as annual reports for 2014 onward. In figure 29 of the BUR (p.299), Argentina reported all documents generated by the National Native Forest Monitoring System that are inputs to the national GHG inventory for the AFOLU sector and to the Global Forest Resources Assessments of the Food and Agriculture Organization of the United Nations.

92. Argentina reported consistently with the voluntary general guidelines for domestic MRV of domestically supported nationally appropriate mitigation actions, contained in the annex to decision 21/CP.19. The Party outlined its National System for Monitoring Mitigation Measures, which is based on a set of appropriate indicators for monitoring progress of each mitigation measure. The System follows up on the implementation of mitigation actions planned as part of the work of the National Climate Change Cabinet and it was integrated into this work as part of the National Climate Change Information System since law 27520 (Minimum Standards for Adaptation and Mitigation to Global Climate Change) was passed in 2019. The National Climate Change Information System is the key tool for transparency and promotion of information on climate change.

93. The TTE noted that the transparency of the information reported on mitigation actions could be enhanced by addressing the areas noted in paragraphs 80, 81 and 83 above, which could facilitate a better understanding of the information reported on mitigation actions.

94. In paragraph 67 of the summary report on the technical analysis of Argentina's third BUR, the previous TTE noted areas where the transparency of the reporting on mitigation actions could be enhanced, specifically reporting on annual results in terms of progress or emission reductions, quantitative goals, information in tabular format, methodologies and results achieved. The current TTE noted the improvements referred to in paragraphs 84, 85 and 87 above and commends the Party for enhancing the transparency of its reporting.

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

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

96. Argentina reported information on constraints and related financial, technical and capacity-building needs in accordance with decision 2/CP.17, annex III, paragraph 14. In its BUR, Argentina identified, for the cross-cutting aspects, a lack of trained technical personnel and financial support related to preparing national reports for international organizations, maintaining the relevant information systems, establishing and maintaining technical teams that are stable over time for preparing reports under the UNFCCC, developing models and appropriate assumptions to periodically perform GHG emission projections under different scenarios, improving the limited knowledge of the private sector on methods for emission

estimation and methodologies for quantification emission reduction of mitigation measures, enhancing the compilation and documentation systems for complex reporting and developing standardized procedures for QA/QC as constraints.

97. Argentina reported in its BUR (table 96, pp.305–313) extensive information on 29 financial, technical and capacity-building needs divided into cross-cutting needs (11) and GHG inventory sector needs: energy (6), IPPU (2), AFOLU (7) and waste (3). The Party reported that its financial, technical and capacity-building needs in relation to mitigation and GHG inventories cover a wide range of areas, such as institutional arrangements with public and private sector actors; access to information on transport, the iron and steel industry, ammonia production and specific fertilizer consumption statistics; development of a land-use information system and models for native forest monitoring; QA/QC; projection of emissions under different scenarios; and quantification of the cost of implementing mitigation measures.

98. Additionally, Argentina reported in its BUR (table 97, pp.315–325) extensive information on 27 financial, technical and capacity-building needs related to adaptation, divided into research and development (6), transport and infrastructure (3), institutional strengthening (2), biodiversity (2), health (2), energy (2), monitoring and evaluation (1), agriculture (1), infrastructure (1), disaster risk management (1), awareness-raising and education (1), gender (1), communities (1), production (1), loss and damage (1) and tourism (1).

99. Information on gaps and related technical needs was not reported in Argentina's BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that all information on constraints and gaps reported in the fourth BUR was classified as a "barrier" without distinguishing between constraint or gap. The Party also clarified that disaggregation of this information may exceed the available technical and financial resources.

100. Information on the process or methodology used for identifying constraints and needs was not clearly reported in Argentina's BUR. During the technical analysis, the Party clarified that the information reported on this matter complies with the requirements established in decision 2/CP 17, annex III, paragraph 14, and that the identification of constraints and needs was carried out within the framework of attributions of the National Climate Change Directorate under the Ministry of Environment and Sustainable Development. Furthermore, in its comments to the draft summary report, Argentina clarified that the recognition of the participation of the main actors in the process of identifying needs, including the private sector, is made within the framework of the work of the National Climate Change Cabinet in line with law 27520 (Minimum Standards for Adaptation and Mitigation to Global Climate Change).

101. Argentina reported information on financial resources, technology transfer, capacity-building and technical support received in accordance with decision 2/CP.17, annex III, paragraph 15. In its BUR, Argentina reported that it received USD 474.9 million in climate finance during 2019–2020 from multilateral sources. Of this amount, 69.2 per cent was allocated to mitigation, 21.8 per cent to adaptation and 9.0 per cent to cross-cutting projects.

102. Argentina reported in its BUR (tables 98–101, pp.331–334) that it received USD 38.2 million from the GEF, 97.4 per cent as a grant and 2.6 per cent as in-kind support, for implementing projects relating to establishing rural corridors and conserving biodiversity, promoting energy efficiency and renewable energy in social housing, incorporating the sustainable use of biodiversity in the Yungas and Chaco Atlantic forest ecoregions, establishing incentives for the conservation of ecosystem services of global significance, strengthening the transparency of the GHG inventory system and monitoring mitigation measures and support received, minimizing risks to human health and the environment, implementing the Minamata Convention on Mercury, implementing the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, developing sustainable business models for the production of biogas from municipal solid waste sites and preparing the third BUR. Given that specific financial support enabling the preparation of the fourth BUR was not available in time, Argentina explained that it prepared the BUR using national co-funding

provided in the project for the fourth BUR and the support of several cooperation projects, specifically from the Initiative for Climate Action Transparency, the Capacity-building Initiative for Transparency and NDC Support projects, through synergetic activities that allowed its fourth BUR to be developed in a timely manner.

103. Information on the allocation of the support received (i.e. classification as financial resources, technology transfer, capacity-building or technical support) and on technical support received from Parties included in Annex II to the Convention and other developed countries was not clearly reported in Argentina's BUR. During the technical analysis, the Party clarified that the information reported is based on official records and available data. Argentina indicated that it lacks locally adopted criteria for classifying support received, and that it has limited technical and financial resources for properly systematizing and disaggregating the information available. For these reasons, the issue has been identified in the BUR (p.326) as an area for further technical improvement.

104. Information on nationally determined technology needs with regard to the development and transfer of technology in accordance with decision 2/CP.17, annex III, paragraph 16, and technology support received, was not reported in Argentina's BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that there are no locally adopted criteria for classifying technology support received, insufficient technical and financial resources for properly systematizing the available information and allowing it to be quantified and reported in a disaggregated format, and no procedures for developing the nationally validated criteria needed to carry out an assessment to identify technology needs.

105. The TTE noted that the transparency of the information reported on needs and support received could be enhanced by addressing the areas noted in paragraphs 99, 100, 103 and 104 above, which could facilitate a better understanding of the information reported on needs and support received.

106. In paragraph 77 of the summary report on the technical analysis of the Party's third BUR, the previous TTE noted areas where the transparency of the reporting on constraints, gaps, needs and support needed and received could be enhanced. The current TTE did not identify improvements in these areas.

107. Argentina reported in its BUR on its support for and participation as a member in the Latin American Network on National Greenhouse Gas Inventories, the objective of which is to facilitate the development of technical and institutional capacity in the area of GHG inventories through exchange of experience among its members. According to the BUR (p.115), this Network comprises 14 countries in the region and has the support of international donors. The TTE commends Argentina for reporting on its participation in the activities of the Network.

5. Any other information

108. Argentina reported in its BUR some information on 27 adaptation projects on water and sanitation, agriculture and forestry, transport, infrastructure, climate transparency and cross-cutting aspects.

D. Identification of capacity-building needs

109. In consultation with Argentina, the TTE identified the following needs for capacity-building that could facilitate the preparation of subsequent BURs and participation in ICA:

(a) Strengthening the national capacities in the area of human and financial resources to developing a nationally determined methodology and criteria for identifying technology needs, to be validated by the National Climate Change Cabinet;

(b) Developing a systematization of the existing implemented national process for identifying and classifying the support received by sector, by nationally determined category (mitigation, adaptation and cross-cutting) and by support category (financial resources, technology transfer and capacity-building); enhancing the national capacities in the area of

human and financial resources, thus enabling reporting on support received classified by sector, nationally determined category and support category in a continuous and adequate manner; and developing a method to validate this process through the National Climate Change Cabinet in order to ensure the long-term operation and maintenance of the monitoring system for climate finance;

(c) Strengthening the national capacities in the area of human and financial resources to identify common assumptions in and criteria for collecting, systematizing, disaggregating and reporting on constraints, gaps and needs, and establishing a national methodology and institutional arrangements for quantifying financial resources needed;

(d) Strengthening the national capacity for assessing and implementing methods and tools for conducting spatially explicit monitoring and analysis of fire events (e.g. area burned, fire severity and post-disturbance dynamics by forest type) to enhance the ability to report on net GHG emissions under the category forest land remaining forest land.

110. The TTE noted that, in addition to those identified during the technical analysis, Argentina reported several capacity-building needs covering the following areas (BUR, chap. 4, tables 96–97, pp.305–325):

(a) In relation to mitigation and the GHG inventory:

(i) Cross-cutting aspects;

(ii) Energy sector;

(iii) IPPU sector;

(iv) AFOLU sector;

(v) Waste sector;

(b) In relation to adaptation:

(i) Research and development;

(ii) Institutional strengthening;

(iii) Monitoring and evaluation;

(iv) Agriculture;

(v) Infrastructure;

(vi) Biodiversity;

(vii) Awareness-raising and education;

(viii) Disaster risk management;

(ix) Gender;

(x) Communities;

(xi) Production;

(xii) Loss and damage;

(xiii) Tourism;

(xiv) Health;

(xv) Transport and infrastructure;

(xvi) Energy.

111. Argentina reported in its BUR (table 96, p.307) information on identified capacity-building and financial needs for compliance with requirements under the ETF. The needs relate to initiatives on improving the Party's system for compiling and documenting complex reports and improving procedures for and reporting of QA/QC, adapting them for compliance with reporting requirements under the ETF. The TTE commends the Party for the clear and comprehensive reporting on its proactive approach to preparing for ETF implementation.

112. In paragraph 80 of the summary report on the technical analysis of Argentina's third BUR, the previous TTE, in consultation with Argentina, identified 37 capacity-building needs. During the technical analysis, Argentina indicated that the following of those previously identified capacity-building needs were modified in its fourth BUR because they had been addressed and improvements had been made in the areas they covered:

(a) Developing EFs using country-specific data (tier 2) for sources identified as key categories: as stated in the fourth BUR, 46 per cent of categories in the GHG inventory for 2018 were estimated using tier 2 or 3 methodologies, compared with 34 per cent of categories in the GHG inventory for 2016 reported in the third BUR;

(b) Evaluating potential improvements and adjustments for category 2.F product uses as substitutes for ozone-depleting substances and improving access to the information necessary for estimating emissions for this category: improvements were made for this category, so the need was reformulated as further improvement;

(c) Calculating emissions and removals from HWP: emissions and removals for category 3.D.1 HWP were estimated and reported in the fourth BUR for the first time, so the need was reformulated as further improvement.

III. Conclusions

113. The TTE conducted a technical analysis of the information reported in the fourth BUR of Argentina in accordance with the UNFCCC reporting guidelines on BURs and concludes that the information reported is mostly consistent. It provides an overview of national circumstances and institutional arrangements relevant to the preparation of NCs on a continuous basis; the national inventory of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol, including an NIR; mitigation actions and their effects, including associated methodologies and assumptions for most of the actions; constraints and related financial and capacity-building needs, including a description of support needed and received; the source of funding for the preparation and submission of BURs; and domestic MRV. During the technical analysis, additional information was provided by Argentina for all areas reported on by the Party. The TTE concluded that the information analysed is mostly transparent.

114. Argentina reported an update on the institutional arrangements relevant to the preparation of its BURs. In 2020, Argentina approved regulatory decree 1030 of law 27520 on minimum standards for adaptation and mitigation to global climate change (passed in 2019), which (1) institutionalized the National Climate Change Cabinet created in 2016 as the governmental body responsible for designing and providing the legal framework for national climate change adaptation and mitigation policies and (2) created the National Climate Change Information System as a key tool for ensuring the transparency and promoting the collection of information required for preparing future NCs, BURs and other reports on a continuous basis.

115. In its fourth BUR, submitted in December 2021, and its NIR, submitted in March 2022, Argentina reported information on its national GHG inventory for 1990–2018. This included GHG emissions and removals of CO_2, CH_4, N_2O, HFCs and PFCs for all relevant sources and sinks as well as the precursor gases. The inventory was developed on the basis of the 2006 IPCC Guidelines and, for some categories, the 2019 Refinement to the 2006 IPCC Guidelines. The total GHG emissions for 2018 were reported as 329,047.60 Gg CO_2 eq (excluding land and HWP and other emissions) and 365,889.77 Gg CO_2 eq (including land and HWP and other emissions). Thirty categories and main gases (CO_2, CH_4 and N_2O) were identified for the level of and trend in emissions using approaches 1 and 2 from the 2006 IPCC Guidelines. Estimates of SF_6 emissions and of some GHG emissions for some categories or subcategories were not provided owing to the Party's lack of sustained financial and human resources required for addressing the lack of AD and EFs and their systematization for estimating these emissions, as well as for adapting the templates used as part of the national GHG inventory system, as clarified by the Party during the technical analysis.

116. Argentina reported information on mitigation actions and their effects in both tabular and narrative format, including a description of the measures and the sectors, and gases, involved. The results, methodologies and assumptions were reported for mitigation actions for which there is sufficient national officially validated information. Argentina reported ongoing mitigation actions in the energy and AFOLU sectors. The mitigation actions for the energy sector focus on renewable energy sources, nuclear power, energy efficiency and efficient urban public transport, while the mitigation actions in the AFOLU sector focus on increasing the area of forest plantations; preventing deforestation of native forests; and promoting the sustainable management, conservation, restoration and recovery of native forests, and preventing forest fires.

117. The Party reported the progress of implementation of its mitigation actions and the results achieved, including emission reductions, for most of the actions in the energy and AFOLU sectors, and estimated outcomes for the others (namely, distribution of electricity from renewable sources, rapid transit bus systems, and sustainable management of native forests and prevention of forest fires). The highest overall emission reduction was reported for the mitigation action on preventing deforestation of native forests in the AFOLU sector of 274,630 Gg CO_2 eq for 2014–2020. The Party also reported information on its involvement in international market mechanisms and on MRV arrangements. Information on methodologies and assumptions, emission reductions and quantitative goals was not provided for some mitigation actions owing to, as clarified by the Party during the technical analysis, officially validated data not being available; data required for developing a methodology or making assumptions for further estimating emission reductions not yet being available; or internal targets for some mitigation actions being under evaluation to ensure their consistency with the NDC, for which the mitigation target was updated in November 2021.

118. Argentina reported information on key constraints and related 56 needs, including 29 mitigation and GHG inventory needs divided into cross-cutting needs and inventory sector needs, and 27 adaptation needs. The constraints and needs for adaptation were identified for a number of aspects, including research and development, transport and infrastructure, biodiversity, health, agriculture, communities, loss and damage and tourism. Information was reported on support received, which was categorized as mitigation, adaptation or cross-cutting support, but was not classified as financial resources, technology transfer, capacity-building or technical support. Also, information on technical support received from Parties included in Annex II to the Convention and other developed countries was not reported by Argentina. The Party also reported that it received financial support of USD 474.9 million from multilateral donors, of which 69.2 per cent was allocated to mitigation, 21.8 per cent to adaptation and 9.0 per cent to cross-cutting projects. Argentina reported that it received USD 38.2 million from the GEF for implementing 11 projects (8 mitigation, 1 adaptation and 2 cross-cutting). Given that specific financial support enabling the preparation of the fourth BUR was not available in time, Argentina explained that it prepared the BUR using national co-funding provided in the project for the fourth BUR and the support of several cooperation projects, specifically from the Initiative for Climate Action Transparency, the Capacity-building Initiative for Transparency and NDC Support projects, through synergetic activities that allowed the fourth BUR to be developed in a timely manner.

119. The Party did not report information on nationally determined technology needs and technology support received, owing to its lack of locally adopted criteria for classifying support received, as well as discontinuous and insufficient technical and financial resources and procedures for developing the nationally validated criteria needed for identifying technology needs, as clarified by the Party during the technical analysis.

120. The current TTE noted improvements in the reporting in the Party's fourth BUR compared with that in its previous BUR. The information reported demonstrates that the Party has taken into consideration the areas for enhancing the transparency of the information reported noted by the TTE in the summary report on the technical analysis of the third BUR. However, improvements are ongoing and the Party has taken note of outstanding areas for future improvements.

121. The TTE, in consultation with Argentina, identified the four capacity-building needs listed in chapter II.D above and needs for capacity-building that aim to facilitate reporting in accordance with the UNFCCC reporting guidelines on BURs and participation in ICA in

accordance with the ICA modalities and guidelines, taking into account Article 4, paragraph 3, of the Convention. The Party also identified the needs for capacity-building for reporting in future BURs and to facilitate transition to the ETF indicated in paragraphs 110 and 111 above, respectively. Argentina prioritized the capacity-building needs referred to in paragraph 109 above (with the first three needs considered high priority and the last need considered medium priority).

Annex I

Extent of the information reported by Argentina in its fourth biennial update report

Table I.1
Identification of the extent to which the elements of information on greenhouse gases are included in the fourth biennial update report of Argentina

Decision	*Provision of the reporting guidelines*	*Assessment of whether the information was reported*	*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, and subsequent BURs shall cover a calendar year that does not precede the submission date by more than four years.	Yes	Argentina submitted its fourth BUR on 31 December 2021; the GHG inventory reported is for 1990–2018.
Decision 2/CP.17, annex III, paragraph 4	Non-Annex I Parties should use the methodologies established in the latest UNFCCC guidelines for the preparation of NCs from non-Annex I Parties approved by the Conference of the Parties or those determined by any future decision of the Conference of the Parties on this matter.	Yes	Argentina used the methodologies provided in the 2006 IPCC Guidelines (and the 2019 Refinement to the 2006 IPCC Guidelines for some categories).
Decision 2/CP.17, annex III, paragraph 5	The updates of the section on national inventories of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol should contain updated data on activity levels based on the best information available using the Revised 1996 IPCC Guidelines, the IPCC good practice guidance and the IPCC good practice guidance for LULUCF; any change to the EF may be made in the subsequent full NC.	Yes	Argentina submitted an NIR, containing updated AD and EFs for all sectors, as a stand-alone technical document with its fourth BUR.
Decision 2/CP.17, annex III, paragraph 6	Non-Annex I Parties are encouraged to include, as appropriate and to the extent that capacities permit, in the inventory section of the BUR:		
	(a) The tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF;	Yes	Argentina used the 2006 IPCC Guidelines; however, comparable information was reported in both the BUR and the NIR.
	(b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines.	Yes	Argentina used the 2006 IPCC Guidelines; however, comparable information was reported in both the BUR and the NIR.
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 its previous NCs.	Yes	Argentina provided an update to the previously reported national GHG inventory and reported a consistent time series for 1990–2018, including recalculations by category.
Decision 2/CP.17, annex III, paragraph 8	Non-Annex I Parties that have previously reported on their national GHG inventories contained in their NCs are encouraged to submit summary information tables of inventories for previous submission years (e.g. for 1994 and 2000).	Yes	Argentina provided an update to the previously reported national GHG inventory in summary information tables by gas and by sector for 1990–2018.

Decision	*Provision of the reporting guidelines*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex III, paragraph 9	The inventory section of the BUR should consist of an NIR as a summary or as an update of the information contained in decision 17/CP.8, annex, chapter III (National greenhouse gas inventories), including:	Yes	Argentina submitted an NIR on 9 March 2022. The inventory section of the BUR (chap. 2) contains summary information from the NIR.
	(a) Table 1 (National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and greenhouse gas precursors);	Yes	Argentina reported comparable information on GHG emissions and removals and precursor gases for 2018 in BUR tables 33–34 (pp.155–156) and NIR table 14 (p.83).
	(b) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF_6).	Yes	Argentina reported emissions of HFCs and PFCs in BUR table 33 (p.155) and NIR table 14 (p.83).
Decision 2/CP.17, annex III, paragraph 10	Additional or supporting information, including sector-specific information, may be supplied in a technical annex.	Yes	Argentina submitted an NIR as a stand-alone technical document and a REDD+ technical annex to its fourth BUR.
Decision 17/CP.8, annex, paragraph 12	Non-Annex I Parties are also encouraged, to the extent possible, to undertake any key source analysis as indicated in the IPCC good practice guidance to assist in developing inventories that better reflect their national circumstances.	Yes	
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	
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:		
	(a) CO_2;	Yes	
	(b) CH_4;	Yes	
	(c) N_2O.	Yes	
Decision 17/CP.8, annex, paragraph 15	Non-Annex I Parties are encouraged, as appropriate, to provide information on anthropogenic emissions by sources of:		
	(a) HFCs;	Yes	
	(b) PFCs;	Yes	
	(c) SF_6.	Yes	Information on SF_6 emissions was reported as "-" or "NE".
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:		
	(a) Carbon monoxide;	Yes	
	(b) Nitrogen oxides;	Yes	
	(c) Non-methane volatile organic compounds.	Yes	

Decision	*Provision of the reporting guidelines*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
Decision 17/CP.8, annex, paragraph 17	Other gases not controlled by the Montreal Protocol, such as sulfur oxides, and included in the Revised 1996 IPCC Guidelines may be included at the discretion of Parties.	Yes	Argentina reported on sulfur dioxide in BUR table 33 (p.155).
Decision 17/CP.8, annex, paragraph 18	Non-Annex I Parties are encouraged, to the extent possible, and if disaggregated data are available, to estimate and report CO_2 fuel combustion emissions using both the sectoral and the reference approach and to explain any large differences between the two approaches.	Yes	
Decision 17/CP.8, annex, paragraph 19	Non-Annex I Parties should, to the extent possible, and if disaggregated data are available, report emissions from international aviation and marine bunker fuels separately in their inventories:		
	(a) International aviation;	Yes	
	(b) Marine bunker fuels.	Yes	
Decision 17/CP.8, annex, paragraph 20	Non-Annex I Parties wishing to report on aggregated GHG emissions and removals expressed in CO_2 eq should use the GWP provided by the IPCC in its AR2 based on the effects of GHGs over a 100-year time-horizon.	Yes	
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 EFs and AD. 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, EFs and AD 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:		
	(a) Information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol;	Yes	Argentina used the 2006 IPCC Guidelines. Tier 1 methodologies were used for most categories across all sectors, tier 2 and 3 were used for some individual categories in the IPPU sector and tier 2 for some categories in the AFOLU sector. The BUR contains a summary of the methodologies used for estimating emissions and removals. The NIR specifies which methods were used for each category reported in the GHG inventory.
	(b) Explanation of the sources of EFs;	Yes	Argentina used the 2006 IPCC Guidelines. The BUR contains a summary of the sources of information used for the EFs. The NIR specifies which EF

Decision	*Provision of the reporting guidelines*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
			values were used for each category reported in the GHG inventory.
	(c) Explanation of the sources of AD;	Yes	The BUR contains a summary of the sources of information used for the AD. The NIR specifies which AD values were used for each category reported in the GHG inventory.
	(d) If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe:	Yes	Argentina reported using a country-specific category 3.B.7 soil organic matter variation, which aggregates at a higher level the net sum of all estimates for CO_2 fluxes corresponding to soil carbon stock dynamics for the category 3.B land.
	(i) Source and/or sink categories;		
	(ii) Methodologies;		
	(iii) EFs;		
	(iv) AD;		
	(e) Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building.	Yes	
Decision 17/CP.8, annex, paragraph 22	Each non-Annex I Party is encouraged to use tables 1–2 of the guidelines annexed to decision 17/CP.8 in reporting its national GHG inventory, taking into account the provisions established in paragraphs 14–17. In preparing those tables, Parties should strive to present information that is as complete as possible. Where numerical data are not provided, Parties should use the notation keys as indicated.	Partly	Argentina reported comparable information on its national GHG inventory in BUR table 34 (p.156), by gas for CO_2, CH_4 and N_2O and in CO_2 eq for HFCs and PFCs, and reported such information in tables by gas and in units of mass in the annex to chapter 2 of the BUR. The Party used "NO", "NE", "NA" and "IE" in these tables, as well as "-".
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:		
	(a) Level of uncertainty associated with inventory data;	Yes	
	(b) Underlying assumptions;	Yes	
	(c) Methodologies used, if any, for estimating these uncertainties.	Yes	

Note: 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, paras. 3–10 and 41(g). Further, as per para. 3 of those guidelines, non-Annex I Parties are to submit updates of their national GHG inventories in accordance with paras. 8–24 of the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties, contained in the annex to decision 17/CP.8. The scope of such updates should be consistent with the non-Annex I Party's capacity and time constraints and the availability of its data, as well as the level of support provided by developed country Parties for biennial update reporting.

Table I.2
Identification of the extent to which the elements of information on mitigation actions are included in the fourth biennial update report of Argentina

Decision	*Provision of the reporting guidelines*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex III, paragraph 11	Non-Annex I Parties should provide information, in tabular format, on actions to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol.	Yes	The Party also reported information on mitigation actions in narrative format, which addressed planned mitigation measures with a lower degree of implementation.
Decision 2/CP.17, annex III, paragraph 12	For each mitigation action or group of mitigation actions, including, as appropriate, those listed in document FCCC/AWGLCA/2011/INF.1, developing country Parties shall provide the following information, to the extent possible:		
	(a) Name and description of the mitigation action, including information on the nature of the action, coverage (i.e. sectors and gases), quantitative goals and progress indicators;	Partly	Information on quantitative goals and progress indicators for some of the mitigation actions was not reported. For some mitigation actions in the AFOLU sector, quantitative goals were reported as "under evaluation".
	(b) Information on:		
	(i) Methodologies;	Partly	Information on methodologies for some of the mitigation actions was not reported.
	(ii) Assumptions;	Partly	Information on assumptions for some of the mitigation actions was not reported.
	(c) Information on:		
	(i) Objectives of the action;	Yes	
	(ii) Steps taken or envisaged to achieve that action;	Yes	
	(d) Information on:		
	(i) Progress of implementation of the mitigation actions;	Yes	For all mitigation actions reported in tabular format, information on progress of implementation was reported. For some mitigation actions, progress was reported in quantitative terms (GHG emission reductions or removals), while for others, progress was reported in qualitative terms (indicating how the Party overcame barriers and gaps to implement the mitigation action).
	(ii) Progress of implementation of the underlying steps taken or envisaged;	Yes	
	(iii) Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible;	Partly	The Party did not report information on emission reductions for some of the mitigation actions in the energy and AFOLU sectors. However, for some of those

Decision	*Provision of the reporting guidelines*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
			actions, a qualitative description of the results was provided.
	(e) Information on international market mechanisms.	Yes	
Decision 2/CP.17, annex III, paragraph 13	Parties should provide information on domestic MRV arrangements.	Yes	

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

Table I.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 fourth biennial update report of Argentina

Decision	*Provision of the reporting requirements*	*Assessment of whether the information was reported*	*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:		
	(a) Constraints and gaps;	Partly	Information on gaps was not reported.
	(b) Related financial, technical and capacity-building needs.	Partly	Information on technical needs was not reported.
Decision 2/CP.17, annex III, paragraph 15	Non-Annex I Parties should provide:		
	(a) Information on financial resources received, technology transfer and capacity-building received;	Yes	Information on support received was provided but it was not classified as financial resources, technology transfer, capacity-building or technical support.
	(b) Information on technical support received from the GEF, Parties included in Annex II to the Convention and other developed country Parties, the Green Climate Fund and multilateral institutions for activities relating to climate change, including for the preparation of the current BUR.	Partly	Information on technical support received from Parties included in Annex II to the Convention and other developed countries was not reported.
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:		
	(a) Nationally determined technology needs;	Partly	
	(b) Technology support received.	No	

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

Annex II

Reference documents

A. Reports of the Intergovernmental Panel on Climate Change

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B. UNFCCC documents

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Summary reports on the technical analysis of the first, second and third BURs of Argentina, contained in documents FCCC/SBI/ICA2016/TASR.1/ARG, FCCC/SBI/ICA/2017/TASR.2/ARG and FCCC/SBI/ICA/2020/TASR.3/ARG, respectively. Available at https://unfccc.int/ICA-reports.