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Technical analysis of the third biennial update report of Viet Nam submitted on 16 April 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 third biennial update report of Viet Nam, 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	<i>2006 IPCC Guidelines for National Greenhouse Gas Inventories</i>
2019 Refinement to the 2006 IPCC Guidelines	<i>2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories</i>
AD	activity data
AFOLU	agriculture, forestry and other land use
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BUR	biennial update report
CER	certified emission reduction
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
EEA	European Environment Agency
EF	emission factor
EMEP	Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe
ETF	enhanced transparency framework under the Paris Agreement
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
HWP	harvested wood products
ICA	international consultation and analysis
IE	included elsewhere
IPCC	Intergovernmental Panel on Climate Change
IPCC good practice guidance	<i>Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories</i>
IPCC good practice guidance for LULUCF	<i>Good Practice Guidance for Land Use, Land-Use Change and Forestry</i>
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
MRV	measurement, reporting and verification
N ₂ O	nitrous oxide
NA	not applicable
NAMA	nationally appropriate mitigation action
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	<i>Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories</i>

SF ₆	sulfur hexafluoride
TTE	team of technical experts
UNEP	United Nations Environment Programme
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”

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 Viet Nam 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. Viet Nam submitted its second BUR on 20 November 2017, which was analysed by a TTE in the tenth round of technical analysis of BURs from non-Annex I Parties, conducted from 5 to 9 March 2018. After the publication of its summary report, Viet Nam participated in the seventh workshop for the facilitative sharing of views, convened in Bonn on 19 June 2019.
6. This summary report presents the results of the technical analysis of the third BUR of Viet Nam, 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, Viet Nam submitted its third BUR on 16 April 2021 as a stand-alone update report. The submission was made within three years and four months from the submission of the second BUR.
8. During the technical analysis, the Party clarified that the delay in the submission was due to financial support being received later than expected owing to the coronavirus disease 2019 pandemic.
9. A desk analysis of Viet Nam's BUR was conducted remotely from 29 November to 3 December 2021 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: Menouer Boughedaoui (former member of the Consultative Group of Experts from Algeria), Manuel Estrada (Mexico), Lawrence Ibhafidon (Nigeria), Hassan Ibrahim (Singapore), Tsutomu Koyama (Japan), Rocio Lichte (Germany), Guadalupe Alejandra Martinez

¹ The technical annex on the results of the implementation of REDD+ activities.

² FCCC/SBI/ICA/2021/TATR.1/VNM. At the time of publication of this report, the technical report was being prepared.

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10. 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 Viet Nam engaged in consultation³ on the identification of capacity-building needs for the preparation of BURs and participation in the ICA process. Following the technical analysis of Viet Nam's third BUR, the TTE prepared and shared a draft summary report with Viet Nam on 22 April 2022 for its review and comment. Viet Nam, in turn, provided its feedback on the draft summary report on 21 July 2022.

11. The TTE responded to and incorporated Viet Nam's comments referred to in paragraph 10 above and finalized the summary report in consultation with the Party on 11 August 2022.

II. Technical analysis of the biennial update report

A. Scope of the technical analysis

12. 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. **Error! Reference source not found.**);

(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. **Error! Reference source not found.**).

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

B. Extent of the information reported

14. The elements of information referred to in paragraph A.12(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.

15. 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

³ The consultation was conducted via videoconferencing.

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.

C. Technical analysis of the information reported

16. The technical analysis referred to in paragraph A.12(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.

17. 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. Viet Nam 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.

18. 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

19. 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.

20. In its third BUR, Viet Nam provided an update on its national circumstances, including features of geography and climate, and on its socioeconomic development, including information on population, economy and society. The information reported refers to environmental protection, including an update on climate change related policies that might affect the Party's ability to mitigate and adapt to climate change impacts. For Viet Nam, patterns of climate change, extreme weather and natural disasters have become increasingly complicated and unpredictable, negatively affecting production and people's lives. Laws and policies related to environmental protection and the country's climate change response continue to be revised and updated. Since the submission of its second BUR, Viet Nam has developed and implemented important policies for climate change response at the national level. The third BUR provides an update on these policies.

21. In addition, Viet Nam provided a summary of relevant information regarding its national circumstances in tabular and graphical format.

22. Viet Nam reported in its third BUR information on its institutional arrangements relevant to the preparation of its NCs and BURs. The Party reported that the Department of Climate Change was appointed by the Ministry of Natural Resources and Environment as the executive agency responsible for taking the lead in implementing the Convention, the Kyoto Protocol, the Paris Agreement and other international climate-related commitments, including by preparing periodical national reports for submission to the secretariat.

23. Information on arrangements relevant to the preparation of the third BUR, including the processes and institutions involved, was not clearly reported in the BUR. During the technical analysis, the Party clarified that it implemented the same institutional arrangements used for developing its second for the third BUR with a view to ensuring the continuous development of the reports.

24. The TTE noted that the transparency of the information reported on institutional arrangements could be enhanced by addressing the area noted in paragraph 23 above, which

could facilitate a better understanding of the information reported on institutional arrangements since the submission of Viet Nam's second BUR.

25. Viet Nam reported in its third BUR an update on its domestic MRV arrangements. The description covers key aspects of the institutional arrangements. The Party recognizes that, in order to meet the UNFCCC requirements for implementing its updated NDC in 2021–2030, it must introduce regulations for its national MRV system for mitigation actions to ensure transparency, accuracy and consistency. Nevertheless, Viet Nam has yet to finalize any legal documents defining the responsibilities of ministries, sectors, local authorities, organizations and individuals with regard to monitoring GHG emission reduction actions aimed at achieving targets set by the Government and meeting international commitments. The Ministry of Natural Resources and Environment has taken the lead, working with other ministries and agencies and across sectors to draft a Prime Minister's decision on the national MRV system for GHG emission reduction actions. The draft decision defines the tasks, roles and responsibilities of ministries, sectors and local authorities.

26. Viet Nam reported in its BUR information on its current initiatives for ensuring compliance with the requirements under the ETF. The initiatives relate to the national GHG inventory for 2016, which represents an important step towards enhancing transparency and gradually meeting the requirements of the ETF. In addition, mitigation actions under national programmes will be monitored for each planned activity during the NDC implementation period. The TTE commends the Party for the clear and comprehensive reporting on its proactive approach to preparing for ETF implementation.

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

27. As indicated in table I.1, Viet Nam 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.

28. Viet Nam submitted its third BUR in 2021 and the GHG inventory reported is for 2010, 2014 and 2016. The latest reported inventory year is more than four years prior to the date of submission of the Party's BUR. During the technical analysis, Viet Nam clarified that the process for preparing and developing the third BUR was delayed on the account of the pandemic and national and international procedures for delivering financial support taking longer than expected.

29. Viet Nam submitted an NIR in conjunction with its third BUR. The relevant sections of the NIR were referenced in the BUR and the document was made publicly available on the UNFCCC website.⁴

30. GHG emissions and removals for the BUR covering 2010, 2014 and 2016 were estimated using tier 1 and 2 methodologies from the 2006 IPCC Guidelines; in some cases, the 2019 Refinement to the 2006 IPCC Guidelines, the IPCC good practice guidance or the IPCC good practice guidance for LULUCF were applied, as appropriate. A tier 1 approach was applied for estimating emissions for the IPPU, energy, agriculture (manure management), waste and LULUCF sectors (land-use matrix). A tier 2 methodology was used for estimating emissions from coal mining and handling, rice cultivation and solid waste disposal on land, and for identifying land-use categories. The TTE commends the Party for using the 2006 IPCC Guidelines.

31. Information on EF and AD sources was clearly reported in Viet Nam's BUR, including the exact sources of AD and whether EFs were from the 2006 IPCC Guidelines or country-specific. Information on category-level AD was included in the NIR.

32. Information on the Party's total GHG emissions by gas for 2016 is outlined in table 1 in Gg CO₂ eq. It shows an increase in emissions of 19.9 per cent with LULUCF since 2010. Viet Nam submitted its first GHG inventory, for 1994, in its NC1 in 2003, and its inventory for 2010 in its first BUR in 2014. The TTE considers the 2016 inventory year included in the Party's third BUR to be a more appropriate basis for comparison with the 2010 inventory,

⁴ <https://unfccc.int/documents/273503>.

which was updated for the latest submission, than the 1994 inventory. During the technical analysis, Viet Nam agreed that the 1994 inventory is not an appropriate basis for comparison.

Table 1
Greenhouse gas emissions by gas of Viet Nam for 2016

<i>Gas</i>	<i>GHG emissions (Gg CO₂ eq) including land and HWP^a</i>	<i>% change 2010–2016</i>	<i>GHG emissions (Gg CO₂ eq) excluding land and HWP^a</i>	<i>% change 2010–2016</i>
CO ₂	191 651.08	44.5	231 142.32	50.7
CH ₄	106 838.29	–7.7	106 838.29	–7.7
N ₂ O	18 222.26	14.9	18 222.26	14.9
HFCs	23.32	NA	23.32	NA
PFCs	NE	NA	NE	NA
SF ₆	NE	NA	NE	NA
Other	NE	NA	NE	NA
Total	316 734.96		356 226.19	

^a 2006 IPCC Guidelines AFOLU category 3.B (land) and, if reported, 3.D (HWP (3.D.1) and other emissions (3.D.2)).

33. Information on other emissions was clearly reported, including 54.85 Gg nitrogen oxides, 1,482.34 Gg carbon monoxide, 23.55 Gg sulfur dioxide and 22.38 Gg non-methane volatile organic compounds.

34. Viet Nam 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. “NO” was reported instead of “NE” for PFC emissions from aluminium production (NIR p.196), and “IE” was reported for HFC emissions from aerosols (NIR p.197) without any explanation as to where these emissions were included.

35. Viet Nam reported comparable information addressing the tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF, and the sectoral reporting tables are comparable with the 2006 IPCC Guidelines.

36. The shares of emissions that different sectors contributed to the Party’s total GHG emissions excluding AFOLU (category 3.B and, if reported, 3.D), as reported by Viet Nam, in 2016 are reflected in table 2.

Table 2
Shares of greenhouse gas emissions by sector of Viet Nam for 2016

<i>Sector</i>	<i>GHG emissions (Gg CO₂ eq)</i>	<i>% share^a</i>	<i>% change 2010–2016</i>
Energy	205 832.20	57.8	35.5
IPPU	46 094.64	12.9	78.4
AFOLU	44 069.74	23.5	–35.9
Livestock (category 3.A)	18 513.37	5.2	–0.7
Land (category 3.B)	–39 491.24	NA	–90.8
Aggregate sources and non-CO ₂ emissions sources on land (category 3.C)	65 047.6	18.3	–8.1
HWP and other emissions (category 3.D)	NA	NA	NA
Waste	20 738.38	5.8	16.7

^a Share of total without 2006 IPCC Guidelines AFOLU category 3.B (land) and, if reported, 3.D (HWP (3.D.1) and other emissions (3.D.2)).

37. Viet Nam reported information on its use of GWP values consistent with those provided by the IPCC in its AR5 based on the effects over a 100-year time-horizon of GHGs. The values were applied for the latest inventory year (2016) and the recalculated years (2010 and 2014).

38. 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 the reference approach. The energy sector accounted for 65 per cent of total emissions, with the largest contributing source being energy industries.

39. For the IPPU sector, Viet Nam estimated emissions for a few subcategories under the four key categories in the sector (cement, iron and steel, lime, and ammonia production) and under product uses as substitutes for ozone-depleting substances, which is not a key category. Viet Nam also estimated emissions from fire protection (subcategory 2.F.3). The IPPU sector accounted for 14.6 per cent of total emissions, with the largest contributing source being cement production.

40. HFC and PFC emissions, other than for subcategory 2.F.3, were not reported and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that the national statistical system does not include data on the use of HFCs, PFCs or SF₆. The Ministry of Natural Resources and Environment and the General Department of Viet Nam Customs have data only on HFC imports. Viet Nam plans to collect data within its national MRV system once the system has been implemented.

41. For many IPPU categories, Viet Nam reported in its NIR that it did not estimate emissions owing to the lack of AD and did not use data from international statistics. Viet Nam included one international statistical source in its NIR and third BUR (NIR p.190, reference 29: World Steel Association). The TTE considers that international data sources could be used to fill data gaps and enable the Party to estimate emissions in line with the 2006 IPCC Guidelines. During the technical analysis, Viet Nam clarified that it will consider using international data sources for the national GHG inventory.

42. For categories 3.A and 3.C under the AFOLU sector from the 2006 IPCC Guidelines, enteric fermentation (CH₄), rice cultivation (CH₄) and agricultural soils (N₂O) were identified as key categories and the most relevant emissions sources in the sector. Viet Nam used EFs from the 2006 IPCC Guidelines and the 2019 Refinement to the 2006 IPCC Guidelines and reported corresponding AD in the NIR.

43. Information on animal production and manure management (category 3.A) and aggregated sources and non-CO₂ emissions (category 3.C) was clearly reported in the NIR. In addition, the inventory of land-use categories was compiled using the 2006 IPCC Guidelines and the remote-sensing method.

44. Information on the country-specific AD, EFs and parameters used for the tier 2 methodology under the AFOLU sector and the sources of the data used were not clearly reported in the Party's BUR. However, Viet Nam provided a list of the EFs and other parameters used for rice cultivation (subcategory 3.C.7) and forest land (subcategory 3.B.1). During the technical analysis, Viet Nam clarified that the country-specific data were developed within the framework of a national project funded by the GEF and UNEP and implemented by the Ministry of Natural Resources and Environment in 2007.

45. For the waste sector, information was clearly reported on GHG emissions, methodological tier levels, AD and their sources, key categories and notation keys used. The waste sector accounted for 6.5 per cent of total emissions, with the largest contributing source being solid waste disposal sites.

46. Information was not clearly reported in the NIR on some waste management parameters (e.g. there are errors in the data on the proportion of waste going to different management systems), AD extrapolation (including the extrapolation method used to determine pre-1995 population) and AD manipulation techniques (including assumptions applied in estimating the volume of waste from facilities). During the technical analysis, the Party provided relevant clarifications through detailed responses to the observations of the TTE, including on percentage of waste disposed to managed and unmanaged solid waste disposal sites and the assumptions used for determining pre-1995 population.

47. The NIR and the third BUR provide an update to some of the GHG inventories reported in the Party's previous NCs and BURs. The information reported provides an update of the Party's NC3, which addressed anthropogenic emissions and removals for 2014. The update was carried out for 2010 and 2014 using the methodologies contained in the 2006

IPCC Guidelines, thus generating a consistent time series. The Party reported that it recalculated emissions for all sectors for 2010 and 2014 owing to changes in AD, methodologies, EFs and parameters due to the implementation of the 2006 IPCC Guidelines and, for some categories, the 2019 Refinement to the 2006 IPCC Guidelines, and to the use of GWP values from the AR5 for AFOLU categories.

48. For the AFOLU sector, the key improvements were a result of implementing the 2006 IPCC Guidelines. The Party performed recalculations for livestock parameters (category 3.A), land categories (category 3.B), biomass burning on cropland (subcategory 3.C.1.b) and direct N₂O emissions, mostly for rice fields (subcategory 3.C.4). The changes made for the third BUR since previous submissions were clearly explained. Regarding time-series consistency for AFOLU categories, Viet Nam clarified that it was able to undertake recalculations for the key categories for two separate years (2014 and 2010) only owing to limited capacity. Overall, the Party reported that recalculations were performed using new methodologies, updated data sources and updated GWP values and resulted in a decrease in estimated emissions for 2014 of 1.9 per cent. The GHG inventories for 2010, 2014 and 2016 reported in the BUR are consistent.

49. Viet Nam described in its BUR the institutional framework for the preparation of its 2016 GHG inventory. The Party reported that the Department of Climate Change under the Ministry of Natural Resources and Environment is the governmental body responsible for its GHG inventory, which was prepared with the support of UNEP.

50. Information on the data collection and processing procedures within the national inventory system was not reported in Viet Nam's BUR or NIR. During the technical analysis, the Party clarified that by the end of 2021 the Minister of Natural Resources and Environment will ratify a new decree establishing all the procedures and rules for the inventory system, which will make the procedures more efficient.

51. Viet Nam clearly reported that a key category analysis was performed for the level of emissions for 2016. The Party identified 42 key categories: energy industries – electricity generation (1.A.1.a.i) was the source category contributing the most to the total emissions, followed by rice cultivation (3.C.7).

52. Information on the performance of a key category analysis for the trend in emissions was not reported in Viet Nam's BUR. During the technical analysis, the Party clarified that a key category analysis for the trend was not carried out owing to lack of resources.

53. The BUR provides information on QA/QC measures for all sectors. The information reported includes details of QC activities and their results, and a description of the QA procedures undertaken. The TTE commends Viet Nam for providing information in accordance with the IPCC good practice guidance.

54. Viet Nam clearly reported information on CO₂ fuel combustion using both the sectoral and the reference approach for 2016. The information reported indicates that the combustion emissions estimated under the sectoral and reference approach are 184,534.87 and 188,191.30 Gg CO₂, respectively. The difference between the estimates calculated using the two approaches was reported as 1.9 per cent for the reported inventory year.

55. Information on the difference between the sectoral and the reference approach for other inventory years (2010 and 2014) was not reported in Viet Nam's BUR. During the technical analysis, the Party clarified that the difference was not significant.

56. Information on emissions from international aviation and marine bunker fuels was reported as "NE", but the reason for not estimating these emissions was not clearly reported in Viet Nam's BUR or NIR. During the technical analysis, the Party clarified that the emissions were reported as "NE" owing to time and budget constraints.

57. Viet Nam reported information on the uncertainty assessment (level) of its national GHG inventory. The uncertainty analysis was based on the tier 1 approach and covers all source categories and all direct GHGs. The results obtained, as reported in the BUR, reveal that the level uncertainty for emissions is 5.6 per cent for the energy sector, 26.9 per cent for the IPPU sector, 100.2 per cent for the AFOLU sector and 20.3 per cent for the waste sector.

58. For the AFOLU sector as a whole, a high level of uncertainty was reported but information on the uncertainties associated with EFs and AD and their sources was not clearly reported. During the technical analysis, Viet Nam provided a list of uncertainty parameters for the EFs and AD used for various categories, most of which are default values from the 2006 IPCC Guidelines or based on expert judgment.

59. 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, 40, 41, 44, 46, 50, 52, 55, 56 and 58 above, which could facilitate a better understanding of the information reported on GHG inventories.

60. In paragraph 36 of the summary report on the technical analysis of Viet Nam's second BUR, the previous TTE noted areas where the transparency of the reporting on GHG inventories could be further enhanced. The current TTE noted the improvements referred to in paragraph 49 above and commends the Party for enhancing the transparency of its reporting.

61. Viet Nam reported in its BUR (section 5.2.3) information on the GHG inventory training programme required for capacity-building. Viet Nam also reported in its NIR areas for improvement for its GHG inventory reporting for compliance with requirements under the ETF. The initiatives relate to GHG inventory training programmes, using higher-tier methods for key categories and improving data-collection processes.

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

62. As indicated in table I.2, Viet Nam 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.

63. The information reported provides a clear overview of the Party's mitigation actions and their effects. In its BUR, Viet Nam reported information on its national context and framed its national mitigation planning and actions in the context of the national climate change strategy and the national emission reduction targets for 2020 and 2030. Viet Nam reported in its BUR information on national, sectoral and local policies and on recently implemented GHG emission reduction activities, in addition to updates on the implementation of mitigation actions. Most of the mitigation actions reported by Viet Nam are in the energy, IPPU and AFOLU sectors. Viet Nam reported that it has achieved its national strategy objectives for climate change covering the energy, construction, transport, industry, agriculture and waste sectors. A policy rolled out within the framework of the Viet Nam National Green Growth Strategy promotes efforts to develop renewable energy, improve energy efficiency and reduce GHG emission intensity in the energy, construction, transport and industry sectors.

64. Two major national programmes – a target programme for climate change response and green growth for 2016–2020, and the 2030 agenda for sustainable development – have been implemented in most parts of Viet Nam. In its BUR, the Party reported that the mitigation actions under its NDC are expected to contribute to a reduction in its total GHG emissions of 9 per cent, equivalent to 83.9 Mt CO₂ eq, compared with the 'business as usual' scenario by 2030 through domestic actions, rising to 27 per cent, equivalent to 250.8 Mt CO₂ eq, over the same time frame with international support.

65. The Party reported a summary of its mitigation actions in tabular format in accordance with decision 2/CP.17, annex III, paragraph 11, and reported a number of mitigation actions at different stages of implementation under three categories: NAMAs, intersectoral mitigation activities and mitigation actions by sector. The Party also reported information on its mitigation actions in narrative format.

66. Consistently with decision 2/CP.17, annex III, paragraph 12(a), Viet Nam clearly reported the names of mitigation actions or groups of actions, coverage (sector and gases) and progress indicators in the BUR (annexes 3.2–3.4). A clear description of mitigation actions, as well as information on quantitative goals for most mitigation actions, was

provided in the BUR. The TTE noted the improvement in the reporting on quantitative goals and progress indicators in the Party's third BUR.

67. Information on quantitative goals and progress indicators for some of the mitigation actions in the energy sector was not reported in the BUR. During the technical analysis, the Party clarified that such information was not available when the BUR was being prepared.

68. Information on the status of implementation of mitigation actions was not clearly reported in Viet Nam's BUR. During the technical analysis, the Party clarified that the reporting in the BUR (annexes 3.2–3.4) includes information on each mitigation activity's time frame for implementation, and therefore status, which is why this information was not included in the reporting table.

69. Viet Nam clearly reported information on methodologies and assumptions, the objectives of the actions and steps taken or envisaged to achieve those actions for all mitigation actions in the energy, AFOLU and industrial processes sectors.

70. For the energy and industry sectors, the mitigation actions focused mainly on improving energy efficiency and promoting renewable energy sources and were reported as implemented. The Party reported the results of implementing some of the mitigation actions, as estimated outcomes, emission reductions or mitigation co-benefits. The mitigation actions include promoting adoption and operation of energy-efficient industrial boilers (estimated emission reduction of 183,736 t CO₂ eq/year); a renewable energy development project (estimated installed capacity of 250 MW); a low-emission energy programme (estimated emission reduction of 360,000 t CO₂ eq over the programme life cycle); promoting the market of investments in energy saving and efficiency in the industrial sector; the Danish–Vietnamese energy partnership programme; the second phase of a renewable energy and energy efficiency programme; the Association of Southeast Asian Nations low-carbon energy programme; climate protection through the sustainable bioenergy market; and a smart-grid project for renewable energy and energy efficiency. Mitigation co-benefits include job creation, reduced health risks in the industrial sector, improvements to public health and reduced environmental pollution.

71. Viet Nam noted that, for the energy and industry sectors, it estimated GHG emission reductions only during project implementation, not after project completion, for some of the reported projects. In addition, the Party estimated GHG emission reductions for some projects, but did not provide estimated GHG emission reductions for some mitigation activities.

72. For the AFOLU sector, the mitigation actions focused mainly on sustainable agriculture and sustainable management of forests and were reported as implemented. The Party reported the results of implementing some of the mitigation actions, as estimated outcomes, emission reductions or mitigation co-benefits. The mitigation actions include a sustainable agriculture transformation project (estimated emission reduction of 1 Mt CO₂ eq/year); sustainable rice production and GHG emission reduction in the Thai Binh province (estimated emission reduction of 375,000 t CO₂ eq); the third phase of a forest and delta programme (estimated emission reduction of 50.6 Mt CO₂ eq); a scheme for emission reduction and transfer of emission reduction rights in the northern central region of the country (estimated emission reduction of 25 Mt CO₂ eq); sustainable management of natural resources; protection and integrated management of forest ecosystems in the Quang Nam, Kon Tum and Gia Lai provinces; a project for sustainable forest management and biodiversity to reduce CO₂ emissions; the second phase of supporting the country's readiness for REDD+; and improving the resilience to climate change impacts of vulnerable coastal communities – mangrove planting component. Viet Nam noted that it estimated GHG emission reductions only during project implementation, not after project completion, for some of the reported projects.

73. Viet Nam also noted that, for the AFOLU sector, it estimated GHG emission reductions for some projects but did not provide estimated GHG emission reductions for some mitigation activities.

74. Viet Nam provided information on its involvement in international market mechanisms as a Party to the Kyoto Protocol. The Party documented 27 registered clean

development mechanism projects. With a global ranking of fourth in terms of total registered projects, it has had a total of 25,485,098 CERs issued. Of the successfully registered projects, 258 are single project activities and the remainder are registered as programmes of activities. The areas covered by the registered projects include hydropower, waste, biomass, energy efficiency, wind power, solar power, forestry and associated gas. Hydropower projects account for over 70 per cent of the registered projects. Viet Nam reported that other market mechanisms include 14 registered Joint Crediting Mechanism projects, 8 of which have been issued with 4,415 CERs; 24 registered Gold Standard projects, with 4,909,354 CERs issued for 11 projects; 22 projects registered under the Voluntary Carbon Standard, with a total of 629,934 CERs issued; and 51 registered projects under renewable energy certificate mechanisms, with a total of 2,199,751 CERs issued.

75. Viet Nam reported information on its domestic MRV arrangements in accordance with decision 2/CP.17, annex III, paragraph 13. The information reported indicates that Viet Nam is in the process of designing and developing a domestic MRV system for mitigation actions. Further, Viet Nam reported consistently with the voluntary general guidelines for domestic MRV of domestically supported NAMAs, contained in the annex to decision 21/CP.19. The Party outlined the steps on a proposed pathway to establishing an enhanced MRV system, including establishing institutional arrangements, defining mitigation accounting standards, monitoring data-collection responsibilities, defining reporting obligations and defining verification approaches and roles. As the coordinating entity, the Ministry of Natural Resources and Environment has been working with other ministries, sectors and agencies to prepare a legal document on the national MRV system for mitigation activities, which was to be finalized in 2021.

76. The TTE noted that the transparency of the information reported on mitigation actions could be further enhanced by addressing the areas noted in paragraphs 67, 68, 71 and 73 above, which could facilitate a better understanding of the information reported on mitigation actions.

77. In paragraph 51 of the summary report on the technical analysis of Viet Nam's second BUR, the previous TTE noted an area where the transparency of the reporting on mitigation actions could be enhanced. The current TTE noted the improvement referred to in paragraph 71 above and commends the Party for enhancing the transparency of its reporting.

78. Viet Nam reported in its BUR (section 4.3.3) information on its areas for improvement for future BURs and its current initiatives for enhancing its existing MRV system for compliance with requirements under the ETF. The initiatives relate to implementing regulations aimed at promoting compliance with the Party's laws and MRV system principles. Viet Nam identified a capacity-building need for managing the flow of data and information for its reporting in compliance with the ETF. During the technical analysis, the Party also identified capacity-building needs for assessing the impact of mitigation actions, especially over different time frames, and assessing the combined impact of all mitigation activities, which is important for tracking progress in NDC implementation under the ETF. Viet Nam further identified a capacity-building need in relation to developing 'business as usual' scenario projections, which is necessary for NDC tracking under the ETF.

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

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

80. Viet Nam clearly reported information on constraints and gaps, and related financial, technical and capacity-building needs in accordance with decision 2/CP.17, annex III, paragraph 14. In its BUR, the Party reported that in 2017–2020 domestic resources were used and international support was mobilized, enabling it to overcome difficulties and bridge gaps identified in relation to its NC3 and second BUR. The third BUR (table 5.1) contains information on current difficulties and gaps and efforts to address them and provides an evaluation and proposed solution for each one.

81. Viet Nam reported information on financial resources, technology transfer, capacity-building and technical support received in accordance with decision 2/CP.17, annex III, paragraph 15. The third BUR of Viet Nam was developed in 2019–2020 with financial support from the GEF via UNEP, and technical support from other international organizations. The BUR (annex 4) contains details of support received for developing it, including USD 352,000 from the GEF. The GCF has undertaken to provide funding of USD 146 million for three projects in Viet Nam, of which USD 20.26 million has been disbursed. The GEF has provided over USD 400 million for implementing climate change response projects. Multilateral organizations such as the United Nations Industrial Development Organization and financial institutions such as the Asian Development Bank and the World Bank have either provided or committed to providing financial support. In addition to the support from the GCF and the GEF, multilateral organizations and bilateral cooperation mechanisms in developed countries have provided financial support through bilateral projects and some regional projects for climate change response in Viet Nam. Furthermore, Vietnamese agencies and their partners have coordinated a number of climate change response projects with the aim of finalizing documents for applying for support.

82. Information on technology needs was reported in the BUR (table 5.7). The Party included its technological needs for meeting its mitigation target according to its updated NDC until 2030, such as energy efficiency technologies in various sectors, process optimization at coal-fired power plants, electrification of the transport sector, semi-anaerobic waste treatment methods, development of agroforestry models to enhance carbon stocks, and destruction of fluorinated gases.

83. Information on how the Party's nationally determined technology needs were identified was not reported in Viet Nam's BUR. During the technical analysis, the Party clarified that the assessment of its needs for technology support for meeting its mitigation target according to its updated NDC until 2030 was referred to and updated in the light of the results of the project "Low carbon technology assessment contributing to implementation of Viet Nam's NDC", rolled out in 2018 to support the planning and implementation of NAMAs.

84. The TTE noted that the transparency of the information reported on needs and support received could be further enhanced by addressing the area noted in paragraph 83 above, which could facilitate a better understanding of the information reported on needs and support received.

D. Identification of capacity-building needs

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

(a) Increasing experts' knowledge of the structure and content of international databases to enable them to access and use the databases to collect AD, extract required data and information, process data for preparing the GHG emissions inventory and ensure inventory completeness in line with the 2006 IPCC Guidelines and its 2019 Refinement;

(b) Identifying all data that need to be collected according to the 2006 IPCC Guidelines (for tier 1–3 methodology) in order to ensure completeness and enable the Party to move to higher tiers for key categories of the GHG inventory;

(c) Carrying out data collection, modelling and processing for estimating emissions of fluorinated gases, including SF₆;

(d) Using gap-filling methods and time-series consistency procedures in order to enhance the transparency of the reporting of recalculations;

(e) Using approach 1 trend assessment and approach 2 level and trend assessment to identify key categories;

(f) Estimating international aviation and navigation emissions;

(g) Using the *EMEP/EEA air pollutant emission inventory guidebook 2019* to estimate non-GHG emissions, including by developing appropriate data-collection processes;

(h) Identifying cross-cutting QA/QC activities that should be performed, including documenting QA/QC activities and archiving information on them;

(i) Preparing standardized templates for reporting sustainable development impacts, especially quantitative estimates;

(j) Assessing mitigation impacts and estimating the aggregate GHG emission reduction achieved by reported mitigation actions;

(k) Assessing opportunities and relevant international market mechanisms and how they can be accessed.

86. The TTE noted that, in addition to those identified during the technical analysis, Viet Nam reported the following capacity-building needs in its BUR:

(a) Delivering capacity-building programmes and activities for ministries, sectors and local authorities on integrating climate change issues into policymaking and assessing the mitigation impact of policies that have been developed;

(b) Designing training programmes on the GHG inventory and mitigation;

(c) Building the capacity of management agencies to assess mitigation investment projects.

87. In consultation with Viet Nam, the TTE identified the following needs for capacity-building that could facilitate the transition to the ETF:

(a) Assessing the impacts of mitigation actions, especially when time frames vary, and investigating how the impacts of all mitigation activities can be aggregated, which is important for tracking progress in NDC implementation;

(b) Developing projections for the ‘business as usual’ scenario, which are needed for tracking progress in NDC implementation;

(c) Modelling the net zero emissions scenario;

(d) Developing institutional arrangements for sustainable reporting under the ETF;

(e) Reporting on adaptation;

(f) Using the common tabular format for tracking progress in NDC implementation;

(g) Using common reporting tables for the GHG inventory;

(h) Updating the adaptation and mitigation technology needs assessment with a view to achieving net zero emissions by 2050 and meeting NDC objectives;

(i) Providing training on methodologies for technology needs assessment in relation to CH₄ mitigation in order to contribute to the achievement of the objectives of the Global Methane Pledge.

88. In paragraphs 63–64 of the summary report on the technical analysis of Viet Nam’s second BUR, the previous TTE, in consultation with the Party, identified capacity-building needs. In its third BUR, Viet Nam reflected that some of those capacity-building needs have been addressed.

III. Conclusions

89. The TTE conducted a technical analysis of the information reported in the third BUR of Viet Nam 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 some 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; constraints and gaps, and related financial, technical and capacity-building needs, including a description of support needed and received; the level of support received to enable the preparation and submission of BURs; and the institutional arrangements for domestic MRV. During the technical analysis, additional information was provided by Viet Nam on the national inventory and mitigation actions, as well as on institutional arrangements for the preparation of BURs. The TTE concluded that the information analysed is mostly transparent.

90. Viet Nam reported an update on the institutional arrangements relevant to the preparation of its BURs; its national circumstances, including features of geography and climate; and its socioeconomic development. The Party referred to environmental protection measures and included an update on climate change related policies that might help the Party to mitigate and adapt to climate change impacts. Since the submission of its second BUR, Viet Nam has developed and implemented important policies for climate change response at the national level. An update on these policies was provided in the third BUR, along with an update on the Party's domestic MRV arrangements.

91. In its third BUR, submitted in 2021, Viet Nam reported information on its national GHG inventory for 2016 and recalculations for 2010 and 2014. Viet Nam submitted for the first time an NIR as part of its BUR. This included GHG emissions and removals of CO₂, CH₄ and N₂O for some relevant sources and sinks, HFC emissions for one source category and the precursor gases (carbon monoxide, nitrogen oxides, sulfur dioxide and non-methane volatile organic compounds). The inventory was developed on the basis of the 2006 IPCC Guidelines, although in some cases the IPCC good practice guidance or the IPCC good practice guidance for LULUCF was applied. The total GHG emissions for 2016 were reported as 356, 226.19 Gg CO₂ eq (excluding LULUCF) and 316,734.95 Gg CO₂ eq (including LULUCF). Estimates of PFCs and SF₆ were not provided owing to difficulties in obtaining the necessary data, as clarified by the Party in the BUR and during the technical analysis.

92. Viet Nam reported information on mitigation actions and their effects in both tabular and narrative format, and framed its national mitigation planning and actions in the context of its national strategy, which was launched in 2015. Viet Nam reported planned, implemented, ongoing or completed actions in the energy, AFOLU and industrial sectors. The mitigation actions focus on improving energy efficiency, promoting renewable energy sources and enhancing sustainable agriculture. The Party reported the progress of implementation of its mitigation actions and the results achieved, including emission reductions and estimated outcomes. Viet Nam reported actions with mitigation co-benefits, including job creation, reduced health risks in the industrial sector, improvements to public health and reduced environmental pollution. The Party also reported information on its involvement in international market mechanisms and MRV arrangements. The Party documented 27 registered clean development mechanism projects with a total of 25,485,098 CERs issued. The Party outlined the steps on a proposed pathway to establishing an enhanced MRV system, including establishing institutional arrangements and defining responsibilities.

93. Viet Nam reported, fully in accordance with paragraphs 14–16 of the UNFCCC reporting guidelines on BURs, information on finance, technology and capacity-building needs and support received, including information on constraints and gaps, and related financial, technical and capacity-building needs. It also reported on efforts to bridge those gaps and provided an evaluation and proposed solution for each one. The third BUR of Viet Nam was developed in 2019–2020 with financial support from the GEF via UNEP and technical support from other international organizations. Viet Nam reported that it received financial support of USD 352,000 from the GEF for preparing its third BUR. The Party reported information on nationally determined technology needs with regard to the development and transfer of technology. Information on how the nationally determined technology needs were identified was not reported in Viet Nam's BUR, although the Party provided clarification in this regard during the technical analysis.

94. The current TTE noted improvements in the reporting in the Party's third 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 second BUR. However, improvements are ongoing and the Party has taken note of outstanding areas for future improvement.

95. The TTE, in consultation with Viet Nam, identified the 11 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, in consultation with the TTE, also identified the nine needs for capacity-building to facilitate transition to the ETF listed in paragraph 87 above. Viet Nam prioritized all the capacity-building needs.

Annex I

Extent of the information reported by Viet Nam in its third biennial update report

Table I.1

Identification of the extent to which the elements of information on greenhouse gases are included in the third biennial update report of Viet Nam

<i>Decision</i>	<i>Provision of the reporting guidelines</i>	<i>Assessment of whether the information was reported</i>	<i>Comments on the extent of the information provided</i>
Decision 2/CP.17, paragraph 41(g)	The first BUR shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, or more recent years if information is available, and subsequent BURs shall cover a calendar year that does not precede the submission date by more than four years.	No	Viet Nam submitted its third BUR in April 2021; the GHG inventory reported is for 2016.
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	Viet Nam used the 2006 IPCC Guidelines, and the 2019 Refinement to the 2006 IPCC Guidelines for AFOLU.
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.	Partly	Disaggregated data were not reported.
Decision 2/CP.17, annex III, paragraph 6	Non-Annex I Parties are encouraged to include, as appropriate and to the extent that capacities permit, in the inventory section of the BUR:		
	(a) The tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF;	Yes	Comparable information was reported in the BUR (table 2.6).
	(b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines.	Yes	Comparable information was reported.
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.	Partly	The time series reported does not include 1995–1999, 2001–2009 or 2011–2013.
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	
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	
	(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	

<i>Decision</i>	<i>Provision of the reporting guidelines</i>	<i>Assessment of whether the information was reported</i>	<i>Comments on the extent of the information provided</i>
	(b) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF ₆).	Yes	The Party reported "NE".
Decision 2/CP.17, annex III, paragraph 10	Additional or supporting information, including sector-specific information, may be supplied in a technical annex.	Yes	The Party submitted an NIR as an annex to its 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.	Partly	Information on institutional arrangements for the national GHG inventory was reported. However, information on data collection and processing procedures within the national inventory system was not reported.
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 ;	Partly	Some source categories were not estimated.
	(b) CH ₄ ;	Partly	Some source categories were not estimated.
	(c) N ₂ O.	Partly	Some source categories were not estimated.
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	Notation keys were used for not estimated source categories.
	(b) PFCs;	Yes	Notation keys were used for not estimated source categories.
	(c) SF ₆ .	Yes	Notation keys were used for not estimated source categories.
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 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	The Party reported on sulfur oxides.

<i>Decision</i>	<i>Provision of the reporting guidelines</i>	<i>Assessment of whether the information was reported</i>	<i>Comments on the extent of the information provided</i>
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;	No	Emissions were reported as “NE”.
	(b) Marine bunker fuels.	No	Emissions were reported as “NE”.
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.	NA	The Party used the GWP provided in the AR5.
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	Viet Nam used the 2006 IPCC Guidelines. Tier 1 and 2 methodologies were used for specific sectors.
	(b) Explanation of the sources of EFs;	Yes	
	(c) Explanation of the sources of AD;	Yes	
	(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:	NA	
	(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	

<i>Decision</i>	<i>Provision of the reporting guidelines</i>	<i>Assessment of whether the information was reported</i>	<i>Comments on the extent of the information provided</i>
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.	Yes	Notation keys were used.
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;	Partly	For the AFOLU sector, information on the uncertainties associated with EFs and AD and their sources was not clearly reported.
	(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 third biennial update report of Viet Nam

<i>Decision</i>	<i>Provision of the reporting guidelines</i>	<i>Assessment of whether the information was reported</i>	<i>Comments on the extent of the information provided</i>
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	
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 most of the mitigation actions in the energy sector was not reported, as such information was not available when the BUR was being prepared.
	(b) Information on:		

<i>Decision</i>	<i>Provision of the reporting guidelines</i>	<i>Assessment of whether the information was reported</i>	<i>Comments on the extent of the information provided</i>
	(i) Methodologies;	Yes	
	(ii) Assumptions;	Yes	
	(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;	Partly	The Party reported mitigation actions but did not indicate their status of implementation.
	(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 on emission reductions for most of the mitigation actions in the energy sector.
	(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 third biennial update report of Viet Nam

<i>Decision</i>	<i>Provision of the reporting requirements</i>	<i>Assessment of whether the information was reported</i>	<i>Comments on the extent of the information provided</i>
Decision 2/CP.17, annex III, paragraph 14	Non-Annex I Parties should provide updated information on:		
	(a) Constraints and gaps;	Yes	
	(b) Related financial, technical and capacity-building needs.	Yes	
Decision 2/CP.17, annex III, paragraph 15	Non-Annex I Parties should provide:		
	(a) Information on financial resources received, technology transfer and capacity-building received;	Yes	
	(b) Information on technical support received from the GEF, Parties included in Annex II to the Convention and other developed country Parties, the GCF and multilateral institutions for activities relating to climate change, including for the preparation of the current BUR.	Yes	
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:		

<i>Decision</i>	<i>Provision of the reporting requirements</i>	<i>Assessment of whether the information was reported</i>	<i>Comments on the extent of the information provided</i>
	(a) Nationally determined technology needs;	Partly	Information on how the Party's nationally determined technology needs were identified was not reported.
	(b) Technology support received.	Yes	

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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C. Other documents

The following references may not conform to UNFCCC editorial style as some have been reproduced as received:

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