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Report on the technical expert review of the first biennial transparency report of Canada

Summary

This report presents the results of the technical expert review of the first biennial transparency report of Canada, conducted by a technical expert review team in accordance with the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement. The review took place from 28 April to 2 May 2025 in Gatineau, Canada.

Abbreviations and acronyms

A6.4ER	emission reduction under Article 6, paragraph 4, of the Paris Agreement
BTR	biennial transparency report
CER	certified emission reduction
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CRT	common reporting table
CTF	common tabular format
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
ITMO	internationally transferred mitigation outcome
LULUCF	land use, land-use change and forestry
MPGs	modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement
N_2O	nitrous oxide
NA	not applicable
NDC	nationally determined contribution
NE	not estimated
NF_3	nitrogen trifluoride
NID	national inventory document
PaMs	policies and measures
PFC	perfluorocarbon
QA/QC	quality assurance/quality control
SF_6	sulfur hexafluoride
TERT	technical expert review team
UNDP	United Nations Development Programme
WAM	‘with additional measures’
WM	‘with measures’

I. Introduction and summary

A. Introduction

1. This report covers the technical expert review of the BTR1 of Canada. The review was organized by the secretariat and conducted by the TERT in accordance with the MPGs,[1] particularly chapter VII thereof.

2. A draft version of this report was transmitted to the Government of Canada, which provided comments that were taken into account, as appropriate, in this final version of the report.[2]

3. The review was conducted as an in-country review from 28 April to 2 May 2025 in Gatineau, Canada, by the following team of nominated experts from the UNFCCC roster of experts: Qingxian Gao (China), Adriana González (Costa Rica), Juan Luis Martin Ortega (El Salvador), Mahmoud Medany (Egypt), Kyoko Miwa (Japan), Cris-Tiina Pärn (Estonia), Renata Patricia Soares Grisoli (Brazil) and David Glen Thistlethwaite (United Kingdom of Great Britain and Northern Ireland). Juan Luis Martin Ortega and David Glen Thistlethwaite were the lead reviewers. The review was coordinated by Davor Vesligaj (secretariat).

B. Scope

4. The TERT conducted a technical expert review of the information reported in the BTR1 of Canada as per the scope of the review defined in paragraph 146 of the MPGs, consisting of:

(a) Review of the consistency of the information submitted by the Party under Article 13, paragraphs 7 and 9, of the Paris Agreement with the MPGs (see chap. II.A below);

(b) Consideration of the Party's implementation and achievement of its NDC under Article 4 of the Paris Agreement (see chap. II.B below);

(c) Consideration of the support provided by the Party, as relevant (see chap. II.C below);

(d) Identification of areas of improvement[3] for the Party related to implementation of Article 13 of the Paris Agreement (see chap. II.D below).

C. Summary

5. Canada submitted its BTR1 on 30 December 2024, before the deadline of 31 December 2024 mandated in decision 18/CMA.1. Canada submitted its NID as a stand-alone document on 2 May 2024, before the deadline of 31 December 2024. Canada submitted its CRTs on 24 October 2024, before the deadline of 31 December 2024, and CTF tables on 27 December 2024, before the deadline of 31 December 2024.

6. A list of the areas of improvement identified on the basis of the review of the consistency of the reported information with the MPGs can be found in the assessment tables.[4]

[1] Decision 18/CMA.1, annex.
[2] As per para. 162(e) of the MPGs.
[3] As referred to in paras. 7, 8, 146(d) and 162(d) of the MPGs.
[4] Contained in document FCCC/ETF/TERR.1/2024/CAN/Add.1, available at https://unfccc.int/first-biennial-transparency-reports.

D. Information provided by the Party pursuant to paragraphs 143–145 of the modalities, procedures and guidelines

7. Canada considers itself a developed country Party under the Paris Agreement and as such did not report information on support needed and received for implementing Article 13 of the Paris Agreement and transparency-related activities, including for transparency-related capacity-building.

II. Technical expert review[5]

A. Review of the consistency of the submitted information with the modalities, procedures and guidelines[6]

1. National inventory report[7]

8. The TERT assessed the information reported in the BTR1 of Canada and identified areas of improvement relating to consistency with the MPGs, which are described in tables 2–7 of the assessment tables referred to in paragraph 6 above and summarized in table 1.

[5] As per para. 187 of the MPGs.
[6] As per para. 146(a) of the MPGs.
[7] As per para. 150(a) of the MPGs.

Table 1
Information reported in Canada's national inventory report and review of consistency with the modalities, procedures and guidelines

Element	*Elements of information to be reported*	*Summary of information reported*	*ID#(s) for the area(s) of improvement identified*[a]
Submission type (para. 12 of the MPGs)	Has the national inventory report been submitted as a stand-alone document?	Yes	No areas of improvement were identified
Time series (paras. 57–58 of the MPGs)	What years have been reported and is the time series in accordance with the MPGs?	1990–2022, in accordance with the MPGs	No areas of improvement were identified
Metrics (para. 37 of the MPGs)	Has the Party used the 100-year GWP values from the Fifth Assessment Report of the IPCC?	Yes	No areas of improvement were identified
	Has the Party used other metrics?	No	No areas of improvement were identified
Gases (paras. 47–49 and 51 of the MPGs)	Which gases have been reported?	CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3	No areas of improvement were identified
Indirect emissions (para. 52 of the MPGs)	Has the Party reported indirect CO_2 emissions and national totals with and without indirect CO_2?	No	2.G.2
	Has the Party reported indirect N_2O emissions from sources other than those in the agriculture and LULUCF sectors as a memo item?	No	No areas of improvement were identified
National circumstances and institutional arrangements (paras. 18–19 of the MPGs)	Has the Party reported information on the functions related to inventory planning, preparation and management?	Yes	No areas of improvement were identified
Methodologies, parameters and data (paras. 20–24 of the MPGs)	Has the Party used the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*?	Yes	No areas of improvement were identified
	Has the Party used other IPCC methodological guidance?	Yes, the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* and the *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*	No areas of improvement were identified
Key category analysis (paras. 25 and 41–42 of the MPGs)	Has the Party reported a key category analysis?	Yes, a key category analysis was performed using approach 1 and a 95 per cent threshold for level and trend	No areas of improvement were identified

Element	*Elements of information to be reported*	*Summary of information reported*	*ID#(s) for the area(s) of improvement identified*[a]
		assessment for the starting year (1990) and the latest reporting year (2022) and with and without LULUCF	
Time-series consistency and recalculations (paras. 26–28 and 43 of the MPGs)	Has the Party reported a consistent time series?	Partly	3.E.2, 4.I.3, 4.I.9, 6.L.7
	Has the Party provided justification and explanatory information for recalculations?	Yes	No areas of improvement were identified
Uncertainty assessment (paras. 29 and 44 of the MPGs)	Has the Party reported the results of the uncertainty analysis and the methods used, underlying assumptions and trends?	Yes, including level and trend uncertainty, reported using approach 1 for 1990 and the latest reporting year (2022)	No areas of improvement were identified
QA/QC plan and procedures (paras. 34–36 and 46 of the MPGs)	Has the Party elaborated information on an inventory QA/QC plan, including information on the inventory agency responsible for implementing QA/QC, and current and future QA/QC procedures?	Yes, including information on the inventory agency responsible for implementing QA/QC, an inventory QA/QC plan, general QC procedures and category-specific QC for key categories and for individual categories for which significant methodological changes and/or data revisions have occurred	No areas of improvement were identified
Assessment of completeness (paras. 30–33, 45, 47 and 50 of the MPGs)	Have any areas of improvement for lack of completeness been identified for the following sectors?		
	Energy	No	No areas of improvement were identified
	IPPU	Yes	4.I.2, 4.I.4, 4.I.5, 4.I.7, 4.I.10, 4.I.11
	Agriculture	Yes	5.A.5, 5.A.6
	LULUCF	Yes	6.L.1, 6.L.3, 6.L.5, 6.L.6, 6.L.8, 6.L.9
	Waste	Yes	7.W.4
Threshold for reporting significant categories (para. 32 of the MPGs)	For categories reported as “NE” owing to insignificance, has information been reported showing that the likely level of emissions is below the threshold of significance?	No	7.W.4

Element	*Elements of information to be reported*	*Summary of information reported*	*ID#(s) for the area(s) of improvement identified*[a]
Methodologies, emission factors, parameters and activity data (paras. 39–40 and 53–56 of the MPGs)	Has information been reported on categories, gases, methodologies (including the rationale for selecting them), emission factors and activity data at a disaggregated level for the following sectors?		
	Energy	Partly	3.E.1, 3.E.2
	Has information been reported on international aviation and marine bunker fuel emissions as two separate entries and such emissions distinctly reported from national totals?	Yes	NA
	Has information been reported indicating how feedstocks and non-energy use of fuels have been accounted for in the inventory, under the energy or IPPU sector?	Yes	NA
	IPPU	Partly	4.I.3, 4.I.4, 4.I.8, 4.I.9
	Agriculture	Partly	5.A.1, 5.A.2, 5.A.3, 5.A.4
	LULUCF	Partly	6.L.4, 6.L.7
	Did the Party provide information on the approach taken to address emissions and subsequent removals from natural disturbances on managed land in a manner consistent with IPCC guidance, and indicate whether the estimates are included in national totals?	Partly	6.L.2
	Did the Party provide supplementary information on the approach to reporting emissions and removals from harvested wood products in accordance with IPCC guidance other than the production approach, and provide supplementary information on emissions and removals from	Partly	2.G.3

Element	*Elements of information to be reported*	*Summary of information reported*	*ID#(s) for the area(s) of improvement identified*[a]
	harvested wood products estimated using the production approach?		
	Waste	Partly	7.W.2, 7.W.3, 7.W.6, 7.W.8, 7.W.9

[a] See document FCCC/ETF/TERR.1/2024/CAN/Add.1. The areas of improvement referred to in this table comprise only those relating to recommendations in that document.

2. Information necessary to track progress in implementing and achieving the nationally determined contribution[8]

9. The TERT assessed the information reported in the BTR1 of Canada and identified an area of improvement relating to consistency with the MPGs, which is described in table 11 of the assessment tables referred to in paragraph 6 above and summarized in table 2.

Table 2
Information reported in Canada's submission

Topic	*ID#s for the area(s) of improvement identified*[a]
National circumstances and institutional arrangements (paras. 59–63 of the MPGs)	No areas of improvement were identified
Description of the NDC under Article 4 of the Paris Agreement, including updates (para. 64 of the MPGs)	No areas of improvement were identified
Information necessary to track progress in implementing and achieving the NDC under Article 4 of the Paris Agreement (paras. 65–79 of the MPGs)	No areas of improvement were identified
Mitigation PaMs, actions and plans related to implementing and achieving the NDC under Article 4 of the Paris Agreement (paras. 80–90 of the MPGs)	No areas of improvement were identified
Summary of GHG emissions and removals (para. 91 of the MPGs)	No areas of improvement were identified
Projections of GHG emissions and removals (paras. 92–102 of the MPGs)	No areas of improvement were identified

[a] See document FCCC/ETF/TERR.1/2024/CAN/Add.1. The areas of improvement referred to in this table comprise only those relating to recommendations in that document.

3. Financial, technology development and transfer, and capacity-building support provided[9]

10. Canada reported information on financial, technology development and transfer, and capacity-building support provided under Articles 9–11 of the Paris Agreement.

11. The TERT assessed the information reported in the BTR1 of Canada and identified areas of improvement relating to consistency with the MPGs, which are described in tables 15–17 and 19–20 of the assessment tables referred to in paragraph 6 above and summarized in table 3.

Table 3
Review of the consistency of the information on financial, technology development and transfer, and capacity-building support reported in Canada's submission with the modalities, procedures and guidelines

Topic	*ID#(s) for the area(s) of improvement identified*[a]
National circumstances and institutional arrangements (paras. 119–120 of the MPGs)	15.1
Underlying assumptions, definitions and methodologies (paras. 121–122 of the MPGs)	16.1
Information on financial support provided under Article 9 of the Paris Agreement (paras. 123–124 of the MPGs)	17.1, 17.2

[8] As per para. 150(b) of the MPGs.
[9] As per para. 150(c) of the MPGs.

Topic	*ID#(s) for the area(s) of improvement identified*[a]
Information on support for technology development and transfer provided under Article 10 of the Paris Agreement (paras. 126–127 of the MPGs)	19.1, 19.2
Information on capacity-building support provided under Article 11 of the Paris Agreement (paras. 128–129 of the MPGs)	20.1

[a] See document FCCC/ETF/TERR.1/2024/CAN/Add.1.

B. Consideration of the Party's implementation and achievement of its nationally determined contribution[10]

12. In considering Canada's progress in implementing and achieving its NDC, the TERT noted that the NDC[11] is a commitment to reduce economy-wide GHG emissions by at least 40–45 per cent below the 2005 (base year) emission level by 2030. The base-year emissions are the national total emissions for 2005 excluding LULUCF sector emissions. For the purpose of Canada's NDC, Canada's 2030 emissions will be its national total emissions excluding LULUCF sector emissions and including the LULUCF accounting contribution.

13. The indicator that Canada selected to track progress in implementing and achieving its NDC is described in table 4.

Table 4
Description of the indicator(s) selected by Canada to track progress in implementing and achieving its nationally determined contribution

NDC target	*Indicator*	*Description*
A GHG emission reduction of at least 40–45 per cent compared with the 2005 level by 2030	National GHG emissions	National total GHG emissions, excluding emissions from the LULUCF sector and including the LULUCF accounting contribution

Sources: Canada's BTR1 and CTF tables 1–3.

14. The TERT noted that the contribution of LULUCF to achieving the NDC is not included in the Party's base-year level but is included as the LULUCF accounting contribution in the target-year level and that Canada did not use ITMOs, A6.4ERs, CERs or units from cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement or the mechanism established by Article 6, paragraph 4, of the Paris Agreement towards the achievement of its NDC.

15. Table 5 summarizes information on progress in implementing the NDC based on the indicator national GHG emissions taking into account the type of Canada's NDC target, including quantitative values for the base year, implementation period, including the most recent year available, and target year, information on the contribution of LULUCF and use of ITMOs towards the implementation and achievement of the NDC, as applicable.

Table 5
Summary of information on Canada's progress in implementing and achieving its nationally determined contribution
(kt CO_2 eq)

	National GHG emissions excluding LULUCF	*Contribution of LULUCF, as applicable*	*ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable*	*Indicator adjusted for LULUCF accounting contribution and ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable*
NDC base year (2005) excluding emissions from LULUCF	761 491.62			
2021	698 441.12	–28 981.29	NA	669 459.83
2022	707 766.59	11 989.33	NA	719 755.92
Target level (2030)[a]				456 894.97

Sources: Canada's BTR1 and CTF table 4.

[10] As per para. 146(b) of the MPGs.

[11] The consideration of the Party's implementation and achievement of its NDC is in the context of the NDC submitted by Canada on 12 July 2021. The TERT noted that the Party submitted a new NDC on 12 February 2025.

[a] Target level corresponds to an unconditional NDC target.

16. According to the most recent information on national GHG emissions provided in CTF table 4, in 2022 Canada's national GHG emissions, including the LULUCF accounting contribution, were 719,755.92 kt CO_2 eq. The TERT noted that, in 2022, the accounting contribution of LULUCF was a net source of 11,989.33 kt CO_2 eq, while in 2021 it was a net sink of 28,981.29 kt CO_2 eq. The indicator is 5.5 per cent (41,735.70 kt CO_2 eq) below the emission level corresponding to the base-year level and 57.5 per cent (262,860.95 kt CO_2 eq) above the emission level corresponding to the target level in 2030.

17. Canada reported information on the actions and PaMs that support the implementation and achievement of its NDC. The TERT noted that PaMs reported by Canada in its BTR1 and included in this report reflect those in place at the time the BTR1 was published, and do not necessarily represent PaMs currently in place at the time of publication of this report. Table 6 provides a summary of the reported information on the key PaMs of Canada.

Table 6
Summary of information on key policies and measures reported by Canada

Sector	*Key PaMs*	*Estimate of mitigation impact in 2022 (kt CO_2 eq)*	*Estimate of mitigation impact in 2030 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	Price on carbon pollution	NE	NE
	Low Carbon Economy Fund	NE	4 900
	Infrastructure investments by Canada Infrastructure Bank	NE	NE
	Investment tax credit for carbon capture, utilization and storage	NE	NE
	Canada Growth Fund	NA	NE
	Net Zero Accelerator initiative under the Strategic Innovation Fund	NE	NE
Energy	Strengthened CH_4 regulations for oil and gas	4 000	20 000
	Energy Innovation Program	2 700	4 250
Energy supply and renewables	Smart Renewables and Electrification Pathways Program	24	4 672
Transport	Clean Fuel Regulations	NA	11 160
	Light-duty on-road vehicle emission regulations	2 800	24 300
	Heavy-duty on-road vehicle emission regulations	2 600	5 700
IPPU	HFC regulations	1 000	9 000
	Green Industrial Facilities and Manufacturing Program	NA	2 600
Agriculture	Agricultural Climate Solutions programme	NE	NE
	Sustainable Canadian Agricultural Partnership	NA	410
LULUCF	Nature Smart Climate Solutions Fund	NA	5 000
Waste	Regulation on CH_4 emissions from landfill	NA	8 000

Sources: Canada's BTR1 and CTF table 5, and information provided by the Party during the review.

18. The TERT noted that PaMs, actions and plans have started to have an impact on GHG emission reductions in various sectors. In the electricity generation sector, annual GHG emissions decreased significantly between 2005 and 2022, falling from 117 to 47 Mt, which indicates that mitigation PaMs such as coal phaseout, cleaner electricity generation and improved energy efficiency have reduced emissions. In heavy industry, annual GHG emissions decreased from 88 Mt in 2005 to 78 Mt in 2022, reflecting the impact of fuel-switching measures and modernization efforts. Regarding transportation, annual GHG emissions remained stable in 2005 and 2022 (156 Mt for both years), falling temporarily in 2020 owing to the impact of the coronavirus disease 2019 pandemic, which suggests that increasing demand for freight and passenger transport has counteracted the effects of PaMs.

In the buildings sector, annual GHG emissions increased from 85 Mt in 2005 to 89 Mt in 2022, indicating that the impact of mitigation actions was more than offset by the impacts of population growth and an increase in floor space over this period. Annual GHG emissions in the agriculture sector increased slightly between 2005 and 2022, growing from 66 to 70 Mt, owing to increased agricultural production and fertilizer use.

19. The TERT noted that Canada's national circumstances, including its vast territory, resource-intensive economy, growing yet dispersed population and economic growth, as well as extremes of temperature and weather, significantly influenced the trends in emissions and removals for all sectors, and are all relevant to the achievement of the Party's NDC. Canada's economic structure includes significant emission-intensive sectors, such as oil and gas, mining and heavy industry, which are responsible for a large portion of national GHG emissions. Canada has a low population density and dispersed population, with large distances between urban centres, increasing reliance on transportation, with mainly private vehicles used. The emission trends show that, while mitigation measures have reduced emissions in sectors such as electricity generation and heavy industry, other key drivers such as an increasing demand for energy, population and economic growth, and extreme weather events have counteracted the impact of mitigation action in sectors such as transportation, buildings and agriculture.

20. Canada reported projections for 2030–2040 under the WM scenario.[12] The WM scenario reported by the Party includes PaMs implemented and adopted until 2024. In addition to the WM scenario, Canada reported the WAM scenario. The projected emission levels are presented in table 7. The TERT noted that information on GHG emission projections was not used in considering Canada's progress in implementing its NDC.

Table 7
Summary of greenhouse gas emission projections for Canada

	GHG emissions (kt CO_2 eq/year)	*Change in relation to 2022 level (%)*	*Change in relation to 2020 level (%)*
Inventory data 2020	686 362.16	–3.0	NA
Inventory data 2022	707 767.56	NA	3.1
WM projections for 2030	625 900.00	–11.6	–8.8
WAM projections for 2030	542 900.00	–23.3	–20.9
WM projections for 2040	588 600.00	–16.8	–14.2
WAM projections for 2040	473 200.00	–33.1	–31.1

Sources: Canada's BTR1 and CTF tables 6–9.
Note: The projections are for GHG emissions without LULUCF and excluding indirect CO_2 emissions.

21. The TERT notes that 262,860.95 kt CO_2 eq need to be reduced to reach the target level compared to the level in the most recent reported year (2022). The TERT also notes that there are not yet enough data to sufficiently assess the Party's progress in implementing the NDC, as it is early in the implementation period (2021–2030). The TERT further notes that regular monitoring of emissions and the results of mitigation actions allows adjustments to be made as needed towards achieving the reduction of 262,860.95 kt CO_2 eq.

C. Consideration of the Party's support provided[13]

22. In its BTR1 Canada reported information on national circumstances and institutional arrangements relevant to reporting on the provision and mobilization of support. The Party reported information on the systems and processes used to identify, track and report on support provided; challenges and limitations; and efforts to enhance the comparability and accuracy of the information reported on financial support provided.

[12] Note that, as per para. 93 of the MPGs, projections shall not be used to assess progress towards the implementation and achievement of an NDC under Article 4 of the Paris Agreement unless the Party has identified a reported projection as its baseline.

[13] As per para. 146(c) of the MPGs.

23. Canada described its national circumstances and institutional arrangements relevant to the provision of technology development and transfer, and capacity-building support. The Party explained that such support is mainly provided through its climate finance support. Canada noted that, in 2023, the tracking of technology transfer and capacity-building support was improved through a Total Official Support for Sustainable Development survey, which requested specific information on whether projects support technology development and transfer and/or capacity-building.

24. Canada's BTR1 contains key information on underlying assumptions, methodologies and definitions used by the Party to identify and/or report information on financial support provided.

25. Canada's BTR1 contains key information on underlying assumptions, methodologies and definitions used by the Party to identify and/or report information on technology development and transfer, and capacity-building support provided. In its reporting on technology transfer, Canada applies the definition provided in an IPCC special report on methodological and technological issues in technology transfer, and in its reporting on capacity-building, it applies the definition of capacity-building set out in Article 11 of the Paris Agreement.

1. Financial support provided under Article 9 of the Paris Agreement

(a) Bilateral, regional and other channels

26. Canada provided financial support through bilateral, regional and other channels, focusing mainly on African countries, Asia and the Pacific, and Latin America and the Caribbean. The projects, programmes or activities that received financial support related to the clean energy transition, the phaseout of coal, and climate-smart agriculture and food systems. The majority of financial support provided through bilateral, regional and other channels was allocated to the following sectors: energy (6.1 per cent), transport (0.2 per cent), industry (7.3 per cent), agriculture (35.2 per cent), forestry (5.0 per cent), water and sanitation (2.9 per cent), cross-cutting (42.9 per cent) and other (0.4 per cent).

27. Table 8 summarizes information on financial support provided by the Party through bilateral, regional and other channels by type of support.

Table 8
Summary of financial support provided through bilateral, regional and other channels in 2021–2022 by Canada

	Amount (climate-specific) (face value – USD million)				*Share of total for bilateral, regional and other channels (%)*
Type of financial instrument	*Adaptation*	*Mitigation*	*Cross-cutting*	*Total*	
Grant	139.64	409.48	131.24	680.36	53.6
Concessional loan	151.53	236.79	147.73	536.05	42.3
Non-concessional loan	–	26.32	–	26.32	2.1
Equity	0.60	24.99	–	25.59	2.0
Total	**291.77**	**697.57**	**278.98**	**1 268. 32**	**100.0**
Share of total for bilateral, regional and other channels (%)	**23.0**	**55.0**	**22.0**	**–**	**–**

Sources: Canada's BTR1 and CTF table III.1.

(b) Multilateral channels

28. Canada reported the recipient for all multilateral disbursements as "global" in order to avoid potentially misrepresenting the destination of its climate finance flows. The contributions were made to financial institutions and specialized multilateral climate change funds, such as regional development banks, the Adaptation Fund, the GCF and the GEF, as well as to specialized United Nations bodies such as UNDP. Climate-specific financial

support provided through multilateral channels was allocated to the following sectors: agriculture (7.1 per cent) and cross-cutting (92.9 per cent).

29. Table 9 summarizes information on financial support provided by the Party through multilateral channels by type of support. Canada reported on funds disbursed to multilateral institutions (i.e. its inflow contributions).

Table 9
Summary of financial support provided through multilateral channels in 2021–2022 by Canada
(Millions of United States dollars)

	Climate-specific inflows (face value)			
Institution	*Adaptation*	*Mitigation*	*Cross-cutting*	*Total*
Adaptation Fund	15.36	–	–	15.36
African Development Bank	103.20	51.96	–	155.16
Asian Development Bank	3.26	7.60	–	10.86
GCF	71.49	95.02	37.15	203.65
GEF	11.30	12.91	18.56	42.77
Inter-American Development Bank	0.09	0.39	0.10	0.58
International Finance Corporation	0.54	62.44	0.12	63.10
Least Developed Countries Fund	26.92	–	7.86	34.78
UNDP	–	3.83	3.07	6.90
Other (Asian Infrastructure Investment Bank)	1.28	5.54	0.12	6.95
Other (Caribbean Development Bank)	9.02	0.47	0.09	9.57
Other (Food and Agriculture Organization of the United Nations)	0.40	0.09	1.07	1.56
Other (International Bank for Reconstruction and Development)	3.59	5.86	–	9.45
Other (International Development Association)	183.94	131.64	1.22	316.80
Other (International Fund for Agricultural Development)	13.48	1.29	–	14.77
Other (International Monetary Fund)	4.66	8.96	17.21	30.83
Other (Multilateral Fund for the Implementation of the Montreal Protocol)	–	15.34	–	15.34
Other (UNFCCC)	–	–	0.92	0.92
Total	**448.54**	**403.34**	**87.49**	**939.37**
Share of total (%)	**47.7**	**43.0**	**9.3**	**100.0**

Sources: Canada's BTR1 and CTF table III.2.

2. Technology development and transfer support provided under Article 10 of the Paris Agreement

30. Canada's support for technology development and transfer is provided mainly through its climate finance support, but support is also provided by various federal departments and agencies under their own mandates. Canada implemented measures or activities related to technology development and transfer, including activities undertaken by the public sector, that benefited developing country Parties. Canada's international assistance priorities provide a broad strategic framework for technology transfer, including in the area of environmental and climate action. Furthermore, the Party provided support at different stages of the technology cycle.

31. Canada provided support for the deployment and enhancement of the endogenous capacities and technologies of developing country Parties. Examples include the deployment of software applications, such as the Carbon Budget Model of the Canadian Forest Sector, which was used in Chile and Kenya.

32. Canada engaged in measures and activities related to technology innovation, including research, development and deployment, using a collaborative approach. The Party reported

on the knowledge generated from the support provided for technology development and transfer to developing country Parties. For example, Canada, in collaboration with UNDP and Environment and Climate Change Canada, is supporting Colombia, Mexico, Peru and Senegal in reducing HFC emissions and improving energy efficiency in refrigeration by providing low-GWP technologies and equipment, as well as expertise and training, and demonstrating innovative refrigeration systems.

33. Canada supported measures and activities related to technology development and transfer that focused on the deployment of software applications, including by deploying the Carbon Budget Model of the Canadian Forest Sector in Chile and using the Full Lands Integration Tool to develop Kenya's national carbon accounting system, and on the enhancement of early warning systems for fires in Argentina and Malaysia, and support for the phasedown of HFCs and energy efficiency improvements in the refrigeration sector in Colombia, Mexico, Peru and Senegal. Such measures and activities covered the following target sectors: energy (33.3 per cent) and forestry (66.7 per cent). The technology development and transfer support provided was equally split across mitigation, adaptation and cross-cutting (33.3 per cent each). The types of technology that received support include an early warning system for disasters, an information system for forest management and low-GWP technologies. For the reporting period 2021–2022, all measures or activities aimed at supporting technology development and transfer were reported as ongoing. The recipient entities for Canada's technology development and transfer support were operating at the national or global level.

3. Capacity-building support provided under Article 11 of the Paris Agreement

34. Canada provided capacity-building support to developing country Parties for mitigation, adaptation and cross-cutting needs. Canada's primary mechanism for enhancing the capacity of developing countries to address climate change involves support provided under its climate finance commitment, with all supported activities required to align with the climate finance results framework. Additional capacity-building support is delivered by various federal departments and agencies in accordance with their own mandates and programme priorities.

35. Canada's capacity-building support responded to the existing and emerging capacity-building needs, priorities and gaps of developing country Parties. The Party delivered some 80 per cent of its climate finance commitment through multilateral development banks, international financial institutions and multilateral partners (e.g. the GCF and the GEF), relying on their expertise in designing activities aligned with identified priorities. Key initiatives supported by Canada that address capacity gaps include the Climate Finance Access Network and the World Bank's Energy Sector Management Assistance Program. In its bilateral programming, an approach involving measurement, reporting and verification and climate governance was used to support countries in identifying NDC implementation gaps, with stakeholder workshops aimed at producing road maps to guide action plans, and monthly follow-ups that build trust and strengthen stakeholder relationships.

36. Canada's capacity-building efforts in developing countries actively engaged national and local stakeholders through training programmes, technical exchanges and community-level initiatives. Canada shared its expertise on climate change, and on energy efficiency in particular, through the International Energy Agency, provided strategic guidance as a member of the Advisory Board of the Climate Technology Centre and Network to support the work of the Climate Technology Centre and Network on the provision of capacity-building support for technology development and transfer to developing countries, and shared Canadian experience through the International Atomic Energy Agency framework on nuclear safety and regulatory standards.

37. Canada supported capacity-building measures or activities that focused mainly on strengthening institutional arrangements and building capacity in developing countries, including in relation to implementing nuclear safety regulations, improving national data management systems in partner countries in areas such as forest carbon accounting, and promoting stakeholder engagement. Most of the capacity-building measures or activities related to mitigation (44.4 per cent), followed by cross-cutting (33.3 per cent) and adaptation (22.2 per cent). For the reporting period 2021–2022, all capacity-building measures or

activities were reported as ongoing. The recipient entities for Canada's capacity-building support were operating at the national or global level. Examples of capacity-building support provided include support for a project focused on the Creole garden agroforestry system in Haiti, which supported the economic empowerment of women and the use of sustainable practices in the coffee and cocoa sectors, and support provided through the SmartDriver training programme to commercial drivers in Chile to help reduce emissions and fuel consumption.

D. Identification of areas of improvement[14]

38. During the technical expert review, the TERT identified areas of improvement in relation to Canada's implementation of Article 13 of the Paris Agreement, which are summarized in chapter II.A above and included in the assessment tables referred to in paragraph 6 above.

III. Conclusions and recommendations

39. The TERT conducted a technical expert review of the information reported in the BTR1, NID, CRTs and CTF tables of Canada in accordance with the MPGs.

40. The areas of improvement identified by the TERT on the basis of the review of the consistency of the information reported by Canada with the MPGs are summarized in chapter II.A above and included in the assessment tables referred to in paragraph 6 above.

41. The TERT notes that 262,860.95 kt CO_2 eq need to be reduced to reach the target level compared with the level in the most recent reported year (2022). The TERT also notes that there are not yet enough data to sufficiently assess the Party's progress in implementing the NDC, as it is early in the implementation period (2021–2030). The TERT further notes that regular monitoring of emissions and the results of mitigation actions allows adjustments to be made as needed towards achieving the reduction of 262,860.95 kt CO_2 eq.

42. The TERT notes that PaMs, actions and plans have started to have an impact on GHG emission reductions in various sectors. In the electricity generation sector, annual GHG emissions significantly decreased between 2005 and 2022, which indicates that mitigation PaMs such as coal phaseout, cleaner electricity generation and improved energy efficiency have reduced emissions. In heavy industry, annual GHG emissions decreased in the same period, reflecting the impact of fuel-switching measures and modernization efforts. Regarding transportation, annual GHG emissions remained stable in 2005 and 2022, falling temporarily in 2020 owing to the impact of the pandemic, which suggests that increasing demand for freight and passenger transport has counteracted PaMs. In the buildings sector, annual GHG emissions increased between 2005 and 2022, indicating that the impact of mitigation actions has been more than offset by the impacts of population growth and an increase in floor space. Annual GHG emissions in the agriculture sector increased slightly over the same period owing to increased agricultural production and fertilizer use. National circumstances, such as Canada's resource-intensive economy, growing yet dispersed population and economic growth, as well as extremes of temperature and weather, significantly influenced the trends in emissions and removals in all sectors.

43. Canada continued to provide financial support through bilateral, regional and other channels and through multilateral channels to developing countries. The financial support through bilateral, regional and other channels in 2021–2022 totalled USD 1,268.3 million. Similarly, climate-specific financial support through multilateral channels in 2021–2022 amounted to USD 939.37 million (inflows).

44. Canada continued to provide support for technology development and transfer, and capacity-building. Priority for technological support was given to projects and programmes in the energy and forestry sectors. Priority for capacity-building support was given to projects and programmes in the energy and forestry sectors and other sectors.

[14] As per para. 146(d) of the MPGs.

Annex

Documents and information used during the review

A. Reference documents

BTR1 of Canada. Available at https://unfccc.int/first-biennial-transparency-reports.

BTR1 CTF tables of Canada. Available at https://unfccc.int/first-biennial-transparency-reports.

CRTs of Canada. Available at https://unfccc.int/first-biennial-transparency-reports.

"Guidance for operationalizing the modalities, procedures and guidelines for the enhanced transparency framework referred to in Article 13 of the Paris Agreement". Decision 5/CMA.3. FCCC/PA/CMA/2021/10/Add.2. Available at https://unfccc.int/documents/460951.

IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendia, K Miwa, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/2006gl.

IPCC. 2014. *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*. T Hiraishi, T Krug, K Tanabe, et al. (eds.). Geneva: IPCC. Available at https://www.ipcc.ch/publication/2013-supplement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories-wetlands/.

IPCC. 2019. *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*, E Buendia, K Tanabe, et al. (eds.). Geneva: IPCC. Available at https://www.ipcc-nggip.iges.or.jp/public/2019rf/.

"Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement". Annex to decision 18/CMA.1. FCCC/PA/CMA/2018/3/Add.2. Available at https://unfccc.int/documents/193408.

NID of Canada. Available at https://unfccc.int/first-biennial-transparency-reports.

B. Additional information provided by the Party

Responses to questions during the review were received from Rebecca Hellam and Raphaëlle Pelland St-Pierre (Environment and Climate Change Canada), including additional material.