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Item 5 of the provisional agenda[1]

COUNTRY PROGRAMME DATA AND PROSPECTS FOR COMPLIANCE

Introduction

1. A total of 147 countries are currently classified as Article 5 (A5) Parties, including the Republic of Korea, Singapore, and the United Arab Emirates. These three countries[2] have been urged not to request funding from the Multilateral Fund for the phase-out of their consumption and production (where applicable) of controlled substances and, therefore, are not required to submit the mandatory progress report on the implementation of their country programme (CP).[3] However, data on the consumption and production of controlled substances from these three countries is included in some parts of the document to ensure a global analysis of Ozone-Depleting Substances (ODS) production and consumption trends.

2. Parties are encouraged to submit annually their Article 7 (A7) data by 30 June, and no later than 30 September (decision XV/15). In addition, A5 Parties are required to submit CP data eight weeks prior to the first meeting of the year of the Executive Committee, if possible, and no later than 1 May (decision 74/9(b)(iv)). Table 1 summarizes data reports submitted by A5 Parties between 2014 and 2022. As of 4 October 2023, all the countries that submitted requests for funding to the 93rd meeting have submitted 2022 CP data.

Table 1. A7 and CP data reports submitted by A5 Parties (as of 4 October 2023)

Data	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
A7	147	147	147	147	147	147	147	147	146	132
CP	145	144*	144	144	144	144	144	144	144	131**

* Excluding Croatia, which became a non-Article 5 country in 2014.
** Excluding two countries (Bangladesh and Morocco), which submitted data after 4 October 2023.

[1] UNEP/OzL.Pro/ExCom/93/1
[2] The aggregated HCFC baseline for compliance for the three countries amounts to 2,681.2 ODP tonnes. In addition, the Republic of Korea produces HCFC-22 with a baseline of 395.1 ODP tonnes.
[3] CP data reports represent the sole source of information on the sector distribution of controlled substances in A5 countries.

3. The present document consists of the following sections:

I. Status of and prospects for compliance of A5 countries: This section presents a summary of the status of licensing and quota systems, and the results of the analysis of the status of compliance with the final phase-out of CFCs, halons, carbon tetrachloride (CTC), methyl bromide (MB) and methyl chloroform (TCA), and the 2013 freeze, the 10 per cent reduction by 2015 and the 35 per cent reduction of HCFCs by 2020, in the consumption and production sectors. It assumes that the latest consumption reported under A7 or CP data reports has taken into account the phase-out from completed projects.[4] This section also provides data on HFCs under A7 or CP data reports.

II. A5 countries subject to decisions on compliance by the Parties

III. Analysis on the CP implementation reports for HCFCs[5] and HFCs:[6] Regarding HCFCs, this section presents an analysis on the data contained in CP data reports, including HCFC production versus consumption, sector distribution of HCFCs, and prices of controlled substances and alternative substances. Regarding HFCs, this section presents an analysis on consumption data contained in the 2022 CP data reports. Out of the 131 CP data reports for 2022 submitted, 110 reports contained HFC data.

IV. Issues related to CP implementation reports

V. Recommendation

I. Status of and prospects for compliance of A5 countries

I.1 Production and consumption

4. The complete phase-out of production and consumption of CFCs, halons, CTC for all A5 countries occurred on 1 January 2010, except for CFC consumption in metered-dose inhalers and CTC consumption in laboratory and analytical use. The complete phase-out of production and consumption of MB and TCA occurred on 1 January 2015, except for those countries where critical uses for MB were approved by the Parties. Therefore, Annex C Group I (HCFCs) substances and Annex F are the only substances under the Montreal Protocol where consumption and production are still allowed.

A. Production sector

5. MB is produced in one A5 country (China).[7] An MB production closure phase-out plan was approved providing for the country to produce at levels lower than those allowed under the Montreal

[4] As of December 2022, completed projects had phased out 290,493 ODP tonnes of consumption and 204,189 ODP tonnes of production. The completed projects were valued at US $3.17 billion out of an approved total of approximately US $3.59 billion.

[5] The Executive Committee requested the Secretariat to assess the HCFC compliance requirements for all A5 countries in the document Status reports and compliance, to serve as a guide for preparation of the business plan of the Multilateral Fund (decision 67/6(c)).

[6] At its 84th meeting, the Executive Committee *inter alia* approved the revised CP data report format to include Annex F substances noting that the revised format would be used starting in 2020 for 2019 CP data reporting (decision 84/7(c)). The revised format was subsequently updated at the 92nd meeting (decision 92/4(d)).

[7] The Democratic People's Republic of Korea reported production of MB only in 1991 and 1995.

Protocol.[8] In 2021, zero ODP tonnes of MB were produced.[9]

6. There are seven A5 countries that produced HCFCs. The levels of the three main HCFCs produced (i.e., HCFC-22, HCFC-141b, HCFC-142b) are shown in table 2. The aggregated latest production for controlled uses was 47.6 per cent below the aggregated production baseline.

Table 2. Production for controlled uses of the three main HCFCs (A7, ODP tonnes)

Country	2014	2015	2016	2017	2018	2019	2020	2021	2022	Baseline
HCFC-22										
Argentina	125.7	134.5	95.8	100.3	65.6	88.3	66.3	56.6	72.1	224.6
China	16,497.0	13,391.0	14,086.3	13,445.7	13,636.4	13,598.2	11,042.2	10,011.8	**	29,122.0*
Democratic People's Republic of Korea (the)	28.9	27.4	24.8	24.8	24.8	27.0	27.0	24.8	**	27.6
India	1,465.7	1,727.6	1,665.5	1,789.5	1,936.4	1,937.0	1,354.8	1,156.2	**	2,399.5
Mexico	223.5	160.9	166.8	190.1	183.8	134.8	56.7	138.4	217.4	697.0
Republic of Korea	364.7	348.9	240.3	305.6	289.9	271.5	254.3	221.0	199.6	395.1
Venezuela (Bolivarian Republic of)	86.1	37.2	14.3	15.0	1.9	0.0	0.0	0.0	0.0	123.1
Total HCFC-22	18,791.7	15,827.6	16,293.8	15,871.0	16,138.7	16,056.7	12,801.3	11,608.7	489.1	32,988.9
HCFC-141b										
HCFC-141b	9,560.2	7,246.5	7,278.2	7,076.8	6,321.1	6,101.6	4,623.3	3,545.1	**	*
HCFC-142b										
HCFC-142b	1,076.8	1,224.3	1,110.5	1,115.5	756.3	816.0	418.3	472.3	**	*
Total	**29,428.7**	**24,298.4**	**24,682.6**	**24,063.3**	**23,216.1**	**22,974.3**	**17,842.9**	**15,626.2**	**489.1**	**32,988.9**

* The HCFC production baseline is 29,122 ODP tonnes and includes all HCFCs produced by China, mainly HCFC-22, HCFC-141b and HCFC-142b, and to a lesser extent HCFC-123 and HCFC-124.
** As of 4 October 2023, A7 data for China, the Democratic People's Republic of Korea and India have not been submitted.

7. An HCFC production phase-out management plan (HPPMP) was approved for one country (China).[10]

8. One A5 country, the Democratic People's Republic of Korea, has reported 24.81 ODP tonnes of HCFC production for the year 2021, which is above the production target set in the plan of action in decision XXXII/6. The 70th meeting of the Implementation Committee requested the country, as a matter of urgency, to provide an explanation for the deviations, and to do so no later than 15 September 2023, and, if appropriate, to submit a revised plan of action to ensure its return to compliance with the control measures of the Montreal Protocol for HCFCs in 2023, for consideration by the Implementation Committee at its 71st meeting.[11]

B. Consumption sector

CFCs, halons, CTC, MB and TCA

9. All A5 countries have reported zero consumption of CFCs, halons and TCA in 2021 or 2022.

[8] The Agreement between the Government of China and the Executive Committee allows for the production of MB for QPS applications, feedstock and critical uses approved by the Parties (decision 47/54). The implementation of the China MB production sector was completed by 31 December 2021.
[9] As of 4 October 2023, A7 data for 2022 for China has not been submitted.
[10] Stage II of the HPPMP for China was approved at the 86th meeting. The Agreement was approved at the 87th meeting.
[11] Recommendation 70/2 of document UNEP/OzL.Pro/ImpCom/70/5

10. Only two A5 countries have reported CTC consumption for laboratory and analytical-use (China (132.5 ODP tonnes in 2021) and Republic of Korea (0.1 ODP tonnes in 2022)). Although the consumption was above the 2010 Montreal Protocol compliance target, the Parties have extended the global laboratory and analytical-use exemption indefinitely beyond 2021, without prejudice to the Parties deciding to review the exemption at a future meeting (decision XXXI/5).

11. Only two A5 countries[12] have reported MB consumption in 2022, as shown in table 3. The Parties approved consumption of MB for critical uses for Argentina.

Table 3. MB consumption reported by A5 countries (ODP tonnes)

Country	Source	Year of latest consumption	Baseline	Latest consumption
Argentina*	A7	2022	411.3	5.70
South Africa**	A7	2022	602.7	7.30

***** Allowable level of consumption of 5.76 ODP tonnes for 2022 per decision XXXIII/6.

** Zero consumption was reported under 2022 CP data. Pending clarification from the Ozone Secretariat.

12. Thirty-seven A5 countries reported MB consumption and two A5 countries reported MB production for quarantine and pre-shipment (QPS) applications under A7 data, as shown in Annex I to the present document. The consumption for these applications is not eligible for funding.

HCFCs

13. A total of 147 A5 countries have an established HCFC baseline for compliance, with an aggregated latest consumption level of 16,025 ODP tonnes (259,298 metric tonnes), as shown in table 4. The three main HCFCs are: HCFC-22 (75.4 per cent of the total consumption measured in ODP tonnes), HCFC-141b (22.4 per cent) and HCFC-142b (1.9 per cent).

Table 4. Baseline and latest (2021 or 2022) HCFC consumption data by type of HCFC (A7 data)

HCFC	Baseline		Consumption*		% of baseline
	Metric tonnes	ODP tonnes	Metric tonnes	ODP tonnes	
HCFC-123	2,337.0	46.7	1,795.9	35.9	76.8
HCFC-124	1,270.7	28.0	426.3	9.4	33.6
HCFC-141b	107,871.6	11,865.9	32,612.0	3,587.3	30.2
HCFC-142b	33,195.5	2,157.7	4,695.1	305.2	14.1
HCFC-22	394,504.8	21,697.8	219,768.8	12,087.3	55.7
HCFC-225	30.4	2.1	0.0	0.0	0.0
HCFC-225ca	70.0	1.8	0.0	0.0	0.0
HCFC-225cb	20.9	0.7	0.0	0.0	0.0
Total	**539,300.9**	**35,800.6**	**259,298.1**	**16,025.1**	**44.8**

* Including Republic of Korea (794.9 ODP tonnes), Singapore (60.4 ODP tonnes) and the United Arab Emirates (358.5 ODP tonnes).

14. One A5 country, the Democratic People's Republic of Korea, has reported HCFC consumption above the 2020 Montreal Protocol compliance target. The country has reported 2021 consumption of 58.03 ODP tonnes, which is above the consumption target set in the plan of action in decision XXXII/6. The 70th meeting of the Implementation Committee requested the country, as a matter of urgency, to provide an explanation for the deviations, and to do so no later than 15 September 2023, and, if appropriate, to

[12] A total of 100 A5 countries received financial assistance from the Multilateral Fund to phase out consumption and production (two countries) of MB.

submit a revised plan of action to ensure its return to compliance with the control measures of the Montreal Protocol for HCFCs in 2023, for consideration by the Implementation Committee at its 71st meeting.[13]

HCFC phase-out management plans

15. All 145 countries have received financial assistance for the preparation of project proposals to phase out HCFCs. As a result, as of the 92nd meeting, the Executive Committee has approved stage I of the HPMPs for 145 countries,[14] stage II for 108 countries and stage III for 12 countries, at a total value of US $1.22 billion (approved in principle) of which US $1.02 billion has been disbursed to address compliance with the Montreal Protocol control levels as follows:

(a) Twenty-one countries (14 low-volume-consuming (LVC) and seven non-LVC countries), to address compliance up to 2020;

(b) Thirty-three countries to address compliance up to 2025 or 2027; and

(c) Eighty-seven countries[15] to completely phase out HCFCs between 2020 and 2031.

16. Annex II to the present document includes an analysis of the latest reported HCFC consumption data and control measures addressed by approved HPMPs.

Remaining HCFCs

17. Implementation of approved stages I, II and III of the HPMPs will result in the phase-out of approximately 77.1 per cent of the starting point for aggregate reduction of HCFC consumption and 90.7 per cent of the consumption of HCFC-141b contained in imported pre-blended polyols. Table 5 shows the aggregate remaining HCFC consumption[16] by type of HCFCs in A5 countries that are receiving assistance from the Fund.

Table 5. Total remaining HCFC consumption by substance (ODP tonnes)*

HCFC	Baseline	Starting point	Approved	Remaining	% of approved
HCFC-123	31.90	30.21	19.31	10.87	63.9
HCFC-124	26.42	26.14	15.26	10.90	58.4
HCFC-141	0.94	0.94	0.94	0.00	100.0
HCFC-141b	10,668.24	10,676.35	10,583.24	92.84	99.1
HCFC-142b	2,000.80	2,016.80	1,518.89	496.16	75.3
HCFC-21	0.74	0.74	0.74	0.00	100.0

[13] Recommendation 70/2 of document UNEP/OzL.Pro/ImpCom/70/5

[14] For various reasons, stage I of the HPMPs for four countries (Antigua and Barbuda, the Central African Republic, Haiti and Yemen) were cancelled at the 82nd and 91st meetings.

[15] The Bahamas, Barbados, Belize, Benin, Bhutan, Bolivia (Plurinational State of), Bosnia and Herzegovina, Botswana, Brunei Darussalam, Burkina Faso, Cabo Verde, Cambodia, Chad, Chile, Colombia, the Cook Islands, Costa Rica, Cuba, the Democratic Republic of the Congo, the Dominican Republic, Croatia (which became a non-Article 5 country in 2014, and completely phased out HCFCs by 2015), Ecuador, El Salvador, Eritrea, Eswatini (the Kingdom of), Ethiopia, Fiji, the Gambia, Georgia, Ghana, Grenada, Guatemala, Guyana, Honduras, India, Indonesia, Jamaica, Kenya, Kiribati, Kyrgyzstan, the Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Maldives, the Marshall Islands, Mauritius, Micronesia (Federated States of), Mongolia, Montenegro, Namibia, Nauru, Nepal, Nicaragua, the Niger, Niue, North Macedonia, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the Republic of Moldova, Rwanda, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Seychelles, Sierra Leone, Solomon Islands, South Africa, Sri Lanka, the Sudan, Togo, Tonga, Trinidad and Tobago, Türkiye, Tuvalu, Uganda, the United Republic of Tanzania, Uruguay, Vanuatu, Venezuela (Bolivarian Republic of), Zambia and Zimbabwe.

[16] The remaining HCFC consumption eligible for funding depends on the starting point for aggregate reductions in HCFC consumption selected by each A5 country in their HPMP.

HCFC	Baseline	Starting point	Approved	Remaining	% of approved
HCFC-22	20,424.65	19,851.34	12,989.31	6,861.33	65.4
HCFC-225	2.82	2.82	1.45	1.37	51.4
HCFC-225ca	0.42	0.42	0.00	0.42	0.0
HCFC-225cb	0.68	0.68	0.00	0.68	0.0
Total	**33,157.61**	**32,606.44**	**25,129.14**	**7,474.57**	77.1
HCFC-141b polyol**	0.00	657.00	596.11	54.33	90.7

* As of the 92nd meeting.
** HCFC-141b contained in imported pre-blended polyols.

HFCs

18. Of the 147 A5 countries, 121 countries have reported HFC A7 data in 2020, 2021 or 2022. One hundred and eight of the 121 Article 5 countries have ratified the Kigali Amendment. Ninety of the 121 countries have provided data for these three years (2020, 2021 and 2022) and have established HFC baselines. Annex III to the present document includes information on 2020, 2021 and 2022 HFC A7 consumption data for these 121 countries and HFC baselines (measured in CO_2-equivalent) for 90 A5 countries.

I.2 Licensing and quota systems

19. All A5 countries have established licensing systems pursuant to Article 4B of the Montreal Protocol and had confirmed that an enforceable national system capable of ensuring the country's compliance with the Montreal Protocol HCFC phase-out schedule is in place. Ninety-one (55 LVC and 36 non-LVC countries) of the 112 A5 countries[17] that have ratified the Kigali Amendment[18] have established an HFC licensing system.

II. A5 countries subject to decisions on compliance by the Parties

20. At their Thirty-Fourth Meeting, the Parties did not find any Article 5 countries in non-compliance with their obligations under the Montreal Protocol. As mentioned in paragraphs 8 and 14, the 71st meeting of the Implementation Committee will consider the explanation provided by the Democratic People's Republic of Korea for the deviations from its commitment as set out in decision XXXII/6 and, if appropriate, a revised plan of action to ensure its return to compliance with the Protocol's control measures for HCFCs in 2023.[19]

III. Analysis on the CP implementation reports for HCFCs and HFCs

Key messages from the CP data analysis

- In 2022, the three sectors with the largest consumption of HCFCs (measured in ODP tonnes) were first the refrigeration servicing, second the foam sector and third, the refrigeration manufacturing sector.
- Significant decrease in consumption and production of HCFCs in 2020, 2021 and 2022; this reduction is due to a combination of the control measure for HCFCs in 2020, HCFC phase-out project implementation and challenges affecting business activities as a result of the COVID-19 pandemic.
- As the phase-out of HCFCs in the foam and refrigeration manufacturing sectors progresses, the refrigeration servicing sector becomes more prevalent, though the consumption is decreasing over time.

[17] Of the 112 countries that have ratified Kigali Amendment, four countries have not reported HFC data.
[18] As of 3 October 2023
[19] Recommendation 70/2 of document UNEP/OzL.Pro/ImpCom/70/5

- 110 A5 countries (71 LVC and 39 non-LVC countries) reported HFC CP data for 2022.
- HFC-32, HFC-125, HFC-134a, HFC-227ea, R-404A, R-507A and R-410A account for 93.2% of the total consumption in CO_2-equivalent tonnes; refrigeration servicing accounts for 33.1%, refrigeration manufacturing – others 22.4%, and refrigeration manufacturing – AC 21.8%.
- Most consumed HFCs including blends in 2022 were R-404A, HFC-134a, R-410A, R-507A, R-407C and R-407A for LVC countries, and R-410A, HFC-134a, R-404A, R-507A, HFC-227ea, and HFC-32 for non-LVC countries. There is an increase in consumption of HFC blends like R-417A, R-417B, R-437A that are used as retrofits due to the decrease in availability of HCFC-22 for servicing, higher costs of HCFC-22 and substitution of high-global-warming-potential HFCs in commercial refrigeration.

III.1 HCFC data

A. HCFC production versus consumption

21. Since 2012, the reported levels of the three main HCFCs produced in A5 countries have been above the levels of consumption except for HCFC-142b in 2022, as shown in table 6. The data reported shows a significant decrease in consumption and production in 2020, 2021 and 2022 and this is primarily due to the reduction required to achieve the 2020 controlled targets, implementation of HCFC phase-out activities and the challenges related to the COVID-19 pandemic. The production and consumption in 2022 have experienced growth at an overall level mainly due to post-COVID-19 recovery of business activities.

Table 6. HCFC production versus consumption of the three main HCFCs (ODP tonnes)

HCFC	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Production											
HCFC-22	23,552.4	18,769.0	19,816.3	16,782.6	16,191.2	15,725.9	16,061.3	15,959.3	12,583.5	11,405.5	12,390.5
HCFC-141b	12,884.4	9,583.6	9,560.2	7,246.5	7,278.2	7,076.8	6,321.1	6,101.6	4,623.3	3,545.1	3,850.4
HCFC-142b	1,440.4	1,102.0	1,076.8	1,224.3	1,110.5	1,115.5	756.3	816.0	418.3	472.3	126.7
Consumption											
HCFC-22	22,581.7	17,817.0	17,399.4	15,289.4	15,497.6	15,182.9	15,197.6	14,968.5	11,977.6	11,310.1	11,733.2
HCFC-141b	11,735.9	8,981.3	8,348.3	6,772.5	6,384.9	6,312.2	5,736.0	5,534.3	3,701.1	3,135.2	3,402.6
HCFC-142b	1,439.4	1,014.5	761.0	890.8	726.2	774.3	430.1	486.7	182.9	319.3	131.7
Production – consumption											
HCFC-22	970.6	952.0	2,416.9	1,493.2	693.6	543.0	863.7	990.7	605.9	95.4	657.3
HCFC-141b	1,148.5	602.3	1,212.0	474.0	893.3	764.6	585.1	567.3	922.2	410.0	447.8
HCFC-142b	1.0	87.5	315.8	333.5	384.4	341.2	326.2	329.3	235.4	153.0	(5.0)

B. Sector distribution of HCFC consumption

22. Table 7 presents the sector distribution of aggregated HCFC consumption for the period 2012 to 2022, where countries are grouped as follows: China, as the largest consumer (and producer) of HCFCs; the 14 largest consuming countries (excluding China);[20] and all other countries.

23. In 2022, the three sectors with the largest consumption of HCFCs (measured in ODP tonnes) were the refrigeration servicing (43.7 per cent of the total), foam (28.6 per cent) and the refrigeration manufacturing sectors (24.7 per cent). As the phase-out of HCFCs in the foam and refrigeration manufacturing sectors progresses, the refrigeration servicing sector becomes more relevant, though the consumption is decreasing over time.

[20] Argentina, Brazil, Egypt, India, Indonesia, Iran (Islamic Republic of), Kuwait, Malaysia, Mexico, Nigeria, Saudi Arabia, South Africa, Thailand and Türkiye.

Table 7. Sector distribution of HCFC consumption by group of countries (ODP tonnes)

Sector	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2022 (% of total)
China												
Aerosol	95.4	137.8	186.2	180.4	189.4		154.0	163.7				0.0
Foam	9,031.0	7,473.9	7,404.0	5,522.7	5,872.8	6,220.8	5,679.4	5,669.2	4,241.9	3,822.8	4,075.0	26.5
Firefighting												0.0
Refrigeration manufacturing	6,586.7	6,014.3	5,602.0	4,951.7	5,107.1	5,106.2	4,856.9	4,746.9	3,149.4	3,040.0	3,177.5	20.6
Refrigeration servicing	4,857.8	3,103.8	3,161.7	2,412.0	2,638.3	2,881.4	3,316.8	3,258.3	2,984.4	2,990.4	2,984.8	19.4
Solvent	524.1	466.0	484.8	418.5	413.4	397.0	375.1	385.0	308.0	275.0	340.0	2.2
Total for China	**21,095.0**	**17,195.8**	**16,838.7**	**13,485.3**	**14,221.1**	**14,605.4**	**14,382.3**	**14,223.2**	**10,683.7**	**10,128.2**	**10,577.3**	**68.7**
14 largest A5 consuming countries*												
Aerosol	75.0	123.8	19.3	87.3	42.4	5.5	26.9	7.8	1.1	2.6	3.0	0.0
Foam	3,867.4	2,645.6	2,153.0	2,077.0	1,572.7	1,501.9	1,275.5	1,058.7	335.2	271.1	193.7	1.3
Firefighting	6.0	5.4	4.0	4.0	4.2	4.9	2.3	2.9	2.0	2.4	33.0	0.2
Refrigeration manufacturing	3,142.9	2,233.7	1,932.1	1,862.6	1,473.8	1,291.6	1,238.6	1,010.0	784.4	596.4	586.4	3.8
Refrigeration servicing	4,213.6	3,029.3	3,008.3	3,148.6	3,262.9	2,805.0	2,615.0	2,836.1	2,539.3	2,443.6	2,661.2	17.3
Solvent	76.3	43.3	38.5	37.1	29.6	53.9	57.5	63.7	75.1	53.1	90.9	0.6
Total 14 largest consuming countries	**11,381.2**	**8,081.1**	**7,155.3**	**7,216.7**	**6,385.6**	**5,662.8**	**5,215.8**	**4,979.1**	**3,737.0**	**3,369.1**	**3,568.1**	**23.2**
129 remaining A5 countries												
Aerosol	0.2	0.7	0.4	0.3	0.1	0.5						0.0
Foam	1,258.8	963.2	916.0	869.0	826.9	731.2	497.5	476.3	355.2	182.9	125.7	0.8
Firefighting	13.3	8.6	11.2	14.0	11.1	7.7	3.2	4.4	1.4	1.9	0.7	0.0
Refrigeration manufacturing	400.7	314.3	290.2	248.9	236.1	217.3	179.0	180.1	98.3	73.4	41.9	0.3
Refrigeration servicing	2,372.2	1,995.8	2,011.0	1,861.3	1,695.9	1,608.3	1,557.4	1,524.0	1,312.0	1,190.5	1,073.5	7.0
Solvent	34.1	5.2	3.5	4.9	5.1	3.1	3.2	3.3	0.3	0.7	3.1	0.0
Total 129 remaining A5 countries	**4,079.3**	**3,287.7**	**3,232.3**	**2,998.3**	**2,775.3**	**2,568.1**	**2,240.2**	**2,188.1**	**1,767.2**	**1,449.3**	**1,245.0**	**8.1**
All A5 countries												
Aerosol	170.5	262.2	205.9	268.0	232.0	6.0	180.9	171.5	1.1	2.6	3.0	0.0
Foam	14,157.2	11,082.6	10,473.0	8,468.7	8,272.4	8,453.8	7,452.5	7,204.2	4,932.3	4,276.8	4,394.4	28.6
Firefighting	19.4	14.1	15.2	18.0	15.2	12.6	5.6	7.3	3.4	4.3	33.7	0.2
Refrigeration manufacturing	10,130.3	8,562.2	7,824.3	7,063.2	6,817.0	6,615.1	6,274.4	5,937.1	4,032.2	3,709.8	3,805.8	24.7
Refrigeration servicing	11,443.6	8,128.9	8,181.0	7,422.0	7,597.1	7,294.7	7,489.2	7,618.4	6,835.6	6,624.4	6,719.4	43.7
Solvent	634.5	514.5	526.9	460.4	448.2	454.0	435.8	451.9	383.4	328.8	434.1	2.8
Total all A5 countries	**36,555.5**	**28,564.6**	**27,226.3**	**23,700.4**	**23,382.0**	**22,836.3**	**21,838.4**	**21,390.4**	**16,188.0**	**14,946.6**	**15,390.5**	**100.0**
% of total for China	57.7	60.2	61.8	56.9	60.8	64.0	65.9	66.5	66.0	67.8	68.7	
% of total for 14 largest A5 consuming countries	31.1	28.3	26.3	30.4	27.3	24.8	23.9	23.3	23.1	22.5	23.2	
% of total for 129 remaining A5 countries	11.2	11.5	11.9	12.7	11.9	11.2	10.3	10.2	10.9	9.7	8.1	

*Argentina, Brazil, Egypt, India, Indonesia, Iran (Islamic Republic of), Kuwait, Malaysia, Mexico, Nigeria, Saudi Arabia, South Africa, Thailand and Türkiye.

24. The sector distribution of the three main HCFCs consumed in A5 countries is presented in table 8. The analysis shows a sustained reduction in the overall consumption of these substances.

Table 8. Sector distribution of the main HCFCs consumed in A5 countries (ODP tonnes)

Sector	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
HCFC-22											
Aerosol	124.9	116.4	129.5	134.2	132.0	0.3****	102.3	91.1		0.1	0.0
Foam*	2,079.2	1,805.6	1,731.9	1,177.3	1,518.5	1,687.2	1,682.3	1,616.4	1,328.6	1,203.5	1,335.6
Firefighting	0.1										30.5
Refrigeration manufacturing	9,474.9	8,012.7	7,518.0	6,747.4	6,590.5	6,330.0	5,999.3	5,760.2	3,892.1	3,654.7	3,751.4
Refrigeration servicing	10,873.6	7,882.3	8,019.8	7,229.8	7,256.1	7,164.9	7,413.4	7,500.4	6,756.6	6,451.7	6,615.5
Solvent	29.0		0.3	0.7	0.6	0.4	0.4	0.4	0.3	0.1	0.1
Total HCFC-22	**22,581.7**	**17,817.0**	**17,399.4**	**15,289.4**	**15,497.6**	**15,182.9**	**15,197.6**	**14,968.5**	**11,977.6**	**11,310.1**	**11,733.2**
HCFC-141b											
Aerosol	45.4	145.8	76.4	132.0	99.9	5.7****	78.7	80.4	1.1	2.5	2.9
Foam	10,355.0	7,712.9	7,394.0	5,828.1	5,522.9	5,547.5	4,943.4	4,816.1	3,168.2	2,740.1	2,963.1
Firefighting	9.3	6.7	7.6	9.3	5.2	6.3	1.8	3.0	0.7		
Refrigeration manufacturing**	629.6	529.6	282.9	294.2	204.8	264.9	255.8	159.7	125.6	40.0	39.2
Refrigeration servicing	96.4	75.7	66.5	54.6	108.8	37.1	26.4	28.0	22.7	23.9	28.3
Solvent	600.2	510.6	521.0	454.4	443.3	450.8	430.0	447.2	382.8	328.7	369.0
Total HCFC-141b	**11,735.9**	**8,981.3**	**8,348.3**	**6,772.5**	**6,384.9**	**6,312.2**	**5,736.0**	**5,534.3**	**3,701.1**	**3,135.2**	**3,402.6**
HCFC-142b											
Aerosol	0.2	0.0	0.0	1.8	0.0	0.0					
Foam***	990.2	863.7	686.2	773.8	608.3	701.0	398.5	412.3	134.7	179.0	3.3
Firefighting											
Refrigeration manufacturing	7.8	6.5	8.0	7.2	6.9	6.1	5.9	5.9	4.2	4.2	4.3
Refrigeration servicing	441.3	144.4	66.7	107.9	110.9	67.3	25.7	68.5	44.0	136.1	59.1
Solvent											65.0
Total HCFC-142b	**1,439.4**	**1,014.5**	**761.0**	**890.8**	**726.2**	**774.3**	**430.1**	**486.7**	**182.9**	**319.3**	**131.7**
Other HCFCs	798.5	751.7	717.6	747.8	773.3	566.8	474.7	400.9	326.4	182.1	123.0
Total	**36,555.5**	**28,564.6**	**27,226.3**	**23,700.4**	**23,382.0**	**22,836.3**	**21,838.4**	**21,390.4**	**16,188.0**	**14,946.6**	**15,390.5**

* Used as co-blowing agent.
** Used for insulation of refrigeration equipment.
*** Used for the production of extruded polystyrene foam.
**** The steep reduction between 2016 and 2017 is due to reduction of consumption in one country (China).

III.2 HFC data

25. At its 84th meeting, the Executive Committee *inter alia* approved the revised CP data format to include Annex F (HFC) substances noting that the revised format would be used starting in 2020 for 2019 CP data reporting, with a trial period from 2020 to 2022 (decision 84/7(c)). At its 90th meeting, the Executive Committee approved the updated revised format of Section B of CP data reports, on the understanding that the data required in the column that related to the manufacture of blends under Section B of CP data reports would be reported on a voluntary basis (decision 90/3(c)). Subsequently, at its 92nd meeting, the Executive Committee approved the updated revised format of Section B of CP data reports, and requested the Secretariat to provide additional information, to the extent possible, on the uses of HFC-23 reported in the column "other" in future documents on country programme data and prospects for compliance (decision 92/4(d) and (e)(ii)).

26. The present document presents an analysis of the HFC consumption reported by the 110 A5 countries under their CP data reports for 2022. Of the 131 countries which submitted 2022 CP data as of 4 October 2023, 103 countries have ratified the Kigali Amendment. Only 99 of the 103 countries have

provided HFC data in their 2022 CP reports on time for this analysis. In addition, 11 countries that have not ratified the Kigali Amendment have provided HFC data in their 2022 CP reports.

27. The sector distribution of aggregated HFC consumption for the 110 countries that have submitted 2022 CP data is presented in table 9. Of these 110 countries, 71 are LVC countries and they account for 78.9 per cent of the aggregated HCFC baseline for all LVC countries; 39 are non-LVC countries and they account for 79.7 per cent of the HCFC baselines for all non-LVC countries. The HFC data reported by LVC and non-LVC countries account for 2.6 per cent and 97.4 per cent, respectively, of the total HFC consumption data reported for the year 2022.

Table 9. Sector distribution of HFCs consumed in 2022 (metric tonnes)

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total***
				Other	AC	Total*				
HFC-125	0.4		4,528.7		5,879.0		1,752.4		0.8	16,161.8
HFC-134							441.6			441.6
HFC-134a	5,121.7	1,691.7		31,697.7	30,636.7	3,799.8	83,982.7		1,350.1	177,527.6
HFC-143a				121.1	1,875.7		1,058.3		1,524.6	4,579.7
HFC-152									1.9	1.9
HFC-152a	5,792.7	3,115.1		31.1	6.2		4,162.6	2,500.0	190.0	18,884.3
HFC-227ea	372.1	20.2	30,592.0				1.9		35.1	31,341.6
HFC-236ea									112.0	112.0
HFC-236fa		0.5	492.9			0.5	0.9		0.0	567.3
HFC-245ca									11.0	11.0
HFC-245fa		8,752.2	0.1****	420.0			37.7		1,011.6	11,286.4
HFC-32				9,500.0	82,893.2	2.4	13,131.9		63.0	121,763.6
HFC-365mfc		917.7						60.0	7.2	1,023.3
HFC-43-10mee								54.8	2.1	57.5
HFC-23 (use)**			3.9	6.6			62.4	0.2	1,464.1	1,531.7
R-401A							2.1			2.1
R-404A				12,415.4	573.1	1,526.8	23,944.8		366.3	40,492.5
R-406A							5.8			5.8
R-407A					7.4	0.1	555.8			570.1
R-407C				443.2	470.4	124.9	3,646.5		22.9	5,701.3
R-407F						14.7	53.2		0.8	70.2
R-407H						0.0	13.6			13.7
R-408A				1.2			0.5			1.7
R-410A				43,402.8	63,353.3	1,119.0	60,801.0		414.6	173,351.7
R-417A					0.1	1.7	319.2		2.7	323.7
R-417B							186.5			186.5
R-419B							0.6			0.6
R-422A							13.4			13.4
R-422B							5.2			5.2
R-422D							109.2			109.2
R-426A										20.0
R-427A							6.4			6.4
R-434A					0.3		0.1			0.4
R-437A							109.4			109.4
R-438A						0.1	291.0		4.8	495.9
R-442A				1.0			2.3			3.4
R-444B					2.3					2.3
R-448A				10.0		1.2	126.0		0.9	138.1
R-449A				2.5		0.6	207.6		0.2	210.9
R-449C							4.5			4.5
R-451A							0.5			0.5
R-452A				40.0		0.0	19.5			59.5
R-453A				2.0	2.0		2.9			7.0
R-454A				0.1						0.1
R-454B				0.4	0.2					0.7
R-454C				2.9	0.6				0.2	3.9
R-455A									1.3	2.1

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total***
				Other	AC	Total*				
R-467A							34.2			34.2
R-507A				19,613.4		360.8	6,856.0		1,037.5	28,548.9
R-507C							20.4			20.4
R-508B				0.8		0.1	19.4			18.9
R-513A				36.4	0.1		2.4		0.0	39.6
R-515B									0.2	0.2
HFC-227ea in imported pre-blended polyol		18.6								18.6
HFC-245fa in imported pre-blended polyol		226.5								226.5
HFC-365mfc in imported pre-blended polyol		773.8				0.8				774.6
Other HFCs	4.8	1,051.2	0.4	1.0			123.1	572.2	59.7	1,927.6
Total	**11,291.8**	**16,567.4**	**35,618.0**	**117,749.5**	**185,700.4**	**6,953.5**	**202,115.8**	**3,187.1**	**7,685.7**	**638,813.3**
LVC	**157.5**	**335.7**	**47.8**	**53.0**	**6.2**	**251.2**	**15,699.9**	**13.2**	**98.1**	**16,663.8**
Non-LVC	**11,134.3**	**16,231.7**	**35,570.2**	**117,696.5**	**185,694.2**	**6,702.3**	**186,415.9**	**3,173.9**	**7,587.7**	**622,149.5**

* If break-down of consumption in manufacturing is not available, information is provided in column "Total".
** HFC-23 is used as a pure substance and in R-508B blend of which HFC-23 is one component.
*** Sectoral breakdown columns may not add up to Total because some countries only reported total and no sectoral breakdown.
**** Consumption was incorrectly reported in fire fighting instead of foam.

28. In 2022, the five sectors with the largest consumption of HFCs (measured in metric tonnes) were the refrigeration servicing (31.6 per cent), refrigeration manufacturing – air-conditioning (AC) (29.1 per cent of the total), refrigeration manufacturing – others (18.4 per cent), fire fighting (5.6 per cent) and foam (2.6 per cent).

29. The sector distribution of aggregated HFC consumption in CO_2-equivalent is presented in table 10. HFC-32, HFC-125, HFC-134a, HFC-227ea, R-404A, R-507A and R-410A account for 93.2 per cent of the total consumption in CO_2-equivalent; refrigeration servicing, refrigeration manufacturing – others and refrigeration manufacturing – AC, account for 33.1 percent, 22.4 per cent and 21.8 per cent of the total consumption, respectively.

Table 10. Sector distribution of HFCs consumed in 2022 ('000 tons CO_2-equivalent)

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total***
				Other	AC	Total*				
HFC-125	2		15,850		20,576		6,133		3	56,566
HFC-134							486			486
HFC-134a	7,324	2,419		45,328	43,811	5,434	120,095		1,931	253,864
HFC-143a				541	8,384		4,731		6,815	20,471
HFC-152									0	0
HFC-152a	718	386		4	1		516	310	24	2,342
HFC-227ea	1,198	65	98,506				6		113	100,920
HFC-236cb										0
HFC-236ea									153	153
HFC-236fa		5	4,835			5	9			5,565
HFC-245ca									8	8
HFC-245fa		9,015	0	433			39		1,042	11,625
HFC-32				6,413	55,953	2	8,864		43	82,190
HFC-365mfc		729						48	6	812
HFC-43-10mee								89	3	93
HFC-23 (use)**			57	97			924	2	21,669	22,669
R-401A							2			2
R-404A				48,688	2,247	5,987	93,902		1,437	158,796
R-406A							11			11
R-407A					16	0	1,171			1,201

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total***
				Other	AC	Total*				
R-407C				786	834	222	6,470		41	10,113
R-407F						27	97		1	128
R-407H						0	20			20
R-408A				4			1			5
R-410A				90,603	132,250	2,336	126,922		865	361,872
R-417A					0	4	749		6	759
R-417B							564			564
R-419B							1			1
R-422A							42			42
R-422B							13			13
R-422D							298			298
R-426A										30
R-427A							14			14
R-434A					1		0			1
R-437A							198			198
R-438A						0	659		11	1,123
R-442A				2			4			6
R-444B					1					1
R-448A				14		2	175		1	191
R-449A				4		1	290		0	294
R-449C							6			6
R-451A							0			0
R-452A				86			42			127
R-453A				4	4		5			12
R-454A										0
R-454B				0	0					0
R-454C				0	0					1
R-455A									0	0
R-467A							46			46
R-507A				78,159		1,438	27,321		4,134	113,768
R-507C							81			81
R-508B				6		1	132			128
R-513A				23	0		1			25
R-515B									0	0
HFC-227ea in imported pre-blended polyol		60								60
HFC-245fa in imported pre-blended polyol		233								233
HFC-365mfc in imported pre-blended polyol		614				1				615
Other HFCs	5	718		0			66	552	6	1,474
Total	**9,247**	**14,244**	**119,250**	**271,193**	**264,078**	**15,458**	**401,110**	**1,000**	**38,312**	**1,210,029**

* If break-down of consumption in manufacturing is not available, information is provided in column "Total".
** HFC-23 is used as a pure substance and in R-508B blend of which HFC-23 is one component.
*** Sectoral breakdown columns may not add up to "Total" because some countries only reported total and no sectoral breakdown.

30. In 2022, in tonnes CO_2-equivalent terms, the most consumed HFCs including blends were R-404A (35.4 per cent of the total), HFC-134a (27.3 per cent), R-410A (18.9 per cent), R-507A (6.2 per cent), R-407C (5.3 per cent) and R-407A (2.8 per cent) for LVC countries, and R-410A (30.2 per cent of the total), HFC-134a (20.8 per cent), R-404A (12.5 per cent), R-507A (9.5 per cent), HFC-227ea (8.6 per cent), and HFC-32 (7.0 per cent) for non-LVC countries.

31. In addition, 21 countries (seven LVC and 14 non-LVC countries) reported a total consumption of 1,537.51 metric tonnes of HFC-23 used in the fire fighting, refrigeration manufacturing – others, refrigeration servicing, solvent, and other sectors. These countries are Argentina, Armenia, Brazil, Chile,

China, Ecuador, El Salvador, Indonesia, Malaysia, Maldives, Mauritius, Mexico, Namibia, Pakistan, Panama, Peru, the Philippines, Serbia, Seychelles, Türkiye and Viet Nam.

32. Pursuant to decision 92/4(e)(ii), the Secretariat requested information from two countries that had submitted HFC-23 (use) in "others"; as of date, information on details of use of HFC-23 in the countries is not fully available.

33. Five countries (Argentina, China, India, the Democratic People's Republic of Korea and Mexico) have an obligation to report 2022 data on HFC-23 production and generation under the Kigali Amendment. The amount of HFC-23 emissions generated, reported by Argentina, China, India, and Mexico in 2022 is 17.31 mt, 637.39 mt, 0.00 mt, and 31.89 mt respectively. As of date, CP data for the year 2022 for the Democratic People's Republic of Korea has not yet been submitted.

III.3 Prices of HCFCs, HFCs and alternatives

34. The average prices of HCFCs, HFCs and alternatives reported by A5 countries since 2012 are summarized in table 11.[21] The average prices provided are mainly from retailers and suppliers, which can include taxes and transportation costs. However, the price data in project proposals is freight on board (FOB)[22] that is usually obtained from importers.

Table 11. Average price of HCFCs, HFCs and alternatives[23]

Substance	Average price (US $/kg)*											Range (US $/kg)	Countries (2022)**
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
HCFC-22	10.06	9.24	10.08	10.07	9.25	10.18	10.24	9.64	10.54	11.02	10.76	2.09 (China) to 45.00 (Turkmenistan)	108
HCFC-141b	6.73	6.65	7.77	7.08	10.00	9.40	10.99	8.23	12.78	8.66	8.98	2.84 (China) to 32.08 (Belize)	15
R-600a	20.49	20.20	18.02	15.23	15.98	15.80	16.03	16.72	18.30	19.05	19.41	2.24 (China) to 149.32 (the Cook Islands)	85
R-290	15.60	14.38	21.26	19.08	16.13	16.48	15.92	21.80	23.85	21.17	22.38	1.30 (Dominica) to 191.65 (Saint Vincent and the Grenadines)	70
HFC-134a	14.96	13.65	13.30	14.26	12.83	13.94	12.35	12.31	12.71	13.66	13.51	3.17 (China) to 65.00 (Niue)	112
R-404A	18.71	15.41	15.11	15.42	15.32	15.97	14.77	13.76	14.28	16.01	15.68	4.18 (Brazil) to 52.00 (Turkmenistan)	114
R-407C	19.04	16.06	15.19	13.97	12.71	13.94	13.71	13.02	13.78	15.44	14.36	3.93 (Brazil) to 50.00 (Turkmenistan)	86
R-410A	19.91	16.05	15.28	14.61	16.44	15.47	14.78	14.50	14.68	16.33	15.03	3.73 (China) to 60.00 (Cabo Verde)	111
R-507A	15.84	13.59	12.21	11.65	11.76	13.33	13.07	12.99	13.58	16.36	15.03	4.21 (Brazil) to 47.00 (Mozambique)	56

* All zero entries were excluded.

** Number of A5 countries that reported prices in 2022.

[21] Several of the CP data reports submitted by A5 countries contain price data for both controlled substances and alternative substances. This information is provided on voluntary basis.

[22] Decision 68/4(b)(iv) requested Governments to report, on a voluntary basis, the average import FOB price for each controlled substance and substitute in the revised CP format.

[23] At its 79th meeting, the Executive Committee requested the Secretariat to include in the document on the Overview of issues identified during project review (issued at each meeting) a summary of the prices of the controlled substances and the alternatives to be phased in, as communicated by enterprises requesting funding in any new project proposals, including clarification of any differences between those and the prices reported in the CP data reports (decision 79/4(c)).

IV. Issues related to CP implementation reports

IV.1 Timely submission of CP data reports

35. In reviewing the timely submission of the CP data reports, the Secretariat noted that, as shown in table 12 there is a slight decrease in the overall submission rate when compared with that of 2021. The Secretariat noted the efforts made by implementing agencies in following up on the submission of outstanding CP data reports, and keeping the Secretariat informed on progress on a regular basis.

Table 12. Monthly rates of submission of CP data reports (as at 4 October 2023)

Month	2015		2016		2017		2018		2019		2020		2021		2022	
	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*
January	1	0.69			3	2.08									2	1.39
February	5	4.17	9	6.25	1	2.78	7	4.86	1	0.69	2	1.39	1	0.69	6	5.56
March	33	27.08	9	12.50	8	8.33	14	14.58	9	6.94	11	9.03	20	14.58	11	13.19
April	27	45.83	49	46.53	60	50.00	64	59.03	63	50.69	51	44.44	60	56.25	52	49.31
May	22	61.11	26	64.58	39	77.08	30	79.86	29	70.83	42	73.61	27	75.00	44	79.86
June	14	70.83	10	71.53	15	87.50	4	82.64	4	73.61	7	78.47	6	79.17	5	83.33
July	8	76.39	7	76.39	3	89.58	2	84.03	8	79.17	4	81.25	2	80.56	3	85.42
August	5	79.86	2	77.78	7	94.44	3	86.11	5	82.64	4	84.03	5	84.03	3	87.50
September	8	85.42	19	90.97	4	97.22	6	90.28	10	89.58	6	88.19	5	87.50	4	90.28
October	8	90.97	7	95.83	1	97.92	10	97.22	2	90.97	8	93.75	6	91.67	1**	90.97
November	1	91.67	2	97.22	1	98.61	1	97.92	3	93.06	0	93.75	4	94.44		
December							1	98.61	8	98.61	0	93.75	7	99.31		
After Dec.	12	100.00	4	100.00	2	100.00	2	100.00	2	100.00	9	100.00	1	100.00		
Total	**144**		**144**		**144**		**144**		**144**		**144**		**144**		**131**	
Outstanding	**0**		**0**		**0**		**0**		**0**		**0**		**0**		**13**	

* No: Number of A5 countries reporting. (%): Cumulative reporting.

** Submission as of 4 October 2023. Submissions after this date are not included in the analysis (Bangladesh and Morocco).

36. The Executive Committee may wish to request the Secretariat to send a letter to the Governments of Afghanistan, Angola, Botswana, the Central African Republic, the Democratic People's Republic of Korea, the Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Haiti, Sri Lanka and the United Republic of Tanzania regarding the outstanding CP data reports for 2022, urging the submission of those reports as soon as possible, as delays affect the ability of the Secretariat to have comprehensive data on consumption and production levels of controlled substances.

Data discrepancies between CP data reports and A7 data

37. In line with decision 92/4(c), 2021 data discrepancies between CP and Article 7 data for all countries have been resolved.

38. The review of the 2022 ODS import data reported under A7 and CP reports revealed potential data discrepancies, as shown in table 13.

Table 13. Differences between 2022 A7 and CP ODS consumption data (ODP tonnes)

Country	ODS	Agency for IS	A7 data	CP data	Difference	HCFC-141b polyol*	Remarks
Albania	HCFC	UNEP	2.9	8.8	5.8	0.0	Issue being clarified with UNEP pending its response.
Costa Rica	HCFC	UNDP	3.8	3.9	0.1	0.0	Issue being clarified with UNDP pending its response
Dominican Republic (the)	HCFC	UNEP	27.1	28.1	1.0	0.0	Issue being clarified with UNEP pending its response.

Country	ODS	Agency for IS	A7 data	CP data	Difference	HCFC-141b polyol*	Remarks
Gabon	HCFC	UNEP	7.4	0.6	-6.8	0.0	Issue being clarified with UNEP pending its response.
Guinea	HCFC	UNEP	1.2	1.4	0.2	0.0	Issue being clarified with UNEP pending its response.
North Macedonia	HCFC	UNIDO	0.1	0.0	-0.1	0.0	Issue being clarified with UNIDO pending its response.
Saudi Arabia	HCFC	UNEP	876.0	877.7	1.7	0.0	Issue being clarified with UNEP pending its response.
Somalia	HCFC	UNEP	0.0	10.2	10.2	1.5	Issue being clarified with UNEP pending its response.
South Africa	MB	UNIDO	7.3	0.0	-7.3		Issue being clarified with UNIDO pending its response.
Thailand	HCFC	World Bank	293.1	295.3	2.2	2.9	Issue being clarified with the World Bank pending its response.
Togo	HCFC	UNEP	6.7	6.4	-0.3	0.0	Issue being clarified with UNEP pending its response.
Zimbabwe	HCFC	UNEP	3.8	4.4	0.6	0.0	Issue being clarified with UNEP pending its response.

***** HCFC-141b contained in imported pre-blended polyols.

39. The Executive Committee may wish to request relevant implementing agencies to continue assisting the respective governments listed in table 13 in clarifying the discrepancies between CP data and A7 data.

40. Regarding HFC data reconciliation, the Secretariat has collaborated with the Ozone Secretariat in identifying data discrepancies for data reported for the years 2019 to 2022. Based on the analysis of HFC data submitted under Article 7 and CP, the Secretariats wrote to the agencies responsible for implementing the institutional strengthening projects for the countries concerned to assist them in clarifying these discrepancies. This reconciliation process is also being explained to Article 5 countries during the Compliance Assistance Programme regional network meetings.

V. Recommendation

41. The Executive Committee may wish:

(a) To note the information on country programme (CP) data and prospects for compliance contained in document UNEP/OzL.Pro/ExCom/93/8, and that, as at 4 October 2023, 131 countries had submitted 2022 CP data, two had submitted after 4 October 2023 and 11 countries had not done so;

(b) [Further to note that an additional [??] countries had submitted 2022 CP data after the issuance of document UNEP/OzL.Pro/ExCom/93/8;]

(c) To request:

(i) Relevant implementing agencies to continue assisting the respective governments in clarifying the discrepancies between their CP data and Article 7 data for 2022 as indicated in table 13 of document UNEP/OzL.Pro/ExCom/93/8 and to report back no later than the 94th meeting; and

(ii) The Secretariat to send letters to the Governments of [Afghanistan, Angola, Botswana, Central African Republic, the Democratic People's Republic of Korea, the Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Haiti, Sri Lanka and the United Republic of Tanzania] regarding the outstanding CP data reports for 2022, urging them to submit those reports as soon as possible.

Annex I

MB CONSUMPTION AND PRODUCTION FOR QPS APPLICATIONS

Country	Year of latest consumption	Latest consumption (ODP tonnes)
Consumption		
Argentina	2022	26.9
Bahrain	2022	7.9
Brazil	2022	33.3
Chile	2022	30.8
China	2021	441.1
Costa Rica	2022	4.7
Dominican Republic (the)	2022	9.0
Egypt	2022	171.6
El Salvador	2022	119.2
Ethiopia	2021	7.7
Fiji	2022	11.7
Honduras	2022	9.6
India	2021	932.0
Iran (Islamic Republic of)	2022	13.2
Jamaica	2022	2.9
Jordan	2022	4.8
Malaysia	2022	70.0
Mexico	2022	155.9
Morocco	2022	6.0
Myanmar	2022	27.0
Nicaragua	2022	21.5
Nigeria	2022	7.5
Pakistan	2022	336.3
Papua New Guinea	2022	0.3
Peru	2022	1.8
Philippines (the)	2022	17.6
Saudi Arabia	2022	9.0
Singapore	2022	33.6
South Africa	2022	19.2
Sri Lanka	2021	21.2
Syrian Arab Republic	2022	3.0
Thailand	2022	94.6
Türkiye	2022	40.5
United Arab Emirates (the)	2022	25.8
Uruguay	2022	85.4
Vanuatu	2022	0.4
Viet Nam	2022	258.9
Total consumption		**3,061.9**
Production		
China	2021	581.8
India	2021	2,138.5
Total production		**2,720.3**

Annex II

HCFC ANALYSIS*

Country	Source	Year of latest consumption	Baseline (ODP tonnes)	Latest consumption (ODP tonnes)	% over freeze	% over 10% reduction	% over 35% reduction	Control addressed by HPMPs
Afghanistan	CP	2021	23.6	3.3	0	0	0	35% by 2020 and 67.5% by 2025
Albania	A7	2022	6.0	2.9	0	0	0	35% by 2020 and 67.5% by 2025
Algeria	A7	2022	62.1	38.6	0	0	0	20% by 2017
Angola	A7	2021	16.0	6.9	0	0	0	10% by 2015 and 67.5% by 2025
Antigua and Barbuda	CP	2022	0.3	0.0	0	0	0	HPMP cancelled
Argentina	A7	2022	400.7	223.5	0	0	0	17.5% by 2017 and 50% by 2024
Armenia	A7	2022	7.0	1.4	0	0	0	10% by 2015 and 66.6% by 2020
Bahamas (the)	A7	2022	4.8	0.6	0	0	0	35% by 2020 and 100% by 2030
Bahrain	A7	2022	51.9	25.5	0	0	0	35% by 2020 and 73.5% by 2025
Bangladesh	A7	2022	72.6	46.9	0	0	0	30% by 2018 and 67.5% by 2025
Barbados	A7	2022	3.7	1.1	0	0	0	35% by 2020 and 100% by 2030
Belize	A7	2022	2.8	0.6	0	0	0	35% by 2020 and 100% by 2030
Benin	A7	2022	23.8	10.9	0	0	0	35% by 2020 and 100% by 2030
Bhutan	A7	2022	0.3	0.0	0	0	0	100% by 2025
Bolivia (Plurinational State of)	A7	2022	6.1	1.4	0	0	0	35% by 2020 and 100% by 2030
Bosnia and Herzegovina	A7	2022	4.7	0.0	0	0	0	35% by 2020 and 100% by 2026
Botswana	A7	2022	11.0	2.7	0	0	0	35% by 2020 and 100% by 2030
Brazil	A7	2022	1,327.3	584.1	0	0	0	10% by 2015 and 45% by 2021
Brunei Darussalam	A7	2022	6.1	3.5	0	0	0	35% by 2020 and 100% by 2030
Burkina Faso	A7	2022	28.9	5.3	0	0	0	35% by 2020 and 100% by 2030
Burundi	A7	2022	7.2	0.8	0	0	0	35% by 2020
Cabo Verde	A7	2022	1.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Cambodia	A7	2022	15.0	3.2	0	0	0	100% by 2035
Cameroon	A7	2022	88.8	25.3	0	0	0	20% by 2017 and 75% by 2025
Central African Republic (the)	A7	2022	12.0	6.2	0	0	0	HPMP cancelled
Chad	A7	2022	16.1	9.9	0	0	0	35% by 2020 and 100% by 2030

Country	Source	Year of latest consumption	Baseline (ODP tonnes)	Latest consumption (ODP tonnes)	% over freeze	% over 10% reduction	% over 35% reduction	Control addressed by HPMPs
Chile	A7	2022	87.5	18.4	0	0	0	10% by 2015, 65% by 2021 and 100% by 2030
China	CP	2022	19,269.0	10,577.3	0	0	0	10% by 2015 and 76% by 2026
Colombia	A7	2022	225.6	17.9	0	0	0	10% by 2015, 65% by 2021 and 100% by 2030
Comoros (the)	A7	2022	0.1	0.0	0	0	0	35% by 2020
Congo (the)	A7	2022	10.1	5.6	0	0	0	35% by 2020
Cook Islands (the)	A7	2022	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Costa Rica	A7	2022	14.1	3.8	0	0	0	35% by 2020 and 97.5% by 2030
Cote d'Ivoire	A7	2022	63.8	33.0	0	0	0	35% by 2020
Cuba	A7	2022	16.9	1.4	0	0	0	35% by 2020 and 100% by 2030
Democratic People's Republic of Korea (the)**	A7	2021	78.0	58.0	0	0	14	15% by 2018
Democratic Republic of the Congo (the)	A7	2022	66.2	1.0	0	0	0	10% by 2017 and 100% by 2030
Djibouti	A7	2021	0.7	0.3	0	0	0	35% by 2020
Dominica	CP	2022	0.4	0.0	0	0	0	35% by 2020
Dominican Republic (the)	A7	2022	51.2	27.1	0	0	0	10% by 2015, 40% by 2020 and 100% by 2030
Ecuador	A7	2022	23.5	9.2	0	0	0	35% by 2020 and 100% by 2030
Egypt	A7	2022	386.3	179.7	0	0	0	25% by 2018 and 70% by 2025
El Salvador	A7	2022	11.7	3.5	0	0	0	35% by 2020 and 100% by 2030
Equatorial Guinea	A7	2022	6.3	0.6	0	0	0	35% by 2020
Eritrea	A7	2022	1.1	0.6	0	0	0	35% by 2020 and 100% by 2030
Eswatini (the Kingdom of)	A7	2022	1.7	0.6	0	0	0	35% by 2020 and 100% by 2030
Ethiopia	CP	2022	5.5	3.2	0	0	0	35% by 2020 and 100% by 2030
Fiji	A7	2022	5.7	0.8	0	0	0	35% by 2020 and 100% by 2030
Gabon	A7	2022	30.2	7.4	0	0	0	35% by 2020
Gambia (the)	A7	2022	1.5	0.2	0	0	0	35% by 2020 and 100% by 2030
Georgia	A7	2022	5.3	1.0	0	0	0	35% by 2020 and 100% by 2030
Ghana	A7	2022	57.3	16.1	0	0	0	35% by 2020 and 100% by 2030
Grenada	A7	2022	0.8	0.1	0	0	0	35% by 2020 and 100% by 2030
Guatemala	A7	2022	8.3	2.1	0	0	0	35% by 2020 and 100% by 2030
Guinea	A7	2022	22.6	1.2	0	0	0	35% by 2020

Country	Source	Year of latest consumption	Baseline (ODP tonnes)	Latest consumption (ODP tonnes)	% over freeze	% over 10% reduction	% over 35% reduction	Control addressed by HPMPs
Guinea Bissau	A7	2022	2.8	0.8	0	0	0	35% by 2020
Guyana	A7	2022	1.8	0.6	0	0	0	10% by 2015 and 100% by 2030
Haiti	A7	2022	3.6	2.0	0	0	0	HPMP cancelled
Honduras	A7	2022	19.9	7.0	0	0	0	35% by 2020 and 100% by 2030
India	CP	2022	1,608.2	345.6	0	0	0	10% by 2015, 60% by 2023 and 100% by 2030
Indonesia	CP	2022	403.9	137.8	0	0	0	20% by 2018, 55% by 2023 and 100% by 2030
Iran (Islamic Republic of)	A7	2022	380.5	156.9	0	0	0	10% by 2015 and 75% by 2023
Iraq	A7	2022	108.4	66.4	0	0	0	13.82% by 2019 and 69% by 2025
Jamaica	A7	2022	16.3	2.8	0	0	0	35% by 2020 and 100% by 2030
Jordan	A7	2022	83.0	14.4	0	0	0	20% by 2017 and 50% by 2022
Kenya	A7	2022	52.2	3.0	0	0	0	21.1% by 2017 and 100% by 2030
Kiribati	A7	2022	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Kuwait	A7	2022	418.6	180.6	0	0	0	39.2% by 2020 and 67.5% by 2025
Kyrgyzstan	A7	2022	4.1	0.0	0	0	0	10% by 2015, 97.5% by 2020 and 100% by 2025
Lao People's Democratic Republic (the)	CP	2022	2.3	1.4	0	0	0	35% by 2020 and 100% by 2030
Lebanon	A7	2022	73.5	25.6	0	0	0	18% by 2017 and 75% by 2024
Lesotho	A7	2022	3.5	0.4	0	0	0	35% by 2020 and 100% by 2030
Liberia	A7	2022	5.3	0.8	0	0	0	35% by 2020 and 100% by 2030
Libya***	A7	2022	118.4	73.0	0	0	0	10% by 2020 and 80.5% by 2027
Madagascar	A7	2022	16.6	9.4	0	0	0	35% by 2020 and 100% by 2030
Malawi	A7	2022	10.8	2.5	0	0	0	35% by 2020 and 100% by 2030
Malaysia	A7	2022	515.8	187.1	0	0	0	15% by 2016 and 42.9% by 2022
Maldives	A7	2022	4.6	0.1	0	0	0	100% by 2020
Mali	A7	2022	15.0	6.1	0	0	0	35% by 2020
Marshall Islands (the)	A7	2022	0.2	0.0	0	0	0	35% by 2020 and 100% by 2030
Mauritania	A7	2022	20.5	13.0	0	0	0	67.5% by 2025
Mauritius	A7	2022	8.0	1.8	0	0	0	100% by 2030
Mexico	A7	2022	1,148.8	208.7	0	0	0	30% by 2018 and 67.5% by 2023

Country	Source	Year of latest consumption	Baseline (ODP tonnes)	Latest consumption (ODP tonnes)	% over freeze	% over 10% reduction	% over 35% reduction	Control addressed by HPMPs
Micronesia (Federated States of)	A7	2022	0.2	0.1	0	0	0	35% by 2020 and 100% by 2030
Mongolia	A7	2022	1.4	0.1	0	0	0	35% by 2020 and 100% by 2030
Montenegro	A7	2022	0.8	0.0	0	0	0	35% by 2020 and 100% by 2025
Morocco	A7	2022	51.4	19.8	0	0	0	20% by 2020 and 67.5% by 2025
Mozambique	A7	2022	8.7	2.2	0	0	0	35% by 2020
Myanmar	A7	2022	4.3	2.5	0	0	0	35% by 2020
Namibia	A7	2022	8.4	0.4	0	0	0	100% by 2025
Nauru	A7	2022	0.0	0.0	0	0	0	35% by 2020 and 100% by 2030
Nepal	CP	2022	1.1	0.4	0	0	0	35% by 2020 and 100% by 2030
Nicaragua	A7	2022	6.8	1.6	0	0	0	35% by 2020 and 100% by 2030
Niger (the)	A7	2022	16.0	7.5	0	0	0	35% by 2020 and 100% by 2030
Nigeria	A7	2022	344.9	115.8	0	0	0	10% by 2015, 51.35% by 2023 and 67.5% by 2025
Niue	A7	2022	0.0	0.0	0	0	0	35% by 2020 and 100% by 2030
North Macedonia	A7	2022	1.8	0.1	0	0	0	35% by 2020 and 100% by 2028
Oman	A7	2022	31.5	12.8	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Pakistan	A7	2022	248.1	119.1	0	0	0	10% by 2015, 50% by 2020 and 100% by 2030
Palau	A7	2022	0.2	0.0	0	0	0	35% by 2020 and 100% by 2030
Panama	A7	2022	24.8	10.1	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Papua New Guinea	A7	2022	3.3	0.9	0	0	0	100% by 2025
Paraguay	A7	2022	18.0	9.8	0	0	0	35% by 2020 and 100% by 2030
Peru	A7	2022	26.9	12.1	0	0	0	10% by 2015 and 67.5% by 2025
Philippines (the)	A7	2022	162.0	69.7	0	0	0	10% by 2015 and 50% by 2021
Qatar	A7	2022	86.9	56.4	0	0	0	20% by 2015 and 67.5% by 2026
Republic of Korea (the)	A7	2022	1,908.0	794.9	0	0	0	
Republic of Moldova (the)	A7	2022	1.0	0.3	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Rwanda	A7	2022	4.1	1.3	0	0	0	35% by 2020 and 100% by 2030
Saint Kitts and Nevis	A7	2022	0.5	0.1	0	0	0	35% by 2020

Country	Source	Year of latest consumption	Baseline (ODP tonnes)	Latest consumption (ODP tonnes)	% over freeze	% over 10% reduction	% over 35% reduction	Control addressed by HPMPs
Saint Lucia	A7	2022	1.1	0.3	0	0	0	35% by 2020 and 100% by 2030
Saint Vincent and the Grenadines	A7	2022	0.3	0.0	0	0	0	100% by 2025
Samoa	A7	2022	0.3	0.0	0	0	0	35% by 2020 and 100% by 2030
Sao Tome and Principe	A7	2022	2.2	0.1	0	0	0	35% by 2020
Saudi Arabia	A7	2022	1,468.7	876.0	0	0	0	40% by 2020
Senegal	A7	2022	36.2	10.7	0	0	0	35% by 2020 and 81.1% by 2025
Serbia	A7	2022	8.4	4.5	0	0	0	35% by 2020 and 67.5% by 2025
Seychelles	A7	2022	1.4	0.0	0	0	0	100% by 2025
Sierra Leone	A7	2022	1.7	0.6	0	0	0	35% by 2020 and 100% by 2030
Singapore	A7	2022	216.1	60.4	0	0	0	
Solomon Islands	A7	2022	2.0	0.1	0	0	0	35% by 2020 and 100% by 2030
Somalia	A7	2022	45.1	0.0	0	0	0	35% by 2020
South Africa	A7	2022	369.7	73.8	0	0	0	35% by 2020 and 100% by 2030
South Sudan	A7	2022	4.1	1.2	0	0	0	35% by 2024
Sri Lanka	A7	2021	13.9	8.6	0	0	0	35% by 2020 and 100% by 2030
Sudan (the)	CP	2022	52.7	8.3	0	0	0	30% by 2017, 75% by 2020 and 100% by 2030
Suriname	A7	2022	2.0	0.1	0	0	0	35% by 2020
Syrian Arab Republic	A7	2022	135.0	56.1	0	0	0	67.5% by 2025
Thailand	A7	2022	927.6	293.1	0	0	0	15% by 2018 and 61.8% by 2023
Timor Leste	A7	2022	0.5	0.1	0	0	0	10% by 2015 and 78% by 2025
Togo	A7	2022	20.0	6.7	0	0	0	35% by 2020 and 100% by 2030
Tonga	A7	2022	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Trinidad and Tobago	A7	2022	46.0	12.8	0	0	0	35% by 2020 and 100% by 2030
Tunisia	A7	2022	40.7	20.7	0	0	0	15% by 2020 and 67.5% by 2025
Türkiye	A7	2022	551.5	2.6	0	0	0	100% by 2025
Turkmenistan	A7	2022	6.8	4.0	0	0	0	35% by 2020 and 67.5% by 2025
Tuvalu	A7	2022	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Uganda	A7	2022	0.2	0.1	0	0	0	35% by 2020 and 100% by 2030
United Arab Emirates (the)	A7	2022	557.1	358.5	0	0	0	
United Republic of Tanzania (the)	A7	2021	1.7	0.9	0	0	0	35% by 2020 and 100% by 2030

Country	Source	Year of latest consumption	Baseline (ODP tonnes)	Latest consumption (ODP tonnes)	% over freeze	% over 10% reduction	% over 35% reduction	Control addressed by HPMPs
Uruguay	A7	2022	23.4	12.8	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Vanuatu	A7	2022	0.3	0.0	0	0	0	35% by 2020 and 100% by 2030
Venezuela (Bolivarian Republic of)	A7	2022	207.0	6.6	0	0	0	10% by 2015 and 100% by 2027
Viet Nam	A7	2022	221.2	139.0	0	0	0	10% by 2015 and 35% by 2022
Yemen	A7	2022	158.2	93.1	0	0	0	HPMP cancelled
Zambia	A7	2022	5.0	2.1	0	0	0	35% by 2020 and 100% by 2030
Zimbabwe	A7	2022	17.8	3.8	0	0	0	35% by 2020 and 100% by 2030

(*) Excluding the Republic of Korea, Singapore, and the United Arab Emirates which do not request assistance from the Multilateral Fund for their phase-out of controlled substances. They are included in the table above.
(**) The Democratic People's Republic of Korea’s latest consumption is above the consumption set in the plan of action in decision XXXII/6.
(***) Libya’s latest consumption is below the consumption set in the plan of action in decision XXVII/11.

Annex III

HFC DATA IN CO_2-EQUIVALENT TONNES

Country	Ratified Kigali Amendment	Baseline	2020	2021	2022	2022 as percentage of baseline
Afghanistan						
Albania	Yes	883,849	748,541	704,715	816,384	92
Algeria						
Angola	Yes		3,812,357	757,864		
Antigua and Barbuda						
Argentina	Yes	19,219,484	12,190,682	8,933,937	16,648,586	87
Armenia	Yes	475,254	195,790	317,041	465,778	98
Bahamas (the)	Yes					
Bahrain						
Bangladesh	Yes		4,048,769	4,292,556	4,490,020	
Barbados	Yes	295,426	341,967	180,981	125,780	43
Belize	Yes	502,268	73,601	1,137,920	121,648	24
Benin	Yes	1,763,273	1,253,696	1,279,095	1,230,484	70
Bhutan	Yes	13,105	2,876	7,941	8,667	66
Bolivia (Plurinational State of)	Yes	677,884	546,645	410,996	736,368	109
Bosnia and Herzegovina	Yes	1,066,653	1,039,114	599,128	1,340,919	126
Botswana	Yes	389,992	173,589	173,589	116,757	30
Brazil	Yes	79,503,644	39,896,041	50,519,115	89,756,651	113
Brunei Darussalam			305,400	280,755		
Burkina Faso	Yes	1,049,523	509,029	384,485	401,625	38
Burundi	Yes	207,530	51,774	56,843	57,963	28
Cabo Verde	Yes	38,791	22,797	3,171	25,108	65
Cambodia	Yes	1,258,075	885,328	955,336	972,813	77
Cameroon	Yes	4,760,203	3,355,712	3,153,776	3,203,591	67
Central African Republic (the)						
Chad	Yes	4,154,644	2,838,600	3,217,693	5,374,554	129
Chile	Yes	6,698,099	4,465,255	4,957,950	7,089,350	106
China	Yes		529,799,116	580,648,012		
Colombia	Yes	8,624,850	5,064,307	5,086,999	9,158,361	106
Comoros (the)	Yes	34,958	35,941	40,697	19,482	56
Congo (the)	Yes	688,289	281,524	289,342	292,240	42
Cook Islands (the)	Yes	6,461	1,521	6,647	8,065	125
Costa Rica	Yes	1,451,498	1,100,536	953,108	1,578,209	109
Cote d'Ivoire	Yes	21,289,132	25,276,054	25,276,054	9,223,500	43
Cuba	Yes	1,030,662	739,658	519,644	882,672	86
Democratic People's Republic of Korea (the)	Yes		496,210	510,510		
Democratic Republic of the Congo (the)						
Djibouti						

Country	Ratified Kigali Amendment	Baseline	2020	2021	2022	2022 as percentage of baseline
Dominica				3,435		
Dominican Republic (the)	Yes	3,834,205	2,472,708	2,071,592	3,714,281	97
Ecuador	Yes	3,178,288	2,212,148	1,931,128	3,937,954	124
Egypt	Yes					
El Salvador	Yes	964,120	620,802	985,085	712,414	74
Equatorial Guinea		271,411	280,362	73,076	57,178	21
Eritrea	Yes					
Eswatini (the Kingdom of)	Yes	105,500	32,388	104,320	69,106	66
Ethiopia	Yes		281,607	306,842		
Fiji	Yes		224,248	239,165	404,476	
Gabon	Yes	2,182,210	1,805,193	2,063,886	740,030	34
Gambia (the)	Yes	271,515	173,033	282,417	258,735	95
Georgia	Yes					
Ghana	Yes	1,805,702	471,391	550,143	646,823	36
Grenada	Yes	52,815	32,006	43,461	29,700	56
Guatemala		1,215,970	959,866	885,589	1,326,577	109
Guinea	Yes	1,826,976	878,385	1,477,938	1,673,662	92
Guinea-Bissau	Yes	722,391	743,866	633,559	609,742	84
Guyana		146,169	60,724	112,245	156,067	107
Haiti		149,322	75,275	98,829	40,773	27
Honduras	Yes	1,460,674	1,061,901	1,082,441	1,057,751	72
India	Yes			41,787,290		
Indonesia	Yes		11,107,955	9,707,351	30,402,883	
Iran (Islamic Republic of)						
Iraq						
Jamaica						
Jordan	Yes	2,808,187	1,348,541	1,521,499	1,707,173	61
Kenya	Yes	1,543,824	603,944	365,395	315,618	20
Kiribati	Yes		7,063	10,471	3,569	
Kuwait						
Kyrgyzstan	Yes	450,382	291,736	348,551	487,231	108
Lao People's Democratic Republic (the)	Yes		76,944	70,405		
Lebanon	Yes	2,556,533	1,743,012	1,604,665	1,532,493	60
Lesotho	Yes	103,221	51,406	26,230	10,797	10
Liberia	Yes	180,909	73,313	85,249	47,273	26
Libya						
Madagascar		1,719,334	1,090,927	1,437,172	1,560,674	91
Malawi	Yes	428,435	196,209	196,557	199,697	47
Malaysia	Yes	26,703,074	14,569,917	13,444,256	27,487,984	103
Maldives	Yes	434,163	289,705	315,809	440,495	101
Mali	Yes	399,935	81,129	50,780	106,988	27
Marshall Islands (the)	Yes		7,067	4,380	6,943	
Mauritania						
Mauritius	Yes	665,957	503,851	336,000	650,471	98
Mexico	Yes	76,982,664	48,211,034	47,994,455	95,644,142	124

Country	Ratified Kigali Amendment	Baseline	2020	2021	2022	2022 as percentage of baseline
Micronesia (Federated States of)	Yes		8,341	8,582	15,017	
Mongolia	Yes	57,309	24,183	31,701	32,305	56
Montenegro	Yes	156,321	170,362	108,905	140,724	90
Morocco	Yes	2,134,190	1,687,148	1,475,421	589,312	28
Mozambique	Yes	655,255	348,600	438,536	621,850	95
Myanmar						
Namibia	Yes	774,924	796,190	352,865	652,217	84
Nauru	Yes	1,204	335	1,186	1,456	121
Nepal						
Nicaragua	Yes	582,352	462,178	498,871	384,411	66
Niger (the)	Yes	1,222,358	985,514	843,475	813,172	67
Nigeria	Yes	15,187,779	2,620,048	8,381,305	17,374,682	114
Niue	Yes			74		
North Macedonia	Yes	396,508	360,629	346,785	366,400	92
Oman			1,821,602	2,185,789	2,089,387	
Pakistan			9,456,060			
Palau	Yes	10,368	7,676	6,626	6,318	61
Panama	Yes	2,515,910	1,457,267	1,946,551	2,674,324	106
Papua New Guinea					523,271	
Paraguay	Yes	1,684,479	1,467,204	876,188	1,563,023	93
Peru	Yes	2,735,721	2,179,188	1,605,215	2,785,607	102
Philippines (the)	Yes	11,903,687	7,170,780	6,013,387	14,908,531	125
Qatar						
Republic of Korea (the)	Yes		63,028,325	61,076,143		
Republic of Moldova (the)	Yes	371,068	379,136	340,079	333,986	90
Rwanda	Yes	336,373	268,616	266,728	221,209	66
Saint Kitts and Nevis						
Saint Lucia	Yes	99,954	32,643	30,454	167,727	168
Saint Vincent and the Grenadines	Yes	32,175	16,509	25,807	36,101	112
Samoa	Yes	20,557	24,593	9,997	10,845	53
Sao Tome and Principe	Yes	71,039	17,696	29,038	28,907	41
Saudi Arabia						
Senegal	Yes	2,664,194	1,829,973	1,912,559	1,930,179	72
Serbia	Yes	3,247,603	2,644,622	1,787,306	4,772,298	147
Seychelles	Yes	249,400	140,392	233,760	286,660	115
Sierra Leone	Yes	350,905	250,376	308,252	386,912	110
Singapore	Yes		5,973,403	6,237,038	8,427,297	
Solomon Islands	Yes		24,707	30,525	29,625	
Somalia	Yes		894,881	883,056	348,650	
South Africa	Yes	13,843,139	8,221,905	9,164,240	8,647,454	62
South Sudan		221,410	172,588	166,868	60,060	27
Sri Lanka	Yes		478,419	1,149,247		
Sudan (the)			1,244,369	1,293,587		

Country	Ratified Kigali Amendment	Baseline	2020	2021	2022	2022 as percentage of baseline
Suriname			237,803	118,970		
Syrian Arab Republic	Yes		22,940,500	13,883,500	12,403,200	
Thailand						
Timor-Leste						
Togo	Yes	1,124,896	607,767	635,045	852,133	76
Tonga	Yes		3,930	6,663	3,433	
Trinidad and Tobago	Yes	5,681,787	4,425,345	5,201,433	4,597,414	81
Tunisia	Yes	2,369,109	1,719,614	1,223,752	1,637,099	69
Türkiye	Yes	37,117,410	17,305,994	21,777,055	46,306,331	125
Turkmenistan	Yes	597,121	586,253	510,256	256,793	43
Tuvalu	Yes		296	343	178	
Uganda	Yes	39,432	48,950	46,209	13,710	35
United Arab Emirates (the)						
United Republic of Tanzania (the)	Yes		252,760	151,133		
Uruguay	Yes	1,012,431	613,574	431,118	571,556	56
Vanuatu	Yes		11,915	13,781	17,511	
Venezuela (Bolivarian Republic of)	Yes	5,157,612	753,900	799,335	2,644,630	51
Viet Nam	Yes		9,414,958	10,470,044	10,727,081	
Yemen						
Zambia	Yes	699,513	293,732	672,741	814,585	116
Zimbabwe	Yes	1,210,624	1,009,387	733,188	795,792	66

* As of October 3, 2023.