UNITED NATIONS

EP

United Nations Environment Programme

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/95/8
20 October 2024

ORIGINAL: ENGLISH

EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-fifth Meeting
Montreal, 4-8 December 2024
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 2013 and 2023. As of 18 October 2024, all the countries that submitted requests for funding to the 95th meeting have submitted 2023 CP data.

Table 1. A7 and CP data reports submitted by A5 Parties

Data	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
A7 (as of 7 October 2024)	147	147	147	147	147	147	147	147	147	147	119
CP (as of 18 October 2024)	145	144*	144	144	144	144	144	144	144	144	136

* Excluding Croatia, which became a non-Article 5 country in 2014.

[1] UNEP/OzL.Pro/ExCom/95/1

[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); 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; and the 2024 freeze of HFCs in the consumption sector. It assumes that the latest consumption reported under A7 or CP data reports has taken into account the phase-out from completed projects.[4]

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 2023 CP data reports. Out of the 136 CP data reports submitted for 2023, 115 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 2023, completed projects had phased out 292,081 ODP tonnes of consumption and 204,189 ODP tonnes of production. The completed projects were valued at US $3.26 billion out of an approved total of approximately US $3.72 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 2022, the production of 0.2 ODP tonnes of MB for laboratory uses was reported under A7.

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 50 per cent below the aggregated production baseline.

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

Country	2015	2016	2017	2018	2019	2020	2021	2022	2023	Baseline
HCFC-22										
Argentina	134.5	95.8	100.3	65.6	88.3	66.3	56.6	72.1	91.8	224.6
China	13,391.0	14,086.3	13,445.7	13,636.4	13,598.2	11,042.2	10,011.8	11,155.9	**	29,122.0*
Democratic People's Republic of Korea (the)	27.4	24.8	24.8	24.8	27.0	27.0	24.8	24.8	**	27.6
India	1,727.6	1,665.5	1,789.5	1,936.4	1,937.0	1,354.8	1,156.2	942.0	**	2,399.5
Mexico	160.9	166.8	190.1	183.8	134.8	56.7	138.4	217.4	147.2	697.0
Republic of Korea	348.9	240.3	305.6	289.9	271.5	254.3	221.0	199.6	167.2	395.1
Venezuela (Bolivarian Republic of)	37.2	14.3	15.0	1.9	0.0	0.0	0.0	0.0	0.0	123.1
Total HCFC-22	15,827.6	16,293.8	15,871.0	16,138.7	16,056.7	12,801.3	11,608.7	12,611.8	406.2	32,988.9
HCFC-141b										
HCFC-141b	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										
HCFC-142b	1,224.3	1,110.5	1,115.5	756.3	816.0	418.3	472.3	126.7	**	*
Total	**24,298.4**	**24,682.6**	**24,063.3**	**23,216.1**	**22,974.3**	**17,842.9**	**15,626.2**	**16,588.9**	**406.2**	**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 7 October 2024, A7 data for China, the Democratic People's Republic of Korea and India had not been submitted.

7. An HCFC production phase-out management plan (HPPMP) was approved for one country (China).[9]

8. One A5 country, the Democratic People's Republic of Korea, has reported 24.79 ODP tonnes of HCFC production for the year 2022, which is below the production target set in the plan of action in decision XXXII/6 of the Parties. The country did not submit information on the deviations from the control schedules in 2021, as requested by decision XXXV/18, and it was unable to send representatives to attend the 46th meeting of the Open-Ended Working Group. The Implementation Committee, therefore, adopted recommendation 72/3, in which it noted with appreciation the Party's submission of all outstanding A7 data for 2022, which confirmed its adherence to its commitments for 2022, as set out in the plan of action to return to compliance adopted in decision XXXII/6. It also noted with great concern, however, that the Party had not yet provided an explanation for the deviations from its commitments for 2021. It urged the Party to provide an explanation for the deviations as a matter of urgency, and no later than 15 September 2024, and, if appropriate, to submit a revised plan of action, as well as its progress report on efforts to establish additional national policies, as set out in its plan of action to return to compliance, for consideration by the Implementation Committee at its 73rd meeting. The Implementation Committee also agreed to continue to monitor closely the progress made by the Party in implementing its plan of action and phasing out HCFCs and reminded the Party of decision XXXV/18. As of date, the Party has not submitted the necessary

[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] Stage II of the HPPMP for China was approved at the 86th meeting. The Agreement was approved at the 87th meeting.

information, as urged in decision XXXV/18 and recommendation 72/3. In addition, the Party has not yet submitted its A7 data for 2023.

9. As of 7 October 2024, A7 data on HFC production was not available to the Secretariat from the two large HFC producing countries. Therefore, the Secretariat has not included HFC production information in the present document.

B. Consumption sector

CFCs, halons, CTC, MB and TCA

10. All A5 countries have reported zero consumption of CFCs, halons, MB and TCA in 2022 or 2023.

11. Only two A5 countries have reported CTC consumption for laboratory and analytical-use (China (104.7 ODP tonnes in 2022) and the Republic of Korea (0.2 ODP tonnes in 2023)). 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).

12. Thirty 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 16,166 ODP tonnes (261,393 metric tonnes), as shown in table 3. The three main HCFCs are: HCFC-22 (56.7 per cent of the total consumption measured in ODP tonnes), HCFC-141b (31.0 per cent) and HCFC-142b (6.9 per cent).

Table 3. Baseline and latest (2022 or 2023) 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	1,924.7	38.5	82.4
HCFC-124	1,270.7	28.0	53.1	1.2	4.2
HCFC-141b	107,871.6	11,865.9	33,388.1	3,672.7	31.0
HCFC-142b	33,195.5	2,157.7	2,300.5	149.5	6.9
HCFC-22	394,504.8	21,697.8	223,770.8	12,307.4	56.7
HCFC-225	30.4	2.1	-44.3	-3.1	-145.8
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**	**261,392.9**	**16,166.2**	**45.2**

* Including Republic of Korea (778.1 ODP tonnes), Singapore (19.5 ODP tonnes) and the United Arab Emirates (359.0 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 2022 consumption of 57.84 ODP tonnes, which is below the consumption target set in the plan of action in decision XXXII/6 of the Parties. The country did not submit information on the deviations from the control schedules in 2021, as requested by decision XXXV/18, and was unable to send representatives to attend the 46th meeting of the Open-Ended Working Group. The Implementation Committee, therefore, adopted recommendation 72/3, in which it noted with appreciation the Party's submission of all outstanding A7 data for 2022, which confirmed its adherence to its commitments for 2022, as set out in the plan of action to return to compliance adopted in decision XXXII/6. It also noted with great concern, however, that the Party

had not yet provided an explanation for the deviations from its commitments for 2021. It urged the Party to provide an explanation for the deviations as a matter of urgency, and no later than 15 September 2024, and, if appropriate, to submit a revised plan of action, as well as its progress report on efforts to establish additional national policies, as set out in its plan of action to return to compliance, for consideration by the Implementation Committee at its 73rd meeting. The Implementation Committee also agreed to continue to monitor closely the progress made by the Party in implementing its plan of action and phasing out HCFCs and reminded the Party of decision XXXV/18. As of date, the Party has not submitted the necessary information, as urged in decision XXXV/18 and recommendation 72/3. In addition, the Party has not yet submitted its A7 data for 2023.

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 94th meeting, the Executive Committee has approved stage I of the HPMPs for 145[10] countries,[11] stage II for 115 countries and stage III for 17 countries, at a total value of US $1.31 billion (approved in principle) of which US $1.1 billion has been disbursed to address compliance with the Montreal Protocol control levels as follows:

(a) Fifteen countries (12 low-volume-consuming (LVC) and three non-LVC countries), to address compliance up to 2020;

(b) Twenty-eight countries to address compliance up to 2025 or 2027; and

(c) Ninety-nine countries[12] 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 83 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 4 shows the aggregate remaining HCFC consumption[13] by type of HCFCs in A5 countries that are receiving assistance from the Fund.

[10] Including Croatia, which became a non-Article 5 country in 2014.

[11] For various reasons, stage I of the HPMPs for three countries (Antigua and Barbuda, the Central African Republic and Yemen) were cancelled at the 82nd meeting.

[12] The Bahamas, Barbados, Belize, Benin, Bhutan, Bolivia (Plurinational State of), Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Burkina Faso, Cabo Verde, Cambodia, Chad, Chile, Colombia, the Comoros, the Cook Islands, Costa Rica, Cote d'Ivoire, 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, Ethiopia, Fiji, Gabon, the Gambia, Georgia, Ghana, Grenada, Guatemala, Guinea, Guyana, Honduras, India, Indonesia, Jamaica, Kenya, Kiribati, Kyrgyzstan, the Lao People's Democratic Republic, Lebanon, Lesotho, Liberia, Madagascar, Malawi, Malaysia, Maldives, the Marshall Islands, Mauritius, Micronesia (Federated States of), Mongolia, Montenegro, Mozambique, Namibia, Nauru, Nepal, Nicaragua, the Niger, Niue, North Macedonia, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the Philippines, the Republic of Moldova, Rwanda, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Saudi Arabia, Seychelles, Sierra Leone, Solomon Islands, South Africa, Sri Lanka, the Sudan, Suriname, Togo, Tonga, Trinidad and Tobago, Türkiye, Tuvalu, Uganda, the United Republic of Tanzania, Uruguay, Vanuatu, Venezuela (Bolivarian Republic of), Viet Nam, Zambia and Zimbabwe.

[13] 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.

Table 4. Total remaining HCFC consumption by substance (ODP tonnes)*

HCFC	Baseline	Starting point	Approved	Remaining	% of approved
HCFC-123	31.90	30.21	22.79	7.39	75.4
HCFC-124	26.42	26.14	22.96	3.20	87.8
HCFC-141	0.94	0.94	0.94	0.00	100.0
HCFC-141b	10,668.24	10,676.35	10,643.92	32.14	99.7
HCFC-142b	2,000.80	2,016.80	1,524.49	490.56	75.6
HCFC-21	0.74	0.74	0.74	0.00	100.0
HCFC-22	20,424.65	19,851.34	14,861.08	4,989.53	74.9
HCFC-225	2.82	2.82	1.53	1.29	54.3
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**	**27,078.45**	**5,525.21**	**83.0**
HCFC-141b polyol**	0.00	657.00	596.11	54.33	90.7

* As of the 94th meeting.
** HCFC-141b contained in imported pre-blended polyols.

HFCs

18. Of the 147 A5 countries, 118 countries have established HFC baselines, of which 113 have reported A7 or CP data. One hundred and eleven of the 118 Article 5 countries have ratified the Kigali Amendment.[14] Annex III to the present document includes an analysis of the 2023 reported HFC consumption data (A7 or CP data) as a percentage of the baseline and provides the control measures addressed by approved Kigali HFC implementation plans (KIPs). As of the 94th meeting, the Executive Committee has approved stage I of the KIPs for 39 countries.[15]

19. Of the 113 countries that have established HFC baselines and have reported 2023 A7 or CP data, 26 countries reported 2023 data that are greater than their baseline levels. Ten of these 26 countries have approved stage I of KIPs, seven countries have submitted stage I of KIPs to the 95th meeting, eight countries have KIP preparation projects already approved, and one country has a KIP preparation project included in the 2025-2027 business plan.

20. Four countries have requested for exemption for high-ambient-temperature (HAT) as per the Ozone Secretariat namely, Egypt, Eritrea, Guinea-Bissau and Nigeria.[16] At the 95th meeting, the Executive Committee will consider the KIP for Nigeria.

21. At their Thirty-Fifth Meeting, through decision XXXV/16, the Parties acknowledged that eight countries namely, Botswana, Cuba, Mauritius, Mongolia, the Republic of Moldova, Rwanda, Saint Lucia and Turkmenistan have experienced demonstrated reductions in their respective levels of consumption of HFCs during the years 2020–2022, as compared to 2018–2019, and are expected to have calculated levels of consumption of HFCs in 2024 that exceed their respective calculated baselines; these eight countries have expressed concern in writing to the Ozone Secretariat regarding the impact of the COVID-19 pandemic on their baselines.

22. The Parties also agreed that the Implementation Committee under the Non-Compliance Procedure of the Montreal Protocol should defer, until 2026 data becomes available, any consideration of the

[14] Seven countries have established baselines but have not ratified Kigali Amendment.
[15] Albania, Armenia, Bolivia (Plurinational State of), Burkina Faso, Cambodia, Cameroon, Chile, the Congo, Cuba, the Dominican Republic, Ecuador, El Salvador, Eswatini, the Gambia, Ghana, Grenada, Honduras, Jordan, Kyrgyzstan, the Lao People's Democratic Republic, Liberia, Malawi, Malaysia, Mexico, Montenegro, Mozambique, Nicaragua, the Niger, North Macedonia, Panama, Paraguay, Peru, Saint Lucia, Seychelles, Sierra Leone, Trinidad and Tobago, Tunisia, Turkmenistan, and Viet Nam.
[16] Four countries (Benin, Chad, the Gambia and Senegal) withdrew their requests to use the HAT exemption in accordance with paragraph 29 of decision XXVIII/2.

compliance status with regard to control measures for consumption of Annex F substances, for any of the eight countries listed in paragraph 20, on the understanding that the country will continue to make every effort to comply with these control measures, and urged the countries that have not already done so to submit expeditiously their respective KIPs for consideration by the Executive Committee.

23. Of these eight countries, stage I of the KIPs for Cuba, Saint Lucia and Turkmenistan have been approved; and Mauritius and Rwanda have submitted stage I of their KIPs to the 95th meeting.

I.2 Licensing and quota systems

24. 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. One hundred and eight of the 117 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

25. At their Thirty-Fifth Meeting, the Parties identified that the Democratic People's Republic of Korea was in non-compliance in 2021 with the provisions of the Montreal Protocol governing consumption and production of HCFCs (decision XXXV/18). As indicated in paragraphs 8 and 14, the Democratic People's Republic of Korea, has reported HCFC consumption of 57.84 ODP tonnes and HCFC production of 24.79 ODP tonnes for the year 2022, which are below the consumption and production targets set in the plan of action in decision XXXII/6. The Implementation Committee will consider the case of the Democratic People's Republic of Korea pursuant to its recommendation 72/3, as mentioned above, at its 73rd meeting.

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

Key messages from the CP data analysis

- In 2023, the three sectors with the largest consumption of HCFCs (measured in ODP tonnes) were first the refrigeration servicing, second the refrigeration manufacturing sector and third, the foam sector.
- Significant decrease in consumption and production of HCFCs in 2020, 2021, 2022 and 2023; 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.
- 115 A5 countries reported HFC CP data for 2023.
- R-410A, HFC-134a, R-507A, R-404A, HFC-227ea, HFC-32 and HFC-23 (use) account for 93.5% of the total consumption in CO_2-equivalent tonnes; refrigeration servicing accounts for 34.4%, refrigeration – 24.8%, and refrigeration manufacturing – AC 20.7%.
- Most consumed HFCs including blends in 2023 were R-404A, HFC-134a, R-410A, R-507A, R-407C and R-407A for LVC countries, and R-410A, HFC-134a, R-507A, R-404A, HFC-227ea, and HFC-32 for non-LVC countries.[19] 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.

[17] Of the 117 countries that have ratified Kigali Amendment, six countries have not established HFC baselines.
[18] As of 1 July 2024
[19] LVC and non-LVC classification is based on HCFC baseline.

III.1 HCFC data

A. HCFC production versus consumption

26. Since 2013, 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 and 2023, as shown in table 5. The data reported shows a significant decrease in consumption and production in 2020, 2021, 2022 and 2023 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 5. HCFC production versus consumption of the three main HCFCs (ODP tonnes)

HCFC	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Production											
HCFC-22	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	12,415.3	11,187.4
HCFC-141b	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	1,770.8
HCFC-142b	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	185.5
Consumption											
HCFC-22	17,817.0	17,399.4	15,289.4	15,497.6	15,182.9	15,197.3	14,975.2	11,977.6	11,320.8	11,870.6	10,181.6
HCFC-141b	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	3,402.2	1,328.3
HCFC-142b	1,014.5	761.0	890.8	726.2	774.3	430.1	486.7	182.9	319.3	131.9	188.6
Production – consumption											
HCFC-22	952.0	2,416.9	1,493.2	693.6	543.0	864.0	984.1	605.9	84.7	544.7	1,005.8
HCFC-141b	602.3	1,211.9	474.0	893.3	764.6	585.1	567.3	922.2	409.9	448.2	442.5
HCFC-142b	87.5	315.8	333.5	384.3	341.2	326.2	329.3	235.4	153.0	(5.2)	(3.1)

B. Sector distribution of HCFC consumption

27. Table 6 presents the sector distribution of aggregated HCFC consumption for the period 2013 to 2023, 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.

28. In 2023, the three sectors with the largest consumption of HCFCs (measured in ODP tonnes) were the refrigeration servicing (57 per cent of the total), the refrigeration manufacturing (25.4 per cent), and the foam sectors (16.1 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.

Table 6. Sector distribution of HCFC consumption by group of countries (ODP tonnes)

Sector	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023 (% of total)
China												
Aerosol	137.8	186.2	180.4	189.4		154.0	163.7					0.0
Foam	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	4,140.0	1,656.5	14.0
Firefighting												0.0
Refrigeration manufacturing	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	2,708.6	22.9
Refrigeration servicing	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	2,874.7	24.3
Solvent	466.0	484.8	418.5	413.4	397.0	375.1	385.0	308.0	275.0	275.0	121.0	1.0

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

Sector	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023 (% of total)
Total for China	**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**	**7,360.9**	**62.1**
14 largest A5 consuming countries*												
Aerosol	123.8	19.3	87.3	42.4	5.5	26.9	7.8	1.1	2.6	3.0	4.8	0.0
Foam	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	191.5	102.8	0.9
Firefighting	5.4	4.0	4.0	4.2	4.9	2.3	2.9	2.0	2.4	2.5	1.8	0.0
Refrigeration manufacturing	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	577.4	283.5	2.4
Refrigeration servicing	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	2,699.0	2,681.1	22.6
Solvent	43.3	38.5	37.1	29.6	53.9	57.5	63.7	75.1	53.1	90.9	44.8	0.4
Total 14 largest consuming countries	**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**	**3,564.3**	**3,118.8**	**26.3**
129 remaining A5 countries												
Aerosol	0.7	0.4	0.3	0.1	0.5							0.0
Foam	963.2	916.0	869.0	826.9	731.2	497.5	476.6	381.6	225.5	168.6	151.3	1.3
Firefighting	8.6	11.2	14.0	11.1	7.7	3.2	4.4	1.4	1.9	0.7	1.5	0.0
Refrigeration manufacturing	314.3	290.2	248.9	236.1	217.3	179.0	180.1	97.7	73.4	64.2	21.9	0.2
Refrigeration servicing	1,995.8	2,011.0	1,861.3	1,695.9	1,608.3	1,557.1	1,530.7	1,312.7	1,201.2	1,184.8	1,191.7	10.1
Solvent	5.2	3.5	4.9	5.1	3.1	3.2	3.3	0.2	0.7	3.1	1.6	0.0
Total 129 remaining A5 countries	**3,287.7**	**3,232.3**	**2,998.3**	**2,775.3**	**2,568.1**	**2,240.0**	**2,195.1**	**1,793.6**	**1,502.7**	**1,421.4**	**1,367.9**	**11.5**
All A5 countries												
Aerosol	262.2	205.9	268.0	232.0	6.0	180.9	171.5	1.1	2.6	3.0	4.8	0.0
Foam	11,082.6	10,473.0	8,468.7	8,272.4	8,453.8	7,452.5	7,204.5	4,958.7	4,319.4	4,500.1	1,910.6	16.1
Firefighting	14.1	15.2	18.0	15.2	12.6	5.6	7.3	3.4	4.3	3.2	3.3	0.0
Refrigeration manufacturing	8,562.2	7,824.3	7,063.2	6,817.0	6,615.1	6,274.4	5,937.1	4,031.6	3,709.8	3,819.1	3,014.0	25.4
Refrigeration servicing	8,128.9	8,181.0	7,422.0	7,597.1	7,294.7	7,488.9	7,625.1	6,836.4	6,635.1	6,868.5	6,747.5	57.0
Solvent	514.5	526.9	460.4	448.2	454.0	435.8	451.9	383.2	328.8	369.1	167.4	1.4
Total all A5 countries	**28,564.6**	**27,226.3**	**23,700.4**	**23,382.0**	**22,836.3**	**21,838.1**	**21,397.4**	**16,214.4**	**15,000.0**	**15,563.0**	**11,847.6**	**100.0**
% of total for China	60.2	61.8	56.9	60.8	64.0	65.9	66.5	65.9	67.5	68.0	62.1	
% of total for 14 largest A5 consuming countries	28.3	26.3	30.4	27.3	24.8	23.9	23.3	23.0	22.5	22.9	26.3	
% of total for 129 remaining A5 countries	11.5	11.9	12.7	11.9	11.2	10.3	10.3	11.1	10.0	9.1	11.5	

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

29. The sector distribution of the three main HCFCs consumed in A5 countries is presented in table 7. The analysis shows a sustained reduction in the overall consumption of these substances.

Table 7. Sector distribution of the main HCFCs consumed in A5 countries (ODP tonnes)

Sector	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
HCFC-22											
Aerosol	116.4	129.5	134.2	132.0	0.3****	102.3	91.1		0.1	0.0	0.0
Foam*	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	611.3
Firefighting											
Refrigeration manufacturing	8,012.7	7,518.0	6,747.4	6,590.5	6,330.0	5,999.3	5,760.2	3,891.5	3,654.7	3,764.7	2,975.3

Sector	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Refrigeration servicing	7,882.3	8,019.8	7,229.8	7,256.1	7,164.9	7,413.1	7,507.1	6,757.3	6,462.4	6,770.1	6,594.8
Solvent		0.3	0.7	0.6	0.4	0.4	0.4	0.1	0.1	0.1	0.2
Total HCFC-22	**17,817.0**	**17,399.4**	**15,289.4**	**15,497.6**	**15,182.9**	**15,197.3**	**14,975.2**	**11,977.6**	**11,320.8**	**11,870.6**	**10,181.6**
HCFC-141b											
Aerosol	145.8	76.4	132.0	99.9	5.7****	78.7	80.4	1.1	2.5	2.9	4.8
Foam	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	2,968.6	1,073.6
Firefighting	6.7	7.6	9.3	5.2	6.3	1.8	3.0	0.7			
Refrigeration manufacturing**	529.6	282.9	294.2	204.8	264.9	255.8	159.7	125.6	40.0	39.2	25.0
Refrigeration servicing	75.7	66.5	54.6	108.8	37.1	26.4	28.0	22.7	23.9	22.5	57.7
Solvent	510.6	521.0	454.4	443.3	450.8	430.0	447.2	382.8	328.7	369.0	167.2
Total HCFC-141b	**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**	**3,402.2**	**1,328.3**
HCFC-142b											
Aerosol	0.0	0.0	1.8	0.0	0.0						
Foam***	863.7	686.2	773.8	608.3	701.0	398.5	412.3	134.7	179.0	68.3	100.2
Firefighting											
Refrigeration manufacturing	6.5	8.0	7.2	6.9	6.1	5.9	5.9	4.2	4.2	4.3	4.2
Refrigeration servicing	144.4	66.7	107.9	110.9	67.3	25.7	68.5	44.0	136.1	59.3	84.2
Solvent											
Total HCFC-142b	**1,014.5**	**761.0**	**890.8**	**726.2**	**774.3**	**430.1**	**486.7**	**182.9**	**319.3**	**131.9**	**188.6**
Other HCFCs	751.7	717.6	747.8	773.3	566.8	474.7	401.2	352.8	224.7	158.4	149.0
Total	**28,564.6**	**27,226.3**	**23,700.4**	**23,382.0**	**22,836.3**	**21,838.1**	**21,397.4**	**16,214.4**	**15,000.0**	**15,563.0**	**11,847.6**

* 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

30. 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)).[21]

31. The present document presents an analysis of the HFC consumption reported by the 115 A5 countries under their CP data reports for 2023. Of the 136 countries which submitted 2023 CP data as of 18 October 2024, 110 countries have ratified the Kigali Amendment. Only 105 of the 110 countries have provided HFC data in their 2023 CP reports on time for this analysis. In addition, 10 countries that have not ratified the Kigali Amendment have provided HFC data in their 2023 CP reports.

[21] At its 93rd meeting, the Executive Committee requested the Secretariat to provide options for consideration by the Executive Committee, at its 96th meeting, on potential modifications to section D of the CP data reporting format, specifically in relation to HFC-23 generated, destroyed or maintained as stocks, taking into consideration any decision taken by the Meeting of the Parties pursuant to paragraph 3 of decision XXXV/7 (decision 93/7(b)(iii)).

32. The sector distribution of aggregated HFC consumption for the 115 countries that have submitted 2023 CP data is presented in table 8. Of these 115 countries,[22] 74 are LVC countries and they account for 88.8 per cent of the aggregated HCFC baseline for all LVC countries; 41 are non-LVC countries and they account for 81 per cent of the HCFC baselines for all non-LVC countries. The HFC data reported by LVC and non-LVC countries account for 3.8 per cent and 96.2 per cent, respectively, of the total HFC consumption data reported for the year 2023.

Table 8. Sector distribution of HFCs consumed in 2023 (metric tonnes)

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total*
				Refriger-ation	AC	Other unidentified manufacturing				
HFC-125	1.8		1,268.1	176.5	2,766.5		1,460.3		1,180.1	6,852.3
HFC-134							425.3			425.3
HFC-134a	8,803.2	547.9	0.0	29,619.4	36,838.4	7,210.8	87,851.6		1,009.4	176,925.6
HFC-143							0.0			0.0
HFC-143a							455.0		1,034.2	1,489.2
HFC-152							0.0			0.0
HFC-152a	6,922.3	5,101.8			0.4		12,641.0	2,662.6	1,965.3	29,725.7
HFC-227ea	405.7	6.0	33,431.7				91.1			33,960.6
HFC-236cb							0.0			0.0
HFC-236ea							0.0		109.0	109.0
HFC-236fa			536.5				1.1		1.3	538.9
HFC-245ca							0.0			0.0
HFC-245fa		11,115.8	21.5	500.0			61.7		476.4	12,293.5
HFC-32				9,797.9	113,892.4	1,259.0	13,321.0	0.0	1,681.4	139,953.2
HFC-365mfc		833.4					0.0	33.7	0.1	867.2
HFC-41				1.0			0.0	0.1	44.2	45.3
HFC-43-10mee		4.3					0.6	36.5		41.4
HFC-23 (use)**			13.7	6.7			28.1	5.6	1,865.0	1,939.0
R-401A							1.4			1.4
R-404A				12,662.0	0.2	310.3	17,745.0		22.0	33,410.9
R-406A										0.0
R-407A				3.0	1.3	13.0	389.3			531.6
R-407C				454.1	503.6	9.0	7,003.5		20.8	8,218.2
R-407F				36.3		2.0	106.4		0.2	152.0
R-407H							13.1			13.1
R-408A				1.2			0.5			1.7
R-410A				43,588.9	50,635.9	4,068.8	68,926.6	140.3	108.6	171,173.8
R-410B										0.0
R-413A										0.0
R-417A					4.9		586.1		3.6	600.2
R-417B							176.7			176.7
R-417C							14.2			14.2
R-421A										0.0
R-421B										0.0
R-422A							0.7		0.0	0.7
R-422B										0.0
R-422D							83.5			83.5
R-426A				40.0			5.4			45.4
R-427A							3.7		0.0	3.7
R-434A				0.1	0.1	0.0	0.1			0.3
R-437A							103.0			103.0
R-438A				260.0			452.0			712.0
R-442A				0.3			1.6			1.9
R-448A				31.6			101.9			133.5
R-449A				40.6		0.5	256.2			297.3
R-449C				0.9			6.0			6.9

[22] LVC and non-LVC classification is based on HCFC baseline.

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total*
				Refriger-ation	AC	Other unidentified manufacturing				
R-452A				53.7			57.2		0.1	111.0
R-452B										0.0
R-453A				2.6	2.6		3.9		0.0	9.1
R-454A				0.2			0.0			0.2
R-454A					0.0		0.0			0.0
R-454B					300.4		127.5			427.9
R-454C										0.0
R-454C				0.2	2.5		0.2			2.9
R-455A				0.0			0.6			0.7
R-458A										0.0
R-468C										0.0
R-469A										0.0
R-470A							0.8		0.0	0.8
R-470B									0.0	0.0
R-471A									0.1	0.1
R-473A										0.0
R-479A										0.0
R-507A				25,846.7	129.2	116.6	8,581.9		62.5	35,400.4
R-507C							10.9			10.9
R-508B				3.1	0.0		1.6			4.8
R-512A	0.1				0.1		0.2			0.3
R-513A				48.5	24.2		24.2	0.8		97.7
R-514A							1.0			1.0
R-515B					0.1		1.3		0.1	1.6
HFC-227ea in imported pre-blended polyol		2.0								2.0
HFC-245fa in imported pre-blended polyol		55.9								55.9
HFC-365mfc in imported pre-blended polyol		517.1	0.0							517.1
Others	1.4	1,901.2	2.3	0.0	0.0	0.0	42.7	11.8	6.0	1,965.4
Total	**16,134.3**	**20,085.5**	**35,273.8**	**123,175.7**	**205,102.9**	**12,990.1**	**221,167.5**	**2,891.4**	**9,590.4**	**659,457.9**
LVC* **	**140.3**	**404.9**	**15.7**	**32.0**	**38.5**	**423.7**	**24,091.3**	**10.1**	**118.0**	**25,274.6**
Non-LVC* **	**15,994.0**	**19,680.6**	**35,258.0**	**123,143.6**	**205,064.5**	**12,566.3**	**197,076.3**	**2,881.2**	**9,472.4**	**634,183.3**

* Sectoral breakdown columns may not add up to Total because some countries only reported total and no sectoral breakdown.
** HFC-23 is used as a pure substance and in R-508B blend of which HFC-23 is one component.
*** LVC and non-LVC classification is based on HCFC baseline.

33. In 2023, the five sectors with the largest consumption of HFCs (measured in metric tonnes) were the refrigeration servicing (33.5 per cent), refrigeration manufacturing – air-conditioning (AC) (31.1 per cent of the total), refrigeration (18.7 per cent), fire fighting (5.3 per cent) and foam (3 per cent).

34. The sector distribution of aggregated HFC consumption in CO_2-equivalent is presented in table 9. R-410A, HFC-134a, R-507A, R-404A, HFC-227ea, HFC-32 and HFC-23 (use) account for 93.5 per cent of the total consumption in CO_2-equivalent; refrigeration servicing, refrigeration and refrigeration manufacturing – AC, account for 34.4 percent, 24.8 per cent and 20.7 per cent of the total consumption, respectively.

Table 9. Sector distribution of HFCs consumed in 2023 ('000 tons CO_2-equivalent)

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total*
				Refriger-ation	AC	Other unidentified manufacturing				
HFC-125	6	0	4,438	618	9,683	0	5,111	0	4,130	23,983
HFC-134	0	0	0	0	0	0	468	0	0	468
HFC-134a	12,589	784	0	42,356	52,679	10,312	125,628	0	1,443	253,004
HFC-143	0	0	0	0	0	0	0	0	0	0
HFC-143a	0	0	0	0	0	0	2,034	0	4,623	6,657
HFC-152	0	0	0	0	0	0	0	0	0	0
HFC-152a	858	633	0	0	0	0	1,567	330	244	3,686
HFC-227ea	1,306	19	107,650	0	0	0	293	0	0	109,353
HFC-236cb	0	0	0	0	0	0	0	0	0	0
HFC-236ea	0	0	0	0	0	0	0	0	149	149
HFC-236fa	0	0	5,263	0	0	0	11	0	13	5,287
HFC-245ca	0	0	0	0	0	0	0	0	0	0
HFC-245fa	0	11,449	22	515	0	0	64	0	491	12,662
HFC-32	0	0	0	6,614	76,877	850	8,992	0	1,135	94,468
HFC-365mfc	0	662	0	0	0	0	0	27	0	689
HFC-41	0	0	0	0	0	0	0	0	4	4
HFC-43-10mee	0	7	0	0	0	0	1	60	0	68
HFC-23 (use)**	0	0	202	100	0	0	417	84	27,602	28,697
R-401A	0	0	0	0	0	0	0	0	0	0
R-404A	0	0	0	49,655	1	1,217	69,589	0	86	131,024
R-406A	0	0	0	0	0	0	0	0	0	0
R-407A	0	0	0	6	3	27	820	0	0	1,120
R-407C	0	0	0	806	893	16	12,423	0	37	14,578
R-407F	0	0	0	66	0	4	194	0	0	277
R-407H	0	0	0	0	0	0	20	0	0	20
R-408A	0	0	0	3	0	0	1	0	0	4
R-410A	0	0	0	90,992	105,702	8,494	143,884	293	227	357,325
R-410B	0	0	0	0	0	0	0	0	0	0
R-413A	0	0	0	0	0	0	0	0	0	0
R-417A	0	0	0	0	11	0	1,375	0	8	1,408
R-417B	0	0	0	0	0	0	535	0	0	535
R-417C	0	0	0	0	0	0	26	0	0	26
R-421A	0	0	0	0	0	0	0	0	0	0
R-421B	0	0	0	0	0	0	0	0	0	0
R-422A	0	0	0	0	0	0	2	0	0	2
R-422B	0	0	0	0	0	0	0	0	0	0
R-422D	0	0	0	0	0	0	228	0	0	228
R-426A	0	0	0	60	0	0	8	0	0	69
R-427A	0	0	0	0	0	0	8	0	0	8
R-434A	0	0	0	0	0	0	0	0	0	1
R-437A	0	0	0	0	0	0	186	0	0	186
R-438A	0	0	0	589	0	0	1,023	0	0	1,612
R-442A	0	0	0	1	0	0	3	0	0	4
R-448A	0	0	0	44	0	0	141	0	0	185
R-449A	0	0	0	57	0	1	358	0	0	415
R-449C	0	0	0	1	0	0	8	0	0	9
R-452A	0	0	0	115	0	0	122	0	0	237
R-452B	0	0	0	0	0	0	0	0	0	0
R-453A	0	0	0	5	5	0	7	0	0	16
R-454A	0	0	0	0	0	0	0	0	0	0
R-454A	0	0	0	0	0	0	0	0	0	0
R-454B	0	0	0	0	140	0	59	0	0	199
R-454C	0	0	0	0	0	0	0	0	0	0
R-454C	0	0	0	0	0	0	0	0	0	0
R-455A	0	0	0	0	0	0	0	0	0	0

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total*
				Refriger-ation	AC	Other unidentified manufacturing				
R-458A	0	0	0	0	0	0	0	0	0	0
R-468C	0	0	0	0	0	0	0	0	0	0
R-469A	0	0	0	0	0	0	0	0	0	0
R-470A	0	0	0	0	0	0	1	0	0	1
R-470B	0	0	0	0	0	0	0	0	0	0
R-471A	0	0	0	0	0	0	0	0	0	0
R-473A	0	0	0	0	0	0	0	0	0	0
R-479A	0	0	0	0	0	0	0	0	0	0
R-507A	0	0	0	102,999	515	465	34,199	0	249	141,071
R-507C	0	0	0	0	0	0	43	0	0	43
R-508B	0	0	0	21	0	0	11	0	0	33
R-512A	0	0	0	0	0	0	0	0	0	0
R-513A	0	0	0	30	15	0	15	1	0	61
R-514A	0	0	0	0	0	0	0	0	0	0
R-515B	0	0	0	0	0	0	0	0	0	0
HFC-227ea in imported pre-blended polyol	0	6	0	0	0	0	0	0	0	6
HFC-245fa in imported pre-blended polyol	0	58	0	0	0	0	0	0	0	58
HFC-365mfc in imported pre-blended polyol	0	411	0	0	0	0	0	0	0	411
Others	1	1,728	0	0	0	0	68	11	5	1,814
Total	**14,761**	**15,756**	**117,576**	**295,652**	**246,525**	**21,384**	**409,943**	**805**	**40,448**	**1,192,161**

* Sectoral breakdown columns may not add up to "Total" because some countries only reported total and no sectoral breakdown.
** HFC-23 is used as a pure substance and in R-508B blend of which HFC-23 is one component.

35. In 2023, in tonnes CO_2-equivalent terms, the most consumed HFCs including blends were R-404A (34.7 per cent of the total), HFC-134a (28 per cent), R-410A (19.3 per cent), R-507A (7.3 per cent), R-407C (6.6 per cent) and R-407A (1.3 per cent) for LVC countries, and R-410A (30.5 per cent of the total), HFC-134a (20.9 per cent), R-507A (12 per cent), R-404A (9.9 per cent), HFC-227ea (9.6 per cent), and HFC-32 (8.3 per cent) for non-LVC countries.[23]

36. In addition, 23 countries reported a total consumption of 1,938.99 metric tonnes of HFC-23 used in the fire fighting, refrigeration, refrigeration servicing, solvent, and other sectors. These countries are Argentina, Bangladesh, Brazil, China, Egypt, El Salvador, Fiji, Indonesia, Malaysia, Maldives, Mauritius, Mexico, Namibia, Panama, Peru, the Philippines, Serbia, Seychelles, South Africa, Sri Lanka, Türkiye, Uruguay, and Viet Nam.

37. Pursuant to decision 94/3(b), 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 for these two countries is not available.

38. Two countries (Argentina and Mexico) have an obligation to report 2023 data under the CP data report on HFC-23 production and generation. Argentina and Mexico have reported zero and 0.0047 mt of HFC-23 by-product emissions, respectively. As of date, China and India have reported 901.72 mt and zero mt of HFC-23 by-product emissions, respectively.

[23] LVC and non-LVC classification is based on HCFC baseline.

III.3 Prices of HCFCs, HFCs and alternatives

39. The average prices of HCFCs, HFCs and alternatives reported by A5 countries since 2012 are summarized in table 10.[24] 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)[25] that is usually obtained from importers.

Table 10. Average price of HCFCs, HFCs and alternatives[26]

Substance	Average price (US $/kg)*												Range (US $/kg)	Countries (2023)**
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		
HCFC-22	10.06	9.24	10.08	10.07	9.25	10.18	10.24	9.64	10.54	11.02	10.76	12.63	0.16 (Dominican Republic (the)) to 128.00 (Jamaica)	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	12.54	3.11 (China) to 80.43 (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		1.80 (Brazil) to 141.05 (Saint Vincent and the Grenadines)	84
R-290	15.60	14.38	21.26	19.08	16.13	16.48	15.92	21.80	23.85	21.17	22.38	21.24	1.75 (Brazil) to 191.65 (Saint Vincent and the Grenadines)	74
HFC-134a	14.96	13.65	13.30	14.26	12.83	13.94	12.35	12.31	12.71	13.66	13.51	12.15	0.16 (Dominican Republic (the)) to 51.00 (Turkmenistan)	107
R-404A	18.71	15.41	15.11	15.42	15.32	15.97	14.77	13.76	14.28	16.01	15.68	14.92	2.63 (Guyana) to 52.00 (Turkmenistan)	108
R-407C	19.04	16.06	15.19	13.97	12.71	13.94	13.71	13.02	13.78	15.44	14.36	14.47	2.81 (Guyana) to 77.49 (Dominica)	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	14.25	3.00 (Argentina) to 54.49 (Chile)	106
R-507A	15.84	13.59	12.21	11.65	11.76	13.33	13.07	12.99	13.58	16.36	15.03	14.36	3.12 (Argentina) to 47.00 (Mozambique)	58

* All zero entries were excluded.

** Number of A5 countries that reported prices in 2023.

IV. Issues related to CP implementation reports

IV.1 Timely submission of CP data reports

40. In reviewing the timely submission of the CP data reports, the Secretariat noted that, as shown in table 11 there is a slight decrease in the overall submission rate for 2023 when compared with that of 2022. 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 11. Monthly rates of submission of CP data reports (as at 18 October 2024)

Month	2016		2017		2018		2019		2020		2021		2022		2023**	
	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*
January			3	2.08									2	1.39		
February	9	6.25	1	2.78	7	4.86	1	0.69	2	1.39	1	0.69	6	5.56	4	2.78
March	9	12.50	8	8.33	14	14.58	9	6.94	11	9.03	20	14.58	11	13.19	8	8.33
April	49	46.53	60	50.00	64	59.03	63	50.69	51	44.44	60	56.25	53	50.00	49	42.36
May	26	64.58	39	77.08	30	79.86	29	70.83	42	73.61	27	75.00	45	81.25	35	66.67

[24] 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.

[25] 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.

[26] 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)).

Month	2016		2017		2018		2019		2020		2021		2022		2023**	
	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*
June	10	71.53	15	87.50	4	82.64	4	73.61	7	78.47	6	79.17	5	84.72	7	71.53
July	7	76.39	3	89.58	2	84.03	8	79.17	4	81.25	2	80.56	3	86.81	16	82.64
August	2	77.78	7	94.44	3	86.11	5	82.64	4	84.03	5	84.03	3	88.89	7	87.50
September	19	90.97	4	97.22	6	90.28	10	89.58	6	88.19	5	87.50	4	91.67	4	90.28
October	7	95.83	1	97.92	10	97.22	2	90.97	8	93.75	6	91.67	8	97.22	6	94.44
November	2	97.22	1	98.61	1	97.92	3	93.06	0	93.75	4	94.44	0	97.22		
December					1	98.61	8	98.61	0	93.75	7	99.31	0	97.22		
After Dec.	4	100.00	2	100.00	2	100.00	2	100.00	9	100.00	1	100.00	4	100.00		
Total	**144**		**144**		**144**		**144**		**144**		**144**		**144**		**136**	
Outstanding	**0**		**0**		**0**		**0**		**0**		**0**		**0**		**8**	

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

** Revised 2023 data for Uruguay was submitted after the cut-off date and was not included in the analysis.

41. The Executive Committee may wish to request the Secretariat to send a letter to the Governments of Cabo Verde, the Democratic People's Republic of Korea, the Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Myanmar, Nicaragua, and Suriname regarding the outstanding CP data reports for 2023, 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

42. The review of the 2023 ODS import data reported under A7 and CP reports revealed potential data discrepancies, as shown in table 12.

Table 12. Differences between 2023 A7 and CP ODS consumption data (ODP tonnes)

Country	ODS	Agency for IS	A7 data	CP data	Difference	Remarks
Costa Rica	HCFC	UNDP	3.8	3.9	-0.1	Issue being clarified with UNDP pending its response.
Eswatini	HCFC	UNEP	0.8	0.4	0.3	Issue being clarified with UNEP pending its response.
Guinea	HCFC	UNEP	1.1	1.4	-0.3	Issue being clarified with UNEP pending its response.
Malaysia	HCFC	UNDP	153.5	153.6	-0.1	Issue being clarified with UNDP pending its response.
North Macedonia	HCFC	UNIDO	0.0	0.3	-0.3	Issue being clarified with UNIDO pending its response.
Serbia	HCFC	UNIDO	3.8	3.7	0.1	Issue being clarified with UNIDO pending its response.
South Africa	HCFC	UNEP	74.7	74.5	0.2	Issue being clarified with UNEP pending its response.
South Sudan	HCFC	UNEP	0.9	0.8	0.1	Issue being clarified with UNEP pending its response.
Uruguay	HCFC	UNDP	8.2	8.0	0.2	Issue being clarified with UNDP pending its response.
Yemen	HCFC	UNEP	80.5	80.2	0.3	Issue being clarified with UNEP pending its response.

43. The Executive Committee may wish to request the relevant implementing agencies to continue assisting the respective governments listed in table 12 in clarifying the discrepancies between CP data and A7 data for 2023.

V. Recommendation

44. 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/95/8 and that 136 countries had submitted 2023 CP data as at 18 October 2024; and eight countries had not yet submitted their data;

(b) [Further to note that an additional [??] countries had submitted 2023 CP data after the issuance of document UNEP/OzL.Pro/ExCom/95/8;]

(c) To request:

(i) The relevant implementing agencies to continue assisting the respective governments in clarifying the discrepancies between CP data and Article 7 data for 2023 as indicated in table 12 of document UNEP/OzL.Pro/ExCom/95/8 and to report back no later than the 96th meeting; and

(ii) The Secretariat to send letters to the Governments of [Cabo Verde, the Democratic People's Republic of Korea, the Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Myanmar, Nicaragua, and Suriname] regarding outstanding CP data reports for 2023, 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	2023	15.1
Bahrain	2023	1.1
Barbados	2023	0.1
Brazil	2023	58.7
Chile	2023	50.9
China	2022	298.0
Costa Rica	2023	4.2
Egypt	2022	171.6
El Salvador	2023	153.1
Fiji	2022	11.7
Honduras	2023	10.3
India	2022	924.6
Indonesia	2023	75.9
Jamaica	2023	2.9
Jordan	2023	4.2
Malaysia	2023	68.7
Mexico	2023	205.6
Morocco	2023	6.0
Myanmar	2023	30.0
Nicaragua	2022	21.5
Pakistan	2023	281.1
Papua New Guinea	2022	0.3
Philippines (the)	2023	14.7
Singapore	2023	25.7
South Africa	2023	1.9
Sri Lanka	2022	22.9
Syrian Arab Republic	2022	3.0
Türkiye	2023	19.8
United Arab Emirates (the)	2023	25.8
Uruguay	2023	46.9
Total consumption		**2,556.3**
Production		
China	2022	356.2
India	2022	2,209.5
Total production		**2,565.7**

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	A7	2023	23.6	13.7	0	0	0	35% by 2020 and 67.5% by 2025
Albania	A7	2023	6.0	2.2	0	0	0	35% by 2020 and 67.5% by 2025
Algeria	A7	2023	62.1	39.7	0	0	0	20% by 2017
Angola	CP	2023	16.0	3.8	0	0	0	10% by 2015 and 67.5% by 2025
Antigua and Barbuda	A7	2023	0.3	0.0	0	0	0	HPMP cancelled
Argentina	A7	2023	400.7	163.4	0	0	0	17.5% by 2017 and 50% by 2024
Armenia	A7	2023	7.0	2.3	0	0	0	10% by 2015 and 66.6% by 2020
Bahamas (the)	A7	2023	4.8	2.4	0	0	0	35% by 2020 and 100% by 2030
Bahrain	A7	2023	51.9	29.6	0	0	0	35% by 2020 and 73.5% by 2025
Bangladesh	A7	2023	72.6	29.9	0	0	0	30% by 2018 and 67.5% by 2025
Barbados	A7	2023	3.7	0.5	0	0	0	35% by 2020 and 100% by 2030
Belize	A7	2023	2.8	0.7	0	0	0	35% by 2020 and 100% by 2030
Benin	A7	2023	23.8	9.7	0	0	0	35% by 2020 and 100% by 2030
Bhutan	A7	2023	0.3	0.0	0	0	0	100% by 2025
Bolivia (Plurinational State of)	CP	2023	6.1	1.5	0	0	0	35% by 2020 and 100% by 2030
Bosnia and Herzegovina	A7	2023	4.7	0.0	0	0	0	35% by 2020 and 100% by 2026
Botswana	A7	2023	11.0	4.8	0	0	0	35% by 2020 and 100% by 2030
Brazil	A7	2023	1,327.3	491.6	0	0	0	10% by 2015, 45% by 2021 and 100% by 2030
Brunei Darussalam	CP	2023	6.1	3.0	0	0	0	35% by 2020 and 100% by 2030
Burkina Faso	CP	2023	28.9	4.1	0	0	0	35% by 2020 and 100% by 2030
Burundi	A7	2023	7.2	0.7	0	0	0	35% by 2020
Cabo Verde	A7	2023	1.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Cambodia	A7	2023	15.0	6.9	0	0	0	100% by 2035
Cameroon	A7	2023	88.8	24.8	0	0	0	20% by 2017 and 75% by 2025
Central African Republic (the)	A7	2023	12.0	6.1	0	0	0	HPMP cancelled
Chad	A7	2023	16.1	10.0	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	2023	87.5	18.8	0	0	0	10% by 2015, 65% by 2021 and 100% by 2030
China	CP	2023	19,269.0	7,360.9	0	0	0	10% by 2015 and 76% by 2026
Colombia	A7	2023	225.6	19.8	0	0	0	10% by 2015, 65% by 2021 and 100% by 2030
Comoros (the)	A7	2023	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Congo (the)	A7	2023	10.1	5.2	0	0	0	35% by 2020
Cook Islands (the)	A7	2023	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Costa Rica	A7	2023	14.1	3.8	0	0	0	35% by 2020 and 97.5% by 2030
Cote d'Ivoire	A7	2023	63.8	30.3	0	0	0	35% by 2020 and 100% by 2030
Cuba	A7	2023	16.9	0.6	0	0	0	35% by 2020 and 100% by 2030
Democratic People's Republic of Korea (the)**	A7	2022	78.0	57.8	0	0	14	15% by 2018
Democratic Republic of the Congo (the)	A7	2023	66.2	0.9	0	0	0	10% by 2017 and 100% by 2030
Djibouti	A7	2022	0.7	0.3	0	0	0	35% by 2020
Dominica	A7	2023	0.4	0.0	0	0	0	35% by 2020
Dominican Republic (the)	A7	2023	51.2	24.4	0	0	0	10% by 2015, 40% by 2020 and 100% by 2030
Ecuador	A7	2023	23.5	9.0	0	0	0	35% by 2020 and 100% by 2030
Egypt	CP	2023	386.3	236.7	0	0	0	25% by 2018 and 70% by 2025
El Salvador	A7	2023	11.7	4.7	0	0	0	35% by 2020 and 100% by 2030
Equatorial Guinea	A7	2023	6.3	1.1	0	0	0	35% by 2020
Eritrea	A7	2023	1.1	0.5	0	0	0	35% by 2020 and 100% by 2030
Eswatini	A7	2023	1.7	0.8	0	0	0	35% by 2020 and 100% by 2030
Ethiopia	CP	2023	5.5	3.4	0	0	0	35% by 2020 and 100% by 2030
Fiji	CP	2023	5.7	2.0	0	0	0	35% by 2020 and 100% by 2030
Gabon	A7	2023	30.2	7.3	0	0	0	35% by 2020 and 100% by 2030
Gambia (the)	A7	2023	1.5	0.2	0	0	0	35% by 2020 and 100% by 2030
Georgia	A7	2023	5.3	0.9	0	0	0	35% by 2020 and 100% by 2030
Ghana	A7	2023	57.3	14.8	0	0	0	35% by 2020 and 100% by 2030
Grenada	CP	2023	0.8	0.1	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
Guatemala	A7	2023	8.3	2.0	0	0	0	35% by 2020 and 100% by 2030
Guinea	A7	2023	22.6	1.1	0	0	0	35% by 2020 and 100% by 2030
Guinea-Bissau	A7	2023	2.8	0.7	0	0	0	35% by 2020
Guyana	A7	2023	1.8	0.3	0	0	0	10% by 2015 and 100% by 2030
Haiti	CP	2023	3.6	2.0	0	0	0	35% by 2020
Honduras	A7	2023	19.9	6.2	0	0	0	35% by 2020 and 100% by 2030
India	CP	2023	1,608.2	321.7	0	0	0	10% by 2015, 60% by 2023 and 100% by 2030
Indonesia	A7	2023	403.9	149.4	0	0	0	20% by 2018, 55% by 2023 and 100% by 2030
Iran (Islamic Republic of)	A7	2023	380.5	93.7	0	0	0	10% by 2015 and 75% by 2024
Iraq	A7	2023	108.4	66.4	0	0	0	13.82% by 2019 and 69% by 2025
Jamaica	A7	2023	16.3	1.4	0	0	0	35% by 2020 and 100% by 2030
Jordan	A7	2023	83.0	15.7	0	0	0	20% by 2017 and 50% by 2022
Kenya	A7	2023	52.2	5.5	0	0	0	21.1% by 2017 and 100% by 2030
Kiribati	A7	2023	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Kuwait	A7	2023	418.6	147.0	0	0	0	39.2% by 2020 and 67.5% by 2025
Kyrgyzstan	A7	2023	4.1	0.0	0	0	0	10% by 2015, 97.5% by 2020 and 100% by 2025
Lao People's Democratic Republic (the)	A7	2023	2.3	1.5	0	0	0	35% by 2020 and 100% by 2030
Lebanon	A7	2023	73.5	24.6	0	0	0	18% by 2017, 75% by 2024 and 100% by 2030
Lesotho	A7	2023	3.5	0.4	0	0	0	35% by 2020 and 100% by 2030
Liberia	A7	2023	5.3	2.2	0	0	0	35% by 2020 and 100% by 2030
Libya***	A7	2023	118.4	61.8	0	0	0	10% by 2020 and 80.5% by 2027
Madagascar	A7	2023	16.6	9.1	0	0	0	35% by 2020 and 100% by 2030
Malawi	A7	2023	10.8	1.9	0	0	0	35% by 2020 and 100% by 2030
Malaysia	A7	2023	515.8	153.5	0	0	0	15% by 2016, 42.9% by 2022 and 100% by 2030
Maldives	A7	2023	4.6	0.0	0	0	0	100% by 2020
Mali	CP	2023	15.0	4.4	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
Marshall Islands (the)	A7	2023	0.2	0.0	0	0	0	35% by 2020 and 100% by 2030
Mauritania	A7	2023	20.5	8.7	0	0	0	67.5% by 2025
Mauritius	A7	2023	8.0	1.2	0	0	0	100% by 2030
Mexico	A7	2023	1,148.8	168.2	0	0	0	30% by 2018 and 67.5% by 2023
Micronesia (Federated States of)	A7	2023	0.2	0.0	0	0	0	35% by 2020 and 100% by 2030
Mongolia	A7	2023	1.4	0.1	0	0	0	35% by 2020 and 100% by 2030
Montenegro	A7	2023	0.8	0.0	0	0	0	35% by 2020 and 100% by 2025
Morocco	A7	2023	51.4	17.3	0	0	0	20% by 2020 and 67.5% by 2025
Mozambique	A7	2023	8.7	2.0	0	0	0	35% by 2020 and 100% by 2030
Myanmar	A7	2023	4.3	2.2	0	0	0	35% by 2020
Namibia	CP	2023	8.4	0.8	0	0	0	100% by 2025
Nauru	A7	2023	0.0	0.0	0	0	0	35% by 2020 and 100% by 2030
Nepal	A7	2023	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	2023	16.0	5.6	0	0	0	35% by 2020 and 100% by 2030
Nigeria	A7	2023	344.9	103.7	0	0	0	10% by 2015, 51.35% by 2023 and 67.5% by 2025
Niue	A7	2023	0.0	0.0	0	0	0	35% by 2020 and 100% by 2030
North Macedonia	A7	2023	1.8	0.0	0	0	0	35% by 2020 and 100% by 2028
Oman	A7	2023	31.5	11.7	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Pakistan	A7	2023	248.1	118.9	0	0	0	10% by 2015, 50% by 2020 and 100% by 2030
Palau	A7	2023	0.2	0.0	0	0	0	35% by 2020 and 100% by 2030
Panama	A7	2023	24.8	8.9	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Papua New Guinea	CP	2023	3.3	0.7	0	0	0	100% by 2025
Paraguay	A7	2023	18.0	10.6	0	0	0	35% by 2020 and 100% by 2030
Peru	A7	2023	26.9	14.8	0	0	0	10% by 2015 and 67.5% by 2025
Philippines (the)	A7	2023	162.0	64.5	0	0	0	10% by 2015, 50% by 2021 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
Qatar	A7	2023	86.9	56.5	0	0	0	20% by 2015 and 67.5% by 2026
Republic of Korea (the)	A7	2023	1,908.0	778.1	0	0	0	
Republic of Moldova (the)	CP	2023	1.0	0.3	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Rwanda	A7	2023	4.1	1.2	0	0	0	35% by 2020 and 100% by 2030
Saint Kitts and Nevis	CP	2023	0.5	0.1	0	0	0	35% by 2020
Saint Lucia	A7	2023	1.1	0.1	0	0	0	35% by 2020 and 100% by 2030
Saint Vincent and the Grenadines	A7	2023	0.3	0.0	0	0	0	100% by 2025
Samoa	A7	2023	0.3	0.0	0	0	0	35% by 2020 and 100% by 2030
Sao Tome and Principe	A7	2023	2.2	0.0	0	0	0	35% by 2020
Saudi Arabia	A7	2023	1,468.7	697.6	0	0	0	40% by 2020 and 100% by 2030
Senegal	A7	2023	36.2	10.2	0	0	0	35% by 2020 and 81.1% by 2025
Serbia	A7	2023	8.4	3.8	0	0	0	35% by 2020 and 67.5% by 2025
Seychelles	A7	2023	1.4	0.0	0	0	0	100% by 2025
Sierra Leone	A7	2023	1.7	0.6	0	0	0	35% by 2020 and 100% by 2030
Singapore	A7	2023	216.1	19.5	0	0	0	
Solomon Islands	A7	2023	2.0	0.1	0	0	0	35% by 2020 and 100% by 2030
Somalia	CP	2023	45.1	10.5	0	0	0	35% by 2020
South Africa	A7	2023	369.7	74.7	0	0	0	35% by 2020 and 100% by 2030
South Sudan	A7	2023	4.1	0.9	0	0	0	35% by 2024
Sri Lanka	CP	2023	13.9	8.6	0	0	0	35% by 2020 and 100% by 2030
Sudan (the)	CP	2023	52.7	3.3	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 and 100% by 2030
Syrian Arab Republic	CP	2023	135.0	51.1	0	0	0	67.5% by 2025
Thailand	A7	2023	927.6	292.7	0	0	0	15% by 2018 and 61.8% by 2023
Timor-Leste	CP	2023	0.5	0.1	0	0	0	10% by 2015 and 78% by 2025
Togo	A7	2023	20.0	5.7	0	0	0	35% by 2020 and 100% by 2030
Tonga	A7	2023	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Trinidad and Tobago	A7	2023	46.0	10.1	0	0	0	35% by 2020 and 100% by 2030
Tunisia	CP	2023	40.7	17.9	0	0	0	15% by 2020 and 67.5% by 2025

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
Türkiye	A7	2023	551.5	2.3	0	0	0	100% by 2025
Turkmenistan	A7	2023	6.8	4.3	0	0	0	35% by 2020 and 67.5% by 2025
Tuvalu	A7	2023	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Uganda	CP	2023	0.2	0.1	0	0	0	35% by 2020 and 100% by 2030
United Arab Emirates (the)	A7	2023	557.1	359.0	0	0	0	
United Republic of Tanzania (the)	CP	2023	1.7	0.7	0	0	0	35% by 2020 and 100% by 2030
Uruguay	A7	2023	23.4	8.2	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Vanuatu	A7	2023	0.3	0.0	0	0	0	35% by 2020 and 100% by 2030
Venezuela (Bolivarian Republic of)	A7	2023	207.0	58.6	0	0	0	10% by 2015 and 100% by 2027
Viet Nam	A7	2023	221.2	137.5	0	0	0	10% by 2015, 35% by 2022 and 100% by 2030
Yemen	A7	2023	158.2	80.5	0	0	0	HPMP Cancelled
Zambia	A7	2023	5.0	2.1	0	0	0	35% by 2020 and 100% by 2030
Zimbabwe	A7	2023	17.8	3.6	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 below 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 ANALYSIS IN CO_2-EQUIVALENT TONNES*

Country	Group	Ratified Kigali Amendment **	Source	Baseline	2023 consumption data	Control measures addressed by KIPs (approval)
Afghanistan	I	No				
Albania	I	Yes	A7	883,849	1,904,288	10% of baseline in 2029
Algeria	I	No				
Angola	I	Yes	CP	3,878,000	11,662,591	
Antigua and Barbuda	I	No				
Argentina	I	Yes	A7	19,341,535	16,548,891	
Armenia	I	Yes	A7	475,254	664,716	10% of baseline in 2029
Bahamas (the)	I	Yes	A7	227,203	152,602	
Bahrain	II	Yes				
Bangladesh	I	Yes	A7	5,473,532	4,586,619	
Barbados	I	Yes	A7	295,419	163,309	
Belize	I	Yes	A7	502,263	383,298	
Benin	I	Yes	A7	1,875,057	901,445	
Bhutan	I	Yes	A7	13,105	2,313	
Bolivia (Plurinational State of)	I	Yes	CP	677,884	473,814	15% of baseline in 2029
Bosnia and Herzegovina	I	Yes	A7	1,066,653	1,854,872	
Botswana	I	Yes	A7	389,992	185,236	
Brazil	I	Yes	A7	79,503,644	37,407,024	
Brunei Darussalam	I	No	CP		343,383	
Burkina Faso	I	Yes	CP	1,049,523	442,731	30% of baseline in 2029
Burundi	I	Yes	A7	207,530	58,129	
Cabo Verde	I	Yes	A7	38,791	108,860	
Cambodia	I	Yes	A7	1,263,376	977,412	10% of baseline in 2029
Cameroon	I	Yes	A7	4,760,203	3,579,009	30% of baseline in 2030
Central African Republic (the)	I	No				
Chad	I	Yes	A7	3,573,612	3,346,060	
Chile	I	Yes	A7	6,698,107	4,943,654	10% of baseline in 2029
China	I	Yes	CP	905,144,032	769,350,307	
Colombia	I	Yes	A7	8,652,982	6,206,292	
Comoros (the)	I	Yes	A7	34,958	20,205	
Congo (the)	I	Yes	A7	504,649	261,413	48.7% of baseline in 2029
Cook Islands (the)	I	Yes	A7	6,461	13,152	
Costa Rica	I	Yes	A7	1,450,799	1,803,777	
Cote d'Ivoire	I	Yes		21,289,132		
Cuba	I	Yes	A7	1,030,662	1,368,669	10% of baseline in 2029
Democratic People's Republic of Korea (the)	I	Yes		1,906,435		
Democratic Republic of the Congo (the)	I	No				
Djibouti	I	Yes				
Dominica	I	No	A7		13,370	
Dominican Republic (the)	I	Yes	A7	3,834,089	3,343,222	10% of baseline in 2029
Ecuador	I	Yes	A7	3,179,294	3,160,869	14% of baseline in 2029
Egypt	I	Yes	CP		13,357,170	

Country	Group	Ratified Kigali Amendment **	Source	Baseline	2023 consumption data	Control measures addressed by KIPs (approval)
El Salvador	I	Yes	A7	964,120	1,122,854	10% of baseline in 2029
Equatorial Guinea	I	No	A7	271,411	88,978	
Eritrea	I	Yes				
Eswatini	I	Yes	A7	105,500	87,094	10% of baseline in 2029
Ethiopia	I	Yes	CP	347,035	98,314	
Fiji	I	Yes	CP	443,528	329,060	
Gabon	I	Yes	A7	2,182,210	763,753	
Gambia (the)	I	Yes	A7	271,515	260,165	10% of baseline in 2029
Georgia	I	Yes	A7	813,152	706,711	
Ghana	I	Yes	A7	1,805,702	715,052	58% of baseline in 2030
Grenada	I	Yes	CP	52,815	29,643	10% of baseline in 2029
Guatemala	I	Yes	A7	1,215,970	1,038,394	
Guinea	I	Yes	CP	1,826,976	1,391,073	
Guinea-Bissau	I	Yes	A7	722,391	589,847	
Guyana	I	No	A7	146,169	240,283	
Haiti	I	No	CP	149,322	83,633	
Honduras	I	Yes	A7	1,460,674	1,850,102	15.5% of baseline in 2029
India	II	Yes	CP		51,165,562	
Indonesia	I	Yes	A7	23,370,721	1,535,575	
Iran (Islamic Republic of)	II	No				
Iraq	II	No				
Jamaica	I	No				
Jordan	I	Yes	A7	2,808,101	1,671,435	54% of baseline in 2030
Kenya	I	Yes	A7	1,543,824	283,816	
Kiribati	I	Yes	A7	8,176	5,641	
Kuwait	II	No				
Kyrgyzstan	I	Yes	A7	450,382	314,555	10% of baseline in 2029
Lao People's Democratic Republic (the)	I	Yes	A7	324,226	283,415	10% of baseline in 2029
Lebanon	I	Yes	A7	2,556,533	1,518,706	
Lesotho	I	Yes	A7	103,221	27,069	
Liberia	I	Yes	A7	180,909	112,645	32% of baseline in 2029
Libya	I	No				
Madagascar	I	No	A7	1,719,334	1,641,815	
Malawi	I	Yes	A7	428,435	193,561	54% of baseline in 2030
Malaysia	I	Yes	A7	26,703,717	5,043,404	10% of baseline in 2029
Maldives	I	Yes	A7	434,219	317,953	
Mali	I	Yes	CP	399,935	-6,101	
Marshall Islands (the)	I	Yes	A7	10,824	31,619	
Mauritania	I	No				
Mauritius	I	Yes	A7	665,957	530,740	
Mexico	I	Yes	A7	76,982,664	50,254,745	10% of baseline in 2029
Micronesia (Federated States of)	I	Yes	A7	13,600	17,412	
Mongolia	I	Yes	A7	57,309	27,778	
Montenegro	I	Yes	A7	155,854	191,587	19.43% of baseline in 2029
Morocco	I	Yes	A7	2,134,520	4,579,557	
Mozambique	I	Yes	A7	655,255	1,156,651	10% of baseline in 2029
Myanmar	I	No	A7		863,290,051	
Namibia	I	Yes	CP	774,924	730,767	

Country	Group	Ratified Kigali Amendment **	Source	Baseline	2023 consumption data	Control measures addressed by KIPs (approval)
Nauru	I	Yes	A7	1,204	2,525	
Nepal	I	No				
Nicaragua	I	Yes		582,295		10% of baseline in 2029
Niger (the)	I	Yes	A7	1,222,358	608,920	35.2% of baseline in 2029
Nigeria	I	Yes	A7	15,187,779	22,809,651	
Niue	I	Yes	A7	201	0	
North Macedonia	I	Yes	A7	397,843	275,505	18.7% of baseline in 2029
Oman	II	No	A7		2,300,559	
Pakistan	II	No	CP		4,947,533	
Palau	I	Yes	A7	10,368	6,360	
Panama	I	Yes	A7	2,543,386	2,733,914	10% of baseline in 2029
Papua New Guinea	I	No	CP		365,343	
Paraguay	I	Yes	A7	1,684,582	1,546,758	10% of baseline in 2029
Peru	I	Yes	A7	2,735,721	3,075,377	10% of baseline in 2029
Philippines (the)	I	Yes	A7	11,903,687	8,073,416	
Qatar	II	No				
Republic of Korea (the)	I	Yes	A7	89,248,915	64,890,681	
Republic of Moldova (the)	I	Yes	CP	371,068	452,317	
Rwanda	I	Yes	A7	338,197	222,119	
Saint Kitts and Nevis	I	No				
Saint Lucia	I	Yes	A7	83,735	95,871	10% of baseline in 2029
Saint Vincent and the Grenadines	I	Yes	A7	25,280	16,970	
Samoa	I	Yes	A7	20,557	14,555	
Sao Tome and Principe	I	Yes	A7	71,039	28,976	
Saudi Arabia	II	No				
Senegal	I	Yes	A7	2,664,194	1,912,559	
Serbia	I	Yes	A7	3,261,874	8,446,488	
Seychelles	I	Yes	A7	249,400	223,975	10% of baseline in 2029
Sierra Leone	I	Yes	A7	350,905	298,480	10% of baseline in 2029
Singapore	I	Yes	A7	10,583,428	5,770,315	
Solomon Islands	I	Yes	A7	69,516	36,147	
Somalia	I	Yes	CP	1,276,672	142,092	
South Africa	I	Yes	A7	13,843,139	8,748,739	
South Sudan	I	No	A7	221,410	52,267	
Sri Lanka	I	Yes	CP	1,170,234	1,156,431	
Sudan (the)	I	No	CP	1,743,144	223,239	
Suriname	I	No		272,996		
Syrian Arab Republic	I	Yes	CP	18,150,706	12,671,604	
Thailand	I	Yes		59,270,951		
Timor-Leste	I	No				
Togo	I	Yes	A7	1,124,896	736,797	
Tonga	I	Yes	A7	7,676	7,415	
Trinidad and Tobago	I	Yes	A7	5,681,787	4,967,441	10% of baseline in 2029
Tunisia	I	Yes	CP	2,367,840	2,140,636	23.8% of baseline in 2030
Türkiye	I	Yes	A7	37,117,410	20,337,396	
Turkmenistan	I	Yes	A7	597,121	572,109	10% of baseline in 2029
Tuvalu	I	Yes	A7	2,206	1,816	
Uganda	I	Yes	CP	39,432	15,569.10	
United Arab Emirates (the)	II	Yes				

Country	Group	Ratified Kigali Amendment **	Source	Baseline	2023 consumption data	Control measures addressed by KIPs (approval)
United Republic of Tanzania (the)	I	Yes	CP	218,611	223,266	
Uruguay	I	Yes	A7	1,012,431	696,572	
Vanuatu	I	Yes	A7	20,482	21,568	
Venezuela (Bolivarian Republic of)	I	Yes	A7	5,157,619	1,449,844	
Viet Nam	I	Yes	A7	13,991,360	13,830,601	10% of baseline in 2029
Yemen	I	No				
Zambia	I	Yes	A7	699,513	823,415	
Zimbabwe	I	Yes	A7	1,210,624	842,264	

(*) 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.
(**) As of 1 July 2024.