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Item 5 of the provisional agenda¹

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 countries² 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 2022. The countries that submitted requests for funding to the 92nd meeting but not 2022 CP data are Argentina, Bosnia and Herzegovina, Cambodia, Chile, Cuba, the Gambia, India, Kiribati, Kuwait, Kyrgyzstan, Lesotho, Mongolia, Morocco, Nicaragua, the Niger, Niue, North Macedonia, Palau, the Philippines, Rwanda, Samoa, Thailand, Tonga, Tuvalu, the Bolivarian Republic of Venezuela, Viet Nam and Zambia.

¹ UNEP/OzL.Pro/ExCom/92/1

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.

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

Data	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
A7 (as of 4 April 2023)	147	147	147	147	147	147	147	147	146	23
CP (as of 11 April 2023)	145	144*	144	144	144	144	144	144	144	27

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

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 HCFCs⁵ 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 2021 CP data reports. As of 11 April 2023, only 27 CP data reports were submitted for 2022, and 24 of these reports contained HFC data; therefore, the analysis is made only up to 2021.⁷
- IV. Issues related to CP implementation reports
- V. Revised format of country programme data reports
- VI. 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 (for those A5 countries that had

⁴ As of December 2021, completed projects had phased out 289,332 ODP tonnes of consumption and 204,189 ODP tonnes of production. The completed projects were valued at US \$3.1 billion out of an approved total of approximately US \$3.56 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)).

⁷ The analysis in document UNEP/OzL.Pro/ExCom/91/8 was also based on data reported for 2021.

ratified the Kigali Amendment) 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).⁸ An MB production closure phase-out plan was approved providing for the country to produce at levels lower than those allowed under the Montreal Protocol.⁹ In 2021, zero ODP tonnes of MB were produced.

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
Argentina	125.7	134.5	95.8	100.3	65.6	88.3	66.3	56.6		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		395.1
Venezuela (Bolivarian Republic of)	86.1	37.2	14.3	15.0	1.9	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	217.4	32,988.9
HCFC-141b										
China	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										
China	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	217.4	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.

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 69th meeting of the Implementation Committee requested the country to provide an explanation for the deviations as a matter of urgency and no later than 15 March 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 70th meeting.¹¹

⁸ The Democratic People's Republic of Korea reported production of MB only in 1991 and 1995.

⁹ 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.

¹⁰ Stage II of the HPPMP for China was approved at the 86th meeting. The Agreement was approved at the 87th meeting.

¹¹ Recommendation 69/4 of document UNEP/OzL.Pro/ImpCom/69/5

B. Consumption sectorCFCs, halons, CTC, MB and TCA

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

10. Only two A5 countries have reported CTC consumption in 2021 for laboratory and analytical-use (China (132.5 ODP tonnes) and Republic of Korea (0.1 ODP tonnes)). Although the consumption was above the 2010 Montreal Protocol compliance target, the Parties have extended the global laboratory and analytical-use exemption until 31 December 2021 (decision XXXI/5).

11. Only one A5 country¹² has reported MB consumption in 2021, as shown in table 3. The Parties approved consumption of MB for critical uses for this country.

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

Country	Source	Year of latest consumption	Baseline	Latest consumption
Argentina*	A7	2021	411.3	6.7

* Allowable level of consumption of 6.79 ODP tonnes for 2021 per decision of the Meeting of the Parties XXXII/3.

12. Thirty-nine 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 16,334 ODP tonnes (264,048 metric tonnes), as shown in table 4. The three main HCFCs are: HCFC-22 (74.8 per cent of the total consumption measured in ODP tonnes), HCFC-141b (22.1 per cent) and HCFC-142b (2.9 per cent).

Table 4. Baseline and latest 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	1,792.0	35.8	76.7
HCFC-124	1,270.7	28.0	33.6	0.7	2.6
HCFC-141b	107,871.6	11,865.9	32,783.2	3,606.1	30.4
HCFC-142b	33,195.5	2,157.7	7,225.4	469.7	21.8
HCFC-22	394,504.8	21,697.8	222,214.2	12,221.8	56.3
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	264,048.4	16,334.2	45.6

* Including Republic of Korea (1,229.1 ODP tonnes), Singapore (76.1 ODP tonnes) and the United Arab Emirates (353.6 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 69th meeting of the Implementation Committee requested the country to provide an explanation for the deviations as a matter of urgency and no later than 15 March 2023, and, if appropriate, to submit a revised

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

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 70th meeting.¹³ In addition, at the 90th meeting of the Executive Committee, after consideration of the progress report on the implementation of stage I of the HPMP for the Democratic People's Republic of Korea, the Executive Committee requested the Secretariat to inform the Committee if the situation in relation to the country changed (decision 90/21).

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, the Executive Committee has approved stage I of the HPMPs for 145 countries,¹⁴ stage II for 107 countries and stage III for 11 countries, at a total value of US \$1.2 billion (approved in principle) of which US \$1 billion has been disbursed to address compliance with the Montreal Protocol control levels as follows:

- (a) Twenty-two countries (15 low-volume-consuming (LVC) and seven non-LVC countries), to address compliance up to 2020;
- (b) Thirty-four countries to address compliance up to 2025; and
- (c) Eighty-five countries¹⁵ to completely phase out HCFCs between 2020 and 2035.

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 76.5 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 consumption¹⁶ by type of HCFC 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	15.41	14.77	51.0
HCFC-124	26.42	26.14	15.26	10.90	58.4
HCFC-141	0.94	0.94	0.94	0.00	100.0

¹³ Recommendation 69/4 of document UNEP/OzL.Pro/ImpCom/69/5

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, 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, 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-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
HCFC-22	20,424.65	19,851.34	12,796.94	7,053.70	64.5
HCFC-225	2.82	2.82	1.43	1.39	50.7
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	24,932.85	7,670.86	76.5
HCFC-141b polyol**	0.00	657.00	596.11	54.33	90.7

* As of the 91st meeting.

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

HFCs

18. Of the 147 A5 countries, 113 countries have reported HFC A7 data in 2020, 2021 or 2022. Ninety-nine of the 113 countries have ratified the Kigali Amendment. Annex III to the present document includes information on 2020, 2021 and 2022 HFC A7 consumption data for these 113 countries and the 65 per cent of the HCFC baseline (measured in CO₂-equivalent) for all 147 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. Eighty-six (53 LVC and 33 non-LVC countries) of the 106 A5 countries¹⁷ that have ratified the Kigali Amendment¹⁸ 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 above, the 70th 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 data analysis

- In 2021, 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 and 2021; 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.
- 112 A5 countries (72 LVC and 40 non-LVC countries) reported HFC CP data for 2021.

¹⁷ Of the 106 countries that have ratified Kigali Amendment, six countries have not reported HFC data.

¹⁸ As of 7 February 2023.

¹⁹ Recommendation 69/4 of document UNEP/OzL.Pro/ImpCom/69/5

- HFC-32, HFC-125, HFC-134a, HFC-227ea, R-404A, R-507A and R-410A account for 93.6% of the total consumption in CO₂-equivalent; refrigeration servicing 33%, refrigeration manufacturing – AC 23%, and refrigeration manufacturing – others 22.1%.
- Most consumed HFCs including blends in 2021 were HFC-134a, R-404A, R-410A, HFC-143a, R-507A and R-407C for LVC countries, and R-410A, HFC-134a, HFC-227ea, HFC-32, R-404A, and R-507A 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 2011, the reported levels of the three main HCFCs produced in A5 countries have been above the levels of consumption except for HCFC-142b in 2011, as shown in table 6. The data reported shows a significant decrease in consumption and production in 2020 and 2021 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.

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

HCFC	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Production											
HCFC-22	21,665.7	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
HCFC-141b	12,311.5	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
HCFC-142b	1,759.8	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
Consumption											
HCFC-22	19,847.6	22,581.7	17,817.0	17,399.4	15,289.4	15,497.0	15,183.0	15,197.6	14,968.6	11,990.2	11,308.9
HCFC-141b	11,978.2	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
HCFC-142b	1,827.9	1,439.4	1,014.5	761.0	890.8	726.2	774.3	430.1	486.7	182.9	319.3
Production – consumption											
HCFC-22	1,818.1	970.7	952.0	2,416.9	1,493.2	694.2	542.9	863.7	990.7	593.3	96.6
HCFC-141b	333.3	1,148.5	602.3	1,211.9	474.0	893.3	764.6	585.1	567.3	922.2	409.9
HCFC-142b	(68.1)	1.0	87.5	315.8	333.5	384.3	341.2	326.2	329.3	235.4	153.0

B. Sector distribution of HCFC consumption

22. Table 7 presents the sector distribution of aggregated HCFC consumption for the period 2011 to 2021, 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 2021, the three sectors with the largest consumption of HCFCs (measured in ODP tonnes) were the refrigeration servicing (44.2 per cent of the total), foam (28.8 per cent of the total) and the refrigeration manufacturing sectors (24.8 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	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2021 (% of total)
China												
Aerosol	70.5	95.4	137.8	186.2	180.4	189.4		154.0	163.7			0.0
Foam	9,576.0	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	25.5
Firefighting												0.0
Refrigeration manufacturing	6,740.3	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	20.3
Refrigeration servicing	3,827.0	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	20.0
Solvent	514.1	524.1	466.0	484.8	418.5	413.4	397.0	375.1	385.0	308.0	275.0	1.8
Total for China	20,727.8	21,094.9	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	67.6
14 largest A5 consuming countries*												
Aerosol	82.8	75.0	123.8	19.3	87.3	42.4	5.5	26.9	7.8	1.1	2.6	0.0
Foam	3,517.3	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	1.8
Firefighting	9.8	6.0	5.4	4.0	4.0	4.2	4.9	2.3	2.9	2.0	2.4	0.0
Refrigeration manufacturing	2,674.2	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	4.0
Refrigeration servicing	3,246.7	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	16.3
Solvent	80.0	76.3	43.3	38.5	37.1	29.6	53.9	57.5	63.7	75.1	53.1	0.4
Total 14 largest consuming countries	9,610.8	11,381.3	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	22.5
129 remaining A5 countries												
Aerosol	0.1	0.2	0.7	0.4	0.3	0.1	0.5				0.1	0.0
Foam	1,061.5	1,258.8	963.2	916.0	869.0	826.9	731.2	497.5	476.3	381.6	218.1	1.5
Firefighting	9.4	13.3	8.6	11.2	14.0	11.1	7.7	3.2	4.4	1.4	1.9	0.0
Refrigeration manufacturing	703.8	400.7	314.3	290.2	248.9	236.1	217.3	179.0	180.1	98.6	73.7	0.5
Refrigeration servicing	2,178.1	2,372.2	1,995.8	2,011.0	1,861.3	1,695.3	1,608.5	1,557.3	1,524.1	1,324.3	1,189.5	7.9
Solvent	38.0	34.1	5.2	3.5	4.9	5.1	3.1	3.2	3.3	0.3	0.1	0.0
Total 129 remaining A5 countries	3,990.8	4,079.3	3,287.7	3,232.3	2,998.3	2,774.7	2,568.3	2,240.2	2,188.1	1,806.2	1,483.4	9.9
All A5 countries												
Aerosol	153.4	170.5	262.2	205.9	268.0	232.0	6.0	180.9	171.5	1.1	2.6	0.0
Foam	14,154.8	14,157.2	11,082.6	10,473.0	8,468.7	8,272.4	8,453.8	7,452.5	7,204.2	4,958.7	4,312.0	28.8
Firefighting	19.1	19.4	14.1	15.2	18.0	15.2	12.6	5.6	7.3	3.4	4.3	0.0
Refrigeration manufacturing	10,118.3	10,130.3	8,562.2	7,824.3	7,063.2	6,817.0	6,615.1	6,274.4	5,937.1	4,032.4	3,710.1	24.8
Refrigeration servicing	9,251.8	11,443.6	8,128.9	8,181.0	7,422.0	7,596.5	7,294.9	7,489.2	7,618.5	6,848.0	6,623.5	44.2
Solvent	632.0	634.5	514.5	526.9	460.4	448.2	454.0	435.8	451.9	383.4	328.2	2.2
Total all A5 countries	34,329.4	36,555.5	28,564.6	27,226.3	23,700.4	23,381.4	22,836.4	21,838.4	21,390.5	16,227.0	14,980.7	100.0
% of total for China	60.4	57.7	60.2	61.8	56.9	60.8	64.0	65.9	66.5	65.8	67.6	
% of total for 14 largest A5 consuming countries	28.0	31.1	28.3	26.3	30.4	27.3	24.8	23.9	23.3	23.1	22.5	

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2021 (% of total)
% of total for 129 remaining A5 countries	11.6	11.2	11.5	11.9	12.7	11.9	11.2	10.2	10.2	11.1	9.9	

*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	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
HCFC-22											
Aerosol	103.9	124.9	116.4	129.5	134.2	132.0	0.3****	102.3	91.1		0.1
Foam*	1,725.7	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
Firefighting	6.2	0.1									
Refrigeration manufacturing	9,270.7	9,474.9	8,012.7	7,518.0	6,747.4	6,590.5	6,330.0	5,999.3	5,760.2	3,892.4	3,655.0
Refrigeration servicing	8,711.8	10,873.6	7,882.3	8,019.8	7,229.8	7,255.5	7,165.1	7,413.4	7,500.4	6,768.9	6,450.2
Solvent	29.3	29.0		0.3	0.7	0.6	0.4	0.4	0.4	0.3	0.1
Total HCFC-22	19,847.6	22,581.7	17,817.0	17,399.4	15,289.4	15,497.0	15,183.0	15,197.6	14,968.6	11,990.2	11,308.9
HCFC-141b											
Aerosol	49.4	45.4	145.8	76.4	132.0	99.9	5.7****	78.7	80.4	1.1	2.5
Foam	10,412.3	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
Firefighting	6.0	9.3	6.7	7.6	9.3	5.2	6.3	1.8	3.0	0.7	
Refrigeration manufacturing**	814.7	629.6	529.6	282.9	294.2	204.8	264.9	255.8	159.7	125.6	40.0
Refrigeration servicing	98.7	96.4	75.7	66.5	54.6	108.8	37.1	26.4	28.0	22.7	24.5
Solvent	597.1	600.2	510.6	521.0	454.4	443.3	450.8	430.0	447.2	382.8	328.1
Total HCFC-141b	11,978.2	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
HCFC-142b											
Aerosol	0.1	0.2	0.0	0.0	1.8	0.0	0.0	0.0	0.0		
Foam***	1,401.7	990.2	863.7	686.2	773.8	608.3	701.0	398.5	412.3	134.7	179.0
Firefighting											
Refrigeration manufacturing	11.1	7.8	6.5	8.0	7.2	6.9	6.1	5.9	5.9	4.2	4.2
Refrigeration servicing	414.7	441.3	144.4	66.7	107.9	110.9	67.3	25.7	68.5	44.0	136.1
Solvent	0.3										
Total HCFC-142b	1,827.9	1,439.4	1,014.5	761.0	890.8	726.2	774.3	430.1	486.7	182.9	319.3
Other HCFCs	675.7	798.5	751.7	717.6	747.8	773.3	566.8	474.7	400.9	352.8	217.3
Total	34,329.4	36,555.5	28,564.6	27,226.3	23,700.4	23,381.4	22,836.4	21,838.4	21,390.5	16,227.0	14,980.7

* 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 the 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)).

26. The present document presents an analysis of the HFC consumption reported by the 112 A5 countries under their CP data reports for 2021. Of the 144 countries which submitted 2021 CP data as of 11 April 2023, 104 countries have ratified the Kigali Amendment. Only 97 of the 104 countries have provided HFC data in their 2021 CP reports on time for this analysis. In addition, 15 countries that have not ratified the Kigali Amendment have provided HFC data in their 2021 CP reports.

27. The sector distribution of aggregated HFC consumption for the 112 countries that have submitted 2021 CP data is presented in table 9. Of these 112 countries, 74 are LVC countries and they account for 77.7 per cent of the aggregated HCFC baseline for all LVC countries; 38 are non-LVC countries and they account for 79.1 per cent of the HCFC baselines for all non-LVC countries. The HFC data reported by LVC and non-LVC countries account for 2.8 per cent and 97.2 per cent, respectively, of the total HFC consumption data reported for the year 2021.

Table 9. Sector distribution of HFCs consumed in 2021 (metric tonnes)

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total***
				Other	AC	Total*				
HFC-125	0.1		1,080.4	0.3	882.3		3,719.2		683.7	9,936.9
HFC-134							519.4 [#]			519.4
HFC-134a	6,118.0	2,258.9		33,099.0	24,660.5	2,177.7	78,408.9	50.1	842.3	159,176.1
HFC-143a				18.1			549.8		216.9	784.8
HFC-152		0.1 [#]					1,000.0 [#]			1,000.1
HFC-152a	4,081.8	3,925.2		25.3			140.8	2,400.0	29.6	13,401.2
HFC-227ea	356.8	16.5	26,675.0				2.9 [#]		33.6	27,242.7
HFC-23 (use)**			9.9	10.9			5.2	1.1	638.1	676.4
HFC-236cb							0.01 [#]			0.01
HFC-236ea									73.3	73.3
HFC-236fa			36.9				0.6 [#]			570.3
HFC-245fa		8,893.4	0.8	300.0			20.3 [#]		18.7	9,820.5
HFC-32				5,400.0	89,816.2	32.6	13,816.0		723.4	123,625.4
HFC-365mfc	4.8	848.9				4.8 [#]				858.5
HFC-41				10.0					24.4	34.4
HFC-43-10mee								77.1	0.9	79.9
R-404A	0.4			5,674.5	744.8	123.0	11,829.0		178.3	19,741.7
R-406A							11.8			11.8
R-407A	0.2 [#]				0.1		2,527.3			2,532.0
R-407C				577.0	299.1	72.2	6,151.4		52.7	8,558.1
R-407F				5.0		17.9	44.1			67.0
R-407H							5.6			5.6
R-410A	0.8 [#]			40,438.7	53,744.0	771.2	43,384.4		146.9	142,648.2
R-413A							856.7			856.7
R-417A						0.5	211.9		1.0	213.4
R-417B							110.9			110.9
R-417C							16.2			16.2
R-422A							1.5			1.5
R-422B							0.3			0.3
R-422D							90.6			90.6
R-426A										60.0
R-427A							26.4			26.4
R-437A							182.5			182.5
R-438A							103.7		21.3	181.7
R-444B							0.4			0.4
R-448A				50.0			75.4		0.7	126.1
R-449A							67.3		3.2	70.4
R-449C							1.8			1.8
R-451A							1.6			1.6

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total***
				Other	AC	Total*				
R-452A				50.0			9.3		0.9	60.2
R-454B							0.1			0.1
R-454C							0.02			0.02
R-462A							1.7			1.7
R-467A							5.0			5.0
R-507A				11,249.4	0.9	165.5	3,321.0		666.7	15,979.7
R-507C							15.7			15.7
R-508B				270.2		1.5	16.5		0.0	290.0
R-513A				1.0			13.3		1.3	15.6
HFC-227ea in imported pre-blended polyol		4.0								4.0
HFC-245fa in imported pre-blended polyol		119.6								119.6
HFC-365mfc in imported pre-blended polyol		111.8				1.8				113.6
Other HFCs	28.2	1,718.3	0.0	0.0	7.6	0.0	180.6	0.0	49.4	1,984.1
Total	10,591.0	17,896.7	27,803.0	97,179.4	170,155.5	3,368.5	167,446.9	2,528.2	4,407.1	541,893.6
LVC	144.4	366.6	9.4	113.2	34.9	181.6	14,581.6			15,432.9
Non-LVC	10,446.5	17,530.1	27,793.5	97,066.2	170,120.6	3,186.9	152,865.3	2,528.2	4,407.1	526,460.7

*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.

#Possible reporting errors; this information is being checked with the countries to confirm correctness of this information.

28. In 2021, the five sectors with the largest consumption of HFCs (measured in metric tonnes) were refrigeration manufacturing – air-conditioning (AC) (31.4 per cent of the total), the refrigeration servicing (30.9 per cent), refrigeration manufacturing – others (17.9 per cent), fire fighting (5.1 per cent) and foam (3.3 per cent).

29. The sector distribution of aggregated HFC consumption in CO₂-equivalent is presented in table 10. HFC-32, HFC-125, HFC-134a, HFC-227ea, R-404A, R-507A and R-410A account for 93.6 per cent of the total consumption in CO₂-equivalent; refrigeration servicing, refrigeration manufacturing – AC, and refrigeration manufacturing – others, account for 33 percent, 23 per cent and 22.1 per cent of the total consumption, respectively.

Table 10. Sector distribution of HFCs consumed in 2021 ('000 tons CO₂-equivalent)

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total***
				Other	AC	Total*				
HFC-125	0		3,781	1	3,088		13,017		2,393	34,779
HFC-134							571			571
HFC-134a	8,749	3,230		47,332	35,265	3,114	112,125	72	1,205	227,622
HFC-143a				81			2,458		969	3,508
HFC-152							53			53
HFC-152a	506	487		3			17	298	4	1,662
HFC-227ea	1,149	53	85,893				9		108	87,721
HFC-23 (use)**			147	162			77	16	9,444	10,010
HFC-236cb							0			0
HFC-236ea									100	100
HFC-236fa			362				6			5,594
HFC-245fa		9,160	1	309			21		19	10,115
HFC-32				3,645	60,626	22	9,326		488	83,447
HFC-365mfc	4	674				4				682
HFC-41				1					2	3
HFC-43-10mee								126	1	131
R-404A	1			22,253	2,921	483	46,388		699	77,419
R-406A							23			23
R-407A	0				0		5,325			5,335

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total***
				Other	AC	Total*				
R-407C				1,024	531	128	10,914		93	15,181
R-407F				9		33	80			122
R-407H							8			8
R-410A	2			84,416	112,191	1,610	90,565		307	297,778
R-413A							1,078			1,078
R-417A						1	497		2	501
R-417B							336			336
R-417C							29			29
R-422A							5			5
R-422B							1			1
R-422D							247			247
R-426A										91
R-427A							56			56
R-437A							329			329
R-438A							273		48	411
R-444B							0			0
R-448A				69			104		1	175
R-449A							94		4	98
R-449C							2			2
R-451A							0			0
R-452A				107			20		2	129
R-454B							0			0
R-454C										0
R-462A							4			4
R-467A							7			7
R-507A				44,829	4	659	13,234		2,657	63,679
R-507C							63			63
R-508B				1,840		10	112		0	1,975
R-513A				1			8		1	10
HFC-227ea in imported pre-blended polyol		13								13
HFC-245fa in imported pre-blended polyol		123								123
HFC-365mfc in imported pre-blended polyol		89				1				90
Other HFCs	27	1,079					29		50	1,185
Total	10,438	14,908	90,183	206,080	214,624	6,065	307,513	511	18,599	932,501

*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 2021, in tons CO₂-equivalent terms, the most consumed HFCs including blends were HFC-134a (34.9 per cent of the total), R-404A (28.5 per cent), R-410A (16 per cent), HFC-143a (6.1 per cent), R-507A (5.6 per cent) and R-407C (4.3 per cent) for LVC countries, and R-410A (32.5 per cent of the total), HFC-134a (24 per cent), HFC-227ea (9.7 per cent), HFC-32 (9.2 per cent), R-404A (7.6 per cent), and R-507A (6.9 per cent) for non-LVC countries.

31. In addition, 17 countries (seven LVC and ten non-LVC countries) reported a total consumption of 693.47 metric tonnes of HFC-23 used in the fire fighting, refrigeration manufacturing – others, refrigeration servicing, solvent, and other sectors. These countries are Argentina, China, Costa Rica, India, Kiribati, Malaysia, Maldives, Mauritius, Mexico, Pakistan, Paraguay, Peru, the Philippines, Seychelles, Sri Lanka, Türkiye and Viet Nam.

32. Five countries (Argentina, China, India, the Democratic People's Republic of Korea and Mexico) have an obligation to report 2021 data on HFC-23 production and generation under the Kigali Amendment.

The amount of HFC-23 emissions generated, reported by those countries in 2021 is 33.31 mt, 1,089.94 mt, 0.00 mt, 8.40 mt and 128.52 mt, respectively.

III.3 Prices of HCFCs, HFCs and alternatives

33. The average prices of HCFCs, HFCs and alternatives reported by A5 countries since 2011 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 alternatives²³

Substance	Average price (US \$/kg)*											Range (US \$/kg)	Countries (2021)**
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
HCFC-22	9.28	10.06	9.24	10.08	10.07	9.25	10.18	10.24	9.64	10.54	11.02	2.10 (Mauritania) to 43.00 (Haiti)	126
HCFC-141b	6.73	6.73	6.65	7.77	7.08	10.00	9.40	10.99	8.23	12.78	8.66	2.31 (Iran (Islamic Republic of)) to 32.08 (Belize)	19
R-600a	20.97	20.49	20.20	18.02	15.23	15.98	15.80	16.03	16.72	18.30	19.05	1.68 (Iran (Islamic Republic of)) to 192.00 (the Bahamas)	92
R-290	22.23	15.60	14.38	21.26	19.08	16.13	16.48	15.92	21.80	23.85	21.17	3.02 (Indonesia) to 144.00 (the Bahamas)	70
HFC-134a	16.64	14.96	13.65	13.30	14.26	12.83	13.94	12.35	12.31	12.71	13.66	2.47 (Paraguay) to 65.00 (Niue)	122
R-404A	20.68	18.71	15.41	15.11	15.42	15.32	15.97	14.77	13.76	14.28	16.01	4.50 (Malaysia) to 52.00 (Turkmenistan)	123
R-407C	21.36	19.04	16.06	15.19	13.97	12.71	13.94	13.71	13.02	13.78	15.44	3.38 (Paraguay) to 136.26 (Chile)	90
R-410A	21.70	19.91	16.05	15.28	14.61	16.44	15.47	14.78	14.50	14.68	16.33	3.48 (Iran (Islamic Republic of)) to 150.26 (Chile)	122
R-507A	20.78	15.84	13.59	12.21	11.65	11.76	13.33	13.07	12.99	13.58	16.36	4.26 (Indonesia) to 129.24 (Chile)	63

* All zero entries were excluded.

** Number of A5 countries that reported prices in 2021.

IV. Issues related to CP implementation reports

IV.1 Timely submission of CP data reports

34. In reviewing the timely submission of the CP data reports, the Secretariat noted that, as shown in table 12, the submission rate in 2021 is almost the same as 2020. 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.

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)).

Table 12. Monthly rates of submission of CP data reports (as at 11 April 2023)

Month	2014		2015		2016		2017		2018		2019		2020		2021		2022	
	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*
January			1	0.69			3	2.08									2	1.39
February	2	1.39	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	15	11.81	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	48	45.14	27	45.83	49	46.53	60	50.00	64	59.03	63	50.69	51	44.44	60	56.25	8	18.75
May	24	61.81	22	61.11	26	64.58	39	77.08	30	79.86	29	70.83	42	73.61	27	75.00		
June	18	74.31	14	70.83	10	71.53	15	87.50	4	82.64	4	73.61	7	78.47	6	79.17		
July	9	80.56	8	76.39	7	76.39	3	89.58	2	84.03	8	79.17	4	81.25	2	80.56		
August	3	82.64	5	79.86	2	77.78	7	94.44	3	86.11	5	82.64	4	84.03	5	84.03		
September	7	87.50	8	85.42	19	90.97	4	97.22	6	90.28	10	89.58	6	88.19	5	87.50		
October	9	93.75	8	90.97	7	95.83	1	97.92	10	97.22	2	90.97	8	93.75	6	91.67		
November			1	91.67	2	97.22	1	98.61	1	97.92	3	93.06	0	93.75	4	94.44		
December	2	95.14							1	98.61	8	98.61	0	93.75	7	99.31		
After Dec.	7	100.00	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		144		27	
Outstanding	0		0		0		0		0		0		0		0		117	

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

** Submission as of 11 April 2023. Submissions after this date are not included in the analysis (Albania, Bahrain, Benin, Brunei Darussalam, Colombia, Cook Islands, Ecuador, Egypt, Eswatini, Georgia, Guatemala, Honduras, Indonesia, Lebanon, Maldives, Mauritania, Paraguay, Republic of Moldova (the), Saudi Arabia, Suriname, Togo, Tunisia and Uruguay)

Data discrepancies between CP data reports and A7 data

35. The review of the 2021 import data reported under A7 and CP reports revealed potential data discrepancies, as shown in table 13.

Table 13. Differences between 2021 A7 and CP consumption data (ODP tonnes)

Country	ODS	Agency for IS	A7 data	CP data	Difference	HCFC-141b polyol*	Remarks
Botswana	HCFC	UNEP	1.2	0.0	-1.2	0.0	Issue being clarified with UNEP pending its response.
Honduras	HCFC	UNEP	6.6	3.4	-3.3	0.0	Issue being clarified with UNEP pending its response.
Kuwait	HCFC	UNEP	224.5	224.4	-0.1	25.9	Issue being clarified with UNEP pending its response.
Nigeria	MB	UNDP	6.0	0.0	-6.0		CP data is correct. A7 Data will be revised.
Somalia	HCFC	UNEP	13.8	10.5	-3.4	0.08	Issue being clarified with UNEP pending its response.

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

36. 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.

V. Revised format of country programme data reports

37. At the 84th meeting, when the Executive Committee approved the revised CP data format (see paragraph 25 above), the Executive Committee also requested the Secretariat to prepare a report on the outcome of the use of the revised format for CP data reports during the trial period for consideration at the first meeting of 2023 (decision 84/7(e)).

38. In response to decision 84/7(e), based on the review of HFC data reported for 2019, 2020 and 2021, the Secretariat noted the following outcomes:

- (a) There were some data reporting errors such as errors in quantities of HFCs, reporting of HFCs in incorrect uses (e.g., use of HFC-245fa in refrigeration and air-conditioning servicing), incorrect substance reported (e.g., HFC-134 instead of HFC-134a, HFC-152 instead of HFC-152a), and consumption reported as HFC components instead of total HFCs in blends);
- (b) For those countries that reported manufacture of HFC blends in their countries, since the quantities of the individual HFCs that are used for manufacturing blends are reported under “others” in Section B of the report, there could be double counting of HFC use (i.e., use reported in “others” for the relevant HFC (pure) components and use reported in “blends”);
- (c) HFC data submitted by the countries to the Ozone Secretariat under A7 of the Protocol could include pure HFCs or HFC blends in line with decision XXX/10. Countries may therefore choose to report pure HFCs after estimating the quantities of individual HFCs from the blends; this poses challenges in reconciling HFC data reported under A7 and under CP reports at the country level, as HFCs contained in blends are reported as blends under CP data reports and the reconciliation of data reported in HFC blends in total, with A7 data, is important for the project review process, in particular for Kigali HFC implementation plans.

39. Taking into account the outcomes of the use of the revised format during this trial period and inputs obtained during the Inter-agency coordination meeting,²⁴ the Secretariat is proposing the following changes to Section B that are in red font to facilitate the reporting process of the country programme:

- (a) The heading that originally indicated “Refrigeration” is changed to “Refrigeration and air-conditioning”;
- (b) The columns under “Manufacturing” are changed to “Refrigeration”, “Air-conditioning”, and “Other unidentified manufacturing” for providing clarity on the relevant information needed relating to manufacturing;
- (c) In footnote 1, the term “HFC” is added to clarify that the total quantities of blends including all components of that blend should be reported and this information should not be duplicated in the cells relating to the individual HFCs in those blends;
- (d) Footnote 5 is modified to clarify that the quantity in “Other unidentified manufacturing” should be reported only if the break-down in manufacturing uses in refrigeration or air-conditioning is not available;
- (e) The note “***” is added to a number of substances to indicate that these substances are not commonly used; this reference would facilitate more accurate data reporting.

40. The draft revised format for Section B is presented in Annex IV to the present document. The details of the reporting changes are presented in the practical manual for CP data reporting.

41. The Secretariat is currently developing the online country programme reporting as part of the knowledge management system. The online reporting system will be available in 2024 for 2023 country programme data reporting.

²⁴ Montreal, 8-9 March 2023

VI. Recommendation

42. 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/92/5, including that, as at 11 April 2023, 27 countries had submitted 2022 CP data and 117 countries had not done so;
- (b) 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 2021 as indicated in table 13 of document UNEP/OzL.Pro/ExCom/92/5 and to report back no later than the 93rd meeting;
 - (ii) To approve the draft updated revised format of Section B of CP data reports as contained in Annex IV to the present document; and
 - (iii) To request the Secretariat to update the practical manual for CP data reporting to reflect the changes in Section B after the 92nd meeting.

Annex I

MB CONSUMPTION AND PRODUCTION FOR QPS APPLICATIONS

Country	Year of latest consumption	Latest consumption (ODP tonnes)
Consumption		
Argentina	2021	26.4
Bahrain	2021	6.8
Brazil	2021	52.5
Chile	2021	45.2
China	2021	441.1
Costa Rica	2021	10.5
Dominican Republic (the)	2022	9.0
Egypt	2021	160.8
El Salvador	2021	115.8
Ethiopia	2021	7.7
Fiji	2021	7.7
Guatemala	2021	13.8
Honduras	2021	7.2
India	2021	932.0
Indonesia	2021	48.0
Iran (Islamic Republic of)	2021	13.2
Jamaica	2022	2.9
Jordan	2021	4.8
Kenya	2021	0.9
Malaysia	2021	70.2
Mexico	2022	155.9
Morocco	2021	6.0
Myanmar	2021	15.6
Nicaragua	2021	8.4
Pakistan	2021	220.8
Peru	2022	1.8
Philippines (the)	2021	24.5
Republic of Korea (the)	2021	227.8
Saudi Arabia	2021	9.0
Singapore	2021	65.8
South Africa	2021	28.8
Sri Lanka	2021	21.2
Syrian Arab Republic	2021	3.0
Thailand	2021	98.5
Türkiye	2021	33.6
Turkmenistan	2021	12.0
United Arab Emirates (the)	2021	25.8
Uruguay	2021	46.8
Viet Nam	2021	507.1
Total consumption		3,488.9
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	2021	6.0	2.0	0	0	0	35% by 2020 and 67.5% by 2025
Algeria	A7	2021	62.1	38.3	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	A7	2021	0.3	0.1	0	0	0	HPMP cancelled
Argentina	A7	2021	400.7	164.2	0	0	0	17.5% by 2017 and 50% by 2022
Armenia	A7	2022	7.0	1.4	0	0	0	10% by 2015 and 66.6% by 2020
Bahamas (the)	A7	2021	4.8	2.1	0	0	0	35% by 2020 and 100% by 2030
Bahrain	A7	2021	51.9	24.6	0	0	0	35% by 2020 and 73.5% by 2025
Bangladesh	A7	2021	72.6	46.9	0	0	0	30% by 2018 and 67.5% by 2025
Barbados	A7	2021	3.7	0.5	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	2021	23.8	12.9	0	0	0	35% by 2020 and 100% by 2030
Bhutan	A7	2021	0.3	0.0	0	0	0	100% by 2025
Bolivia (Plurinational State of)	A7	2021	6.1	1.1	0	0	0	35% by 2020 and 100% by 2030
Bosnia and Herzegovina	A7	2021	4.7	0.0	0	0	0	35% by 2020 and 100% by 2026
Botswana	A7	2021	11.0	1.2	0	0	0	35% by 2020 and 100% by 2030
Brazil	A7	2021	1,327.3	490.9	0	0	0	10% by 2015 and 45% by 2021
Brunei Darussalam	A7	2021	6.1	3.8	0	0	0	35% by 2020 and 100% by 2030
Burkina Faso	A7	2022	28.9	5.3	0	0	0	35% by 2020
Burundi	A7	2022	7.2	0.0	0	0	0	35% by 2020
Cabo Verde	A7	2021	1.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Cambodia	A7	2021	15.0	5.5	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	2021	12.0	6.1	0	0	0	HPMP cancelled
Chad	A7	2022	16.1	9.9	0	0	0	35% by 2020 and 100% by 2030
Chile	A7	2021	87.5	14.8	0	0	0	10% by 2015, 65% 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
China	A7	2021	19,269.0	10,128.2	0	0	0	10% by 2015 and 76% by 2026
Colombia	A7	2021	225.6	25.4	0	0	0	10% by 2015, 65% by 2021 and 100% by 2030
Comoros (the)	A7	2021	0.1	0.0	0	0	0	35% by 2020
Congo (the)	A7	2021	10.1	6.2	0	0	0	35% by 2020
Cook Islands (the)	A7	2021	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Costa Rica	CP	2022	14.1	3.9	0	0	0	35% by 2020 and 97.5% by 2030
Cote d'Ivoire	A7	2021	63.8	35.8	0	0	0	35% by 2020
Cuba	A7	2021	16.9	0.8	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	2021	66.2	1.2	0	0	0	10% by 2017 and 100% by 2030
Djibouti	A7	2021	0.7	0.3	0	0	0	35% by 2020
Dominica	A7	2021	0.4	0.1	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	2021	23.5	10.2	0	0	0	35% by 2020 and 100% by 2030
Egypt	A7	2021	386.3	209.2	0	0	0	25% by 2018 and 70% by 2025
El Salvador	A7	2021	11.7	4.0	0	0	0	35% by 2020 and 100% by 2030
Equatorial Guinea	A7	2021	6.3	0.9	0	0	0	35% by 2020
Eritrea	CP	2022	1.1	0.6	0	0	0	35% by 2020 and 100% by 2030
Eswatini (the Kingdom of)	A7	2021	1.7	0.4	0	0	0	35% by 2020 and 100% by 2030
Ethiopia	A7	2021	5.5	3.4	0	0	0	35% by 2020 and 100% by 2030
Fiji	A7	2021	5.7	0.1	0	0	0	35% by 2020 and 100% by 2030
Gabon	A7	2021	30.2	10.7	0	0	0	35% by 2020
Gambia (the)	A7	2021	1.5	0.2	0	0	0	35% by 2020 and 100% by 2030
Georgia	A7	2021	5.3	0.9	0	0	0	35% by 2020 and 100% by 2030
Ghana	A7	2021	57.3	16.6	0	0	0	35% by 2020 and 100% by 2030
Grenada	A7	2021	0.8	0.1	0	0	0	35% by 2020 and 100% by 2030
Guatemala	A7	2021	8.3	2.9	0	0	0	35% by 2020 and 100% by 2030
Guinea	A7	2022	22.6	1.2	0	0	0	35% by 2020
Guinea-Bissau	A7	2021	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

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
Haiti	A7	2021	3.6	1.1	0	0	0	HPMP cancelled
Honduras	A7	2021	19.9	6.6	0	0	0	35% by 2020 and 100% by 2030
India	A7	2021	1,608.2	218.5	0	0	0	10% by 2015, 60% by 2023 and 100% by 2030
Indonesia	A7	2021	403.9	172.8	0	0	0	20% by 2018 and 55% by 2023
Iran (Islamic Republic of)	A7	2021	380.5	123.8	0	0	0	10% by 2015 and 75% by 2023
Iraq	A7	2022	108.4	0.0	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	2021	83.0	9.2	0	0	0	20% by 2017 and 50% by 2022
Kenya	CP	2022	52.2	3.0	0	0	0	21.1% by 2017 and 100% by 2030
Kiribati	A7	2021	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Kuwait	A7	2021	418.6	224.5	0	0	0	39.2% by 2020 and 67.5% by 2025
Kyrgyzstan	A7	2021	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	2021	2.3	0.8	0	0	0	35% by 2020 and 100% by 2030
Lebanon	A7	2021	73.5	26.1	0	0	0	18% by 2017 and 75% by 2024
Lesotho	A7	2021	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	2021	118.4	75.0	0	0	0	10% by 2020 and 80.5% by 2027
Madagascar	A7	2021	16.6	9.5	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	2021	515.8	181.5	0	0	0	15% by 2016 and 42.9% by 2022
Maldives	A7	2021	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	2021	0.2	0.0	0	0	0	35% by 2020 and 100% by 2030
Mauritania	A7	2021	20.5	13.1	0	0	0	67.5% by 2025
Mauritius	A7	2021	8.0	1.4	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
Micronesia (Federated States of)	A7	2021	0.2	0.0	0	0	0	35% by 2020 and 100% by 2030
Mongolia	A7	2021	1.4	0.2	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
Montenegro	A7	2021	0.8	0.1	0	0	0	35% by 2020 and 100% by 2025
Morocco	A7	2021	51.4	17.6	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	2021	4.3	1.5	0	0	0	35% by 2020
Namibia	A7	2021	8.4	0.7	0	0	0	100% by 2025
Nauru	A7	2021	0.0	0.0	0	0	0	35% by 2020 and 100% by 2030
Nepal	A7	2021	1.1	0.2	0	0	0	35% by 2020 and 100% by 2030
Nicaragua	A7	2021	6.8	2.5	0	0	0	35% by 2020 and 100% by 2030
Niger (the)	A7	2021	16.0	9.1	0	0	0	35% by 2020 and 100% by 2030
Nigeria	A7	2021	344.9	150.2	0	0	0	10% by 2015, 51.35% by 2023 and 67.5% by 2025
Niue	A7	2021	0.0	0.0	0	0	0	35% by 2020 and 100% by 2030
North Macedonia	A7	2021	1.8	0.0	0	0	0	35% by 2020 and 100% by 2028
Oman	CP	2022	31.5	12.8	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Pakistan	A7	2021	248.1	120.6	0	0	0	10% by 2015, 50% by 2020 and 100% by 2030
Palau	A7	2021	0.2	0.0	0	0	0	35% by 2020 and 100% by 2030
Panama	CP	2022	24.8	10.1	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Papua New Guinea	A7	2021	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	2021	162.0	60.4	0	0	0	10% by 2015 and 50% by 2021
Qatar	A7	2021	86.9	56.5	0	0	0	20% by 2015 and 67.5% by 2026
Republic of Korea (the)	A7	2021	1,908.0	1,053.1	0	0	0	
Republic of Moldova (the)	A7	2021	1.0	0.5	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Rwanda	A7	2021	4.1	1.5	0	0	0	35% by 2020 and 100% by 2030
Saint Kitts and Nevis	A7	2021	0.5	0.0	0	0	0	35% by 2020
Saint Lucia	A7	2021	1.1	0.2	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

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
Samoa	A7	2021	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	2021	1,468.7	879.9	0	0	0	40% by 2020
Senegal	A7	2021	36.2	11.9	0	0	0	35% by 2020 and 81.1% by 2025
Serbia	A7	2021	8.4	4.6	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	2021	1.7	0.6	0	0	0	35% by 2020 and 100% by 2030
Singapore	A7	2021	216.1	53.3	0	0	0	
Solomon Islands	A7	2021	2.0	0.1	0	0	0	35% by 2020 and 100% by 2030
Somalia	A7	2021	45.1	13.8	0	0	0	35% by 2020
South Africa	A7	2021	369.7	88.7	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)	A7	2021	52.7	9.4	0	0	0	30% by 2017, 75% by 2020 and 100% by 2030
Suriname	A7	2021	2.0	0.0	0	0	0	35% by 2020
Syrian Arab Republic	A7	2021	135.0	65.4	0	0	0	67.5% by 2025
Thailand	A7	2021	927.6	279.0	0	0	0	15% by 2018 and 61.8% by 2023
Timor-Leste	A7	2021	0.5	0.2	0	0	0	10% by 2015 and 78% by 2025
Togo	A7	2021	20.0	8.8	0	0	0	35% by 2020 and 100% by 2030
Tonga	A7	2021	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Trinidad and Tobago	A7	2021	46.0	8.8	0	0	0	35% by 2020 and 100% by 2030
Tunisia	A7	2021	40.7	20.7	0	0	0	15% by 2020 and 67.5% by 2025
Türkiye	A7	2021	551.5	3.5	0	0	0	100% by 2025
Turkmenistan	CP	2022	6.8	4.0	0	0	0	35% by 2020 and 67.5% by 2025
Tuvalu	A7	2021	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Uganda	A7	2021	0.2	0.1	0	0	0	35% by 2020 and 100% by 2030
United Arab Emirates (the)	A7	2021	557.1	359.5	0	0	0	
United Republic of Tanzania (the)	A7	2021	1.7	0.9	0	0	0	35% by 2020 and 100% by 2030
Uruguay	A7	2021	23.4	11.5	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Vanuatu	A7	2021	0.3	0.0	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
Venezuela (Bolivarian Republic of)	A7	2021	207.0	0.0	0	0	0	10% by 2015, 42% by 2020 and 100% by 2027
Viet Nam	A7	2021	221.2	141.8	0	0	0	10% by 2015 and 35% by 2022
Yemen	A7	2021	158.2	98.8	0	0	0	HPMP cancelled
Zambia	A7	2021	5.0	2.2	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 METRIC TONNES - CO₂-EQUIVALENT

Country	Ratified Kigali Amendment	65% of HCFC baseline	2020	2021	2022
Afghanistan		503,248			
Albania	Yes	127,303	748,209	155,940	
Algeria		1,258,456			
Angola	Yes	341,185	3,812,357	757,864	
Antigua and Barbuda		6,477			
Argentina	Yes	6,628,416	12,190,682	8,933,937	
Armenia	Yes	149,051	195,790	317,041	465,778
Bahamas (the)		102,997			
Bahrain		1,102,794			
Bangladesh	Yes	1,196,417	4,048,769	4,292,556	
Barbados	Yes	79,176	341,967	180,981	
Belize		57,879			121,648
Benin	Yes	508,848	1,253,696	1,279,095	
Bhutan	Yes	6,610	2,876	7,941	
Bolivia (Plurinational State of)	Yes	113,214	425,800	347,983	
Bosnia and Herzegovina	Yes	73,599		599,128	
Botswana	Yes	235,347	173,589	173,589	
Brazil	Yes	19,446,375	39,896,041	50,519,115	
Brunei Darussalam		130,143			
Burkina Faso	Yes	617,810	509,029	384,485	401,625
Burundi	Yes	152,004	51,774	56,843	57,963
Cabo Verde	Yes	21,765	22,797	3,171	
Cambodia	Yes	320,249	885,328	955,336	
Cameroon	Yes	1,522,510	3,355,712	3,153,776	3,203,591
Central African Republic (the)		256,406			
Chad	Yes	344,362	28,386,005	3,217,693	5,374,554
Chile	Yes	1,193,922	4,465,255	4,957,950	
China	Yes	312,831,196	529,799,116	580,648,012	
Colombia	Yes	2,188,294	5,064,307	5,086,999	
Comoros (the)	Yes	2,918	35,941	40,697	
Congo (the)	Yes	216,947			
Cook Islands (the)	Yes	1,049	1,521	6,647	
Costa Rica	Yes	240,181	1,098,990	954,530	
Cote d'Ivoire	Yes	1,363,929	25,276,054	25,276,054	
Cuba	Yes	316,671	739,658	519,644	
Democratic People's Republic of Korea (the)	Yes	1,393,541	496,210	510,510	
Democratic Republic of the Congo (the)		1,235,104			
Djibouti		13,800			
Dominica		8,514		3,435	
Dominican Republic (the)	Yes	1,081,344	2,472,708	2,071,592	3,714,281
Ecuador	Yes	485,550	2,211,928	1,928,328	
Egypt		6,071,380			
El Salvador	Yes	191,353		985,085	
Equatorial Guinea		134,539	280,362	73,076	
Eritrea	Yes	23,183			
Eswatini (the Kingdom of)	Yes	36,895	32,388	104,320	
Ethiopia	Yes	117,650	281,607	306,842	

Country	Ratified Kigali Amendment	65% of HCFC baseline	2020	2021	2022
Fiji	Yes	122,666	224,248	239,165	
Gabon	Yes	645,840	1,805,193	2,063,886	
Gambia (the)	Yes	33,454	173,033	282,417	
Georgia		112,632			
Ghana	Yes	1,249,582	471,391	550,143	
Grenada	Yes	17,759	32,006	43,461	
Guatemala		158,626	972,320	892,087	
Guinea	Yes	483,647	878,385	1,477,938	
Guinea Bissau	Yes	60,002	743,866	633,559	
Guyana		36,490	60,724	112,245	156,067
Haiti		77,649	75,275	98,829	
Honduras	Yes	393,309	1,061,901	1,082,441	
India	Yes	19,692,852		41,787,290	
Indonesia	Yes	6,297,991			
Iran (Islamic Republic of)		4,428,472			
Iraq		2,318,608			
Jamaica		286,974			
Jordan	Yes	1,282,449	1,342,570	2,687,243	
Kenya		1,115,504	603,944	365,395	
Kiribati	Yes	1,141	7,063	10,471	
Kuwait		7,804,024			
Kyrgyzstan	Yes	74,542	291,736	363,430	
Lao People's Democratic Republic (the)	Yes	49,325	76,944	70,405	
Lebanon	Yes	929,809	1,743,012	1,604,665	
Lesotho	Yes	73,744	51,406	26,230	
Liberia	Yes	112,297	73,313	85,249	47,273
Libya		1,999,326			
Madagascar		532,813	1,090,927	1,437,172	
Malawi	Yes	230,947	196,209	196,557	199,697
Malaysia	Yes	8,202,355	14,569,917	13,444,256	
Maldives	Yes	85,550	289,705	315,640	
Mali	Yes	320,302	81,129	50,780	103,440
Marshall Islands (the)	Yes	4,694	7,067	4,380	
Mauritania		436,482			
Mauritius	Yes	169,182	503,851	336,000	
Mexico	Yes	13,032,787	48,211,034	47,994,455	95,644,142
Micronesia (Federated States of)	Yes	2,953	8,341	8,582	
Mongolia	Yes	27,912	24,183	31,701	
Montenegro	Yes	16,324	170,362	108,905	
Morocco	Yes	883,562			
Mozambique	Yes	185,593	348,600	438,536	621,850
Myanmar		91,273			
Namibia	Yes	174,500	796,190	352,865	
Nauru	Yes	212			
Nepal		23,530			
Nicaragua	Yes	133,865	462,178	503,053	
Niger (the)	Yes	341,638	985,514	843,475	
Nigeria	Yes	5,729,101	2,620,048	8,381,305	
Niue	Yes	176	0	74	
North Macedonia	Yes	38,570	360,629	346,785	
Oman		655,323	1,821,602	2,185,789	
Pakistan		2,945,839	9,456,060		

Country	Ratified Kigali Amendment	65% of HCFC baseline	2020	2021	2022
Palau	Yes	3,494	7,676	6,626	
Panama	Yes	489,863	1,457,267	1,946,551	
Papua New Guinea		69,182			
Paraguay	Yes	382,341	1,461,774	876,188	1,563,023
Peru	Yes	545,717	2,179,188	1,605,215	2,785,607
Philippines (the)	Yes	2,539,454	7,170,780	6,011,399	
Qatar		1,868,239			
Republic of Korea (the)	Yes	25,217,543			
Republic of Moldova (the)		20,001		338,691	
Rwanda	Yes	84,188	268,616	266,728	
Saint Kitts and Nevis		10,494			
Saint Lucia	Yes	23,013		30,454	
Saint Vincent and the Grenadines	Yes	6,036	16,509	25,807	36,101
Samoa	Yes	5,412	24,593	9,997	
Sao Tome and Principe	Yes	45,825	17,696	29,038	28,907
Saudi Arabia		25,777,727			
Senegal	Yes	773,290	1,829,973	1,912,559	
Serbia	Yes	179,528	2,644,622	1,787,306	
Seychelles	Yes	29,129	140,392	233,760	286,660
Sierra Leone	Yes	35,724	250,376	308,252	
Singapore	Yes	3,704,181		6,229,582	
Solomon Islands	Yes	41,230			
Somalia	Yes	567,810	894,881	883,056	
South Africa	Yes	5,165,272	8,221,905	9,164,240	
South Sudan		88,238	172,588	166,868	60,060
Sri Lanka	Yes	264,865	478,419	1,149,247	
Sudan (the)		431,192	1,244,369	1,293,587	
Suriname		42,410	237,803	118,970	
Syrian Arab Republic	Yes	1,741,639	22,940,500	13,883,500	
Thailand		16,228,856			
Timor-Leste		10,680			
Togo	Yes	426,581	607,767	635,045	
Tonga	Yes	3,000	3,930	6,663	
Trinidad and Tobago	Yes	940,390	4,425,345	5,201,433	
Tunisia	Yes	842,287	1,719,614	1,223,752	
Türkiye	Yes	8,654,283	14,913,758	21,777,055	
Turkmenistan	Yes	146,020	586,253	510,256	
Tuvalu	Yes	1,933	296	343	
Uganda	Yes	3,142	48,950	46,209	
United Arab Emirates (the)		7,726,879			
United Republic of Tanzania (the)	Yes	36,211	252,760		
Uruguay	Yes	473,681	613,574	431,118	
Vanuatu	Yes	6,080	11,915	13,781	
Venezuela (Bolivarian Republic of)	Yes	3,758,330	753,261	799,335	
Viet Nam	Yes	3,806,696	9,414,958	10,470,044	
Yemen		3,367,326			
Zambia	Yes	105,826	293,732	672,741	
Zimbabwe	Yes	364,502	1,009,387	733,188	795,792

*As of 7 February 2023.

Annex IV

REVISED SECTION B FOR COUNTRY PROGRAMME DATA REPORTING

REVISED COUNTRY PROGRAMME REPORT FORMAT (2019 DATA AND BEYOND)

REVISED COUNTRY PROGRAMME REPORT FORMAT (2019 DATA AND BEYOND)																			
COUNTRY:		YEAR: January to December of the year										YYYY							
SECTION B. ANNEX F - DATA ON CONTROLLED SUBSTANCES (METRIC TONNES)																			
NOTE: Data entry is required in UNSHADED cells only																			
Substance	Aerosol	Foam	Fire Fighting	Use by Sector					Solvent	Other ³	TOTAL	Import	Export	Production	Manufacturing of Blends*	Import quotas	If imports are banned, indicate date ban commenced (DD/MM/YYYY)	Remarks ⁴	
				Refrigeration and air-conditioning			Servicing	Other ⁵											Other ⁵
				Refrigeration	Air-conditioning	Other unidentified manufacturing ⁵													
Annex F																			
Controlled Substances																			
HFC-32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-41**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-134**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-134a	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-143**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-143a	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-152**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-152a	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-227ea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-236cb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-236ea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-236fa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-245ca	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-245fa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-365mfc	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-43-10mee	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-23 (use)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
Sub-Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
Blends (Mixed of Controlled Substances) ¹																			
R-404A (HFC-125=44%, HFC-134a=4%, HFC-143a=52%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
R-407A (HFC-32=20%,HFC-125=40%,HFC-134a=40%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
R-407C (HFC-32=23%,HFC-125=25%, HFC-134a=52%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
R-410A (HFC-32=50%, HFC-125=50%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
R-507A (HFC-125=50%, HFC-143a=50%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
R-508B (HFC-23=46%, PFC-116=54%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
Others: ²	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
Others: ²	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
Sub-Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
Others																			
HFC-245fa in imported pre-blended polyol	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
HFC-365mfc in imported pre-blended polyol	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
Sub-Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00				

1 When reporting HFC blends/mixtures, reporting of controlled substances should not be duplicated. For the CP report, countries should report use of individual controlled substances and quantities of blends/mixtures used, separately, while ensuring that the amounts of controlled substances are not reported more than once.

2 If a non-standard blend not listed in the above table is used, please indicate the percentage of each constituent controlled substance of the blend being reported in the remarks column.

3 Uses in other sectors that do not fall specifically within the listed sectors in the table.

4 Provide explanation if total sector use and consumption (import-export+production) is different (e.g. stockpiling).

5 Only if break-down of consumption in refrigeration and air-conditioning manufacturing is not available, information in "Other unidentified manufacturing" may be provided.

*Tentative/best estimates.

** These substances are not commonly used; please check the substance is used while reporting.