



**United Nations
Environment
Programme**

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/88/8
12 October 2021

ORIGINAL: ENGLISH



EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-eighth Meeting
Montreal, 15-19 November 2021¹

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 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 2020. All countries that submitted requests for funding to the 88th meeting also submitted 2020 CP data.

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

Data	2013	2014	2015	2016	2017	2018	2019	2020
A7 (as of 6 October 2021)	147	147	147	147	147	147	147	130
CP (as of 8 October 2021)	145	144*	144	144	144	144	144	131**

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

** Except for Central African Republic (the), Cote d'Ivoire, Cuba, Guinea, Mali, Mauritania, Myanmar, Saint Kitts and Nevis, Seychelles, South Africa, South Sudan, Suriname and Venezuela (Bolivarian Republic of).

¹ Online meetings and an intersessional approval process will be held in November and December 2021 due to coronavirus disease (COVID-19).

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.

Scope of the document

3. This document consists of the following three parts:

Part 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 CFC, halon, 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 HFC under A7 or CP data reports

Part II: A5 countries subject to decisions on compliance by the Parties

Part III: Analysis of CP data 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, prices of controlled substances and alternative substances, and issues related to CP reports. Regarding HFCs, this section presents an analysis on consumption data contained in the 2020 CP data reports. Out of the 131 CP data reports for 2020 submitted, 89 reports contained HFC data.

4. This document also includes the following three annexes:

Annex I: MB consumption and production for quarantine and pre-shipment (QPS) applications

Annex II: HCFC analysis

Annex III: HFC data (measured in CO₂-equivalent)

PART I: STATUS OF AND PROSPECTS FOR COMPLIANCE OF A5 COUNTRIES

Licensing and quota systems

5. 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. Sixty-two

⁴ As at December 2020, completed projects had phased out 286,487 ODP tonnes of consumption and 204,189 ODP tonnes of production. The completed projects were valued at US \$2.94 billion out of an approved total of approximately US \$3.43 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)).

(39 low-volume-consuming (LVC) and 23 non-LVC countries) of the 88 countries that have ratified the Kigali Amendment have established a HFC licensing system.

Production and consumption

6. The complete phase-out of production and consumption of CFC, halon, 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 ratified the Kigali Amendment) are the only substances under the Montreal Protocol where consumption and production is still allowed.

Production sector⁷

7. 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 2019, zero ODP tonnes of MB were produced.

8. 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 32.6 per cent below the aggregated production baseline.

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

Party	2012	2013	2014	2015	2016	2017	2018	2019	2020	Baseline
HCFC-22										
Argentina	230.5	107.3	125.7	134.5	95.8	100.3	65.6	88.3	66.3	224.6
China	20,050.1	15,866.9	16,497.0	13,391.0	14,086.3	13,445.7	13,636.4	13,598.2	**	29,122.0*
Democratic People's Republic of Korea (the)	28.7	31.8	28.9	27.4	24.8	24.8	24.8	27.0	27.0	27.6
India	1,565.4	1,352.1	1,465.7	1,727.6	1,665.5	1,789.5	1,908.0	1,933.1	1,354.8	2,399.5
Mexico	298.3	317.1	223.5	160.9	166.8	190.1	183.8	134.8	20.2	697.0
Republic of Korea	306.7	357.6	364.7	348.9	240.3	305.6	289.9	271.5	254.3	395.1
Venezuela (Bolivarian Republic of)	160.3	121.2	86.1	37.2	14.3	15.0	1.9	0.0	#	123.1
Total HCFC-22	22,639.9	18,153.9	18,791.7	15,827.6	16,293.8	15,871.0	16,110.3	16,052.9	1,722.6	32,988.9
HCFC-141b										
China	12,884.4	9,583.6	9,560.2	7,246.5	7,278.2	7,076.8	6,321.1	6,101.6	#	*
HCFC-142b										
China	1,440.4	1,102.0	1,076.8	1,224.3	1,110.5	1,115.5	756.3	816.0	#	*
Total	36,964.7	28,839.6	29,428.6	24,298.3	24,682.5	24,063.3	23,187.8	22,970.4	1,722.6	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 6 October 2021, A7 data for China and Venezuela (Bolivarian Republic of) have not been submitted.

⁷ As of 6 October 2021, A7 data for China and Venezuela (Bolivarian Republic of) have not been submitted.

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). A progress report on the implementation of the China MB production sector has been submitted to the 88th meeting (UNEP/OzL.Pro/ExCom/88/18/Add.1)

9. An HCFC production phase-out management plan (HPPMP) was approved for one country (China).¹⁰ One A5 country (the Democratic People’s Republic of Korea) has reported 26.95 ODP tonnes of HCFC production for the year 2020 which was in compliance with the plan of action in decision XXXII/6. Funding has not been approved for the HCFC production sector for this country.

Consumption sector

CFC, halon, CTC, MB and TCA

10. All A5 countries have reported zero consumption of CFC, halon and TCA in 2019 or 2020.

11. Only two A5 countries have reported CTC consumption in 2020 for laboratory and analytical-use (Mexico (0.1 ODP tonnes) and (Republic of Korea (0.2 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 XXVI/5).

12. Only two A5 countries¹¹ have reported MB consumption in 2019 or 2020, as shown in Table 3. Although their consumption was above the 2015 Montreal Protocol compliance target, the Parties approved consumption of MB for critical uses for these countries.

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

Country	Source	Year of latest consumption	Baseline	Latest consumption
Argentina*	A7	2020	411.3	12.3
South Africa**	A7	2019	602.7	24.6

* Allowable level of consumption of 12.37 ODP tonnes for 2020 per decision XXXI/4.

** Allowable level of consumption of 24.60 ODP tonnes for 2019 per decision XXX/9.

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

HCFC consumption

14. A total of 147 A5 countries have an established HCFC baseline for compliance, with an aggregated latest consumption level of 21,047.9 ODP tonnes (333,443.1 metric tonnes), as shown in Table 4. The three main HCFCs are: HCFC-22 (71.3 per cent of the total consumption measured in ODP tonnes), HCFC-141b (25.4 per cent) and HCFC-142b (3.1 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	1,751.8	35.0	75.0
HCFC-124	1,270.7	28.0	128.0	2.8	10.1
HCFC-141b	107,871.6	11,865.9	48,596.7	5,345.6	45.1
HCFC-142b	33,195.5	2,157.7	10,131.1	658.5	30.5
HCFC-22	394,654.7	21,706.0	272,834.9	15,005.9	69.1
HCFC-225	30.4	2.1	0.1	0.0	0.2

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

¹¹ A total of 100 A5 countries received financial assistance from the Multilateral Fund to phase out consumption and production (two countries) of MB.

HCFC	Baseline		Consumption*		% of Baseline
	Metric tonnes	ODP tonnes	Metric tonnes	ODP tonnes	
HCFC-225ca	70.0	1.8	0.3	0.0	0.4
HCFC-225cb	20.9	0.7	0.3	0.0	1.5
Total	539,450.8	35,808.9	333,443.1	21,047.9	58.8

* Including Republic of Korea (1,229.1 ODP tonnes), Singapore (76.1 ODP tonnes) and the United Arab Emirates (353.6 ODP tonnes).

15. Two A5 countries have reported HCFC consumption above the 2020 Montreal Protocol compliance target in 2020 (the Central African Republic and the Democratic People's Republic of Korea¹²). Stage I of the HCFC phase-out management plan (HPMP) for the Central African Republic was cancelled at the 82nd meeting due to security issues in the country impeding the continuation of the HPMP implementation. UNEP informed that it is assisting the country to address the issue relating to HCFC consumption exceeding the compliance target in 2020. The Democratic People's Republic of Korea's has reported 2020 consumption of 63.75 ODP tonnes which was in compliance with the plan of action in decision XXXII/6. UNIDO submitted a progress report on the implementation of stage I of the HPMP for the Democratic People's Republic of Korea at the 85th meeting.¹³

HCFC phase-out management plans

16. 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 84 countries and stage III for four countries, at a total value of US \$1.13 billion (approved in principle) of which US \$907.4 million has been disbursed to address compliance with the Montreal Protocol control levels as follows:

- (a) One non-LVC country (Qatar) to address compliance up to 2015. This country has submitted a request for stage II at the 88th meeting;¹⁵ it is in compliance with the Montreal Protocol;
- (b) Fifty-three countries (31 LVC and 22 non-LVC countries), to address compliance up to 2020;
- (c) Twenty-eight countries to address compliance up to 2025; and
- (d) Sixty countries (Belize, Bhutan, Bolivia (Plurinational State of), Bosnia and Herzegovina, Botswana, Brunei Darussalam, Cambodia, the Cook Islands, Costa Rica, Cuba, the Dominican Republic, Croatia,¹⁶ Ecuador, El Salvador, Eswatini (the Kingdom of), the Gambia, Ghana, Guatemala, Guyana, Honduras, Jamaica, Kenya, Kiribati, Kyrgyzstan, the Lao People's Democratic Republic, Lesotho, Malawi, Maldives, the Marshall Islands, Mauritius, Micronesia (Federated States of), Mongolia, Montenegro, Namibia, Nauru, Nepal, Nicaragua, Niue, Palau, Panama, Papua New Guinea, Paraguay, Rwanda, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Seychelles, Sierra Leone, Solomon

¹² Decision XXXII/6.

¹³ Since the 85th meeting, consideration of the progress report included in the Reports on projects with specific reporting requirements has been deferred to each of the following meetings in line with the agreed procedures for holding Executive Committee meetings; that of the 88th meeting (UNEP/OzL.Pro/ExCom/88/18) has been deferred to the 90th meeting.

¹⁴ 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.

¹⁵ UNEP/OzL.Pro/ExCom/88/60

¹⁶ Croatia became a non-Article 5 country in 2014, and completely phased out HCFCs by 2015.

Islands, Sri Lanka, Tonga, Trinidad and Tobago, Turkey, Tuvalu, Uganda, the United Republic of Tanzania, Uruguay, Vanuatu, Zambia and Zimbabwe), to completely phase out HCFCs between 2020 and 2035.

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

Remaining HCFC consumption

18. Implementation of approved stages I, II and III of the HPMPs will result in the phase-out of approximately 72 per cent of the starting point for aggregate reduction of HCFC consumption and 86 per cent of the consumption of HCFC-141b contained in imported pre-blended polyols. Table 5 shows the aggregate remaining HCFC consumption¹⁷ 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	30.25	9.11	20.84	30.1
HCFC-124	26.42	26.10	2.32	23.78	8.9
HCFC-141	0.94	0.94	0.94	0.00	100.0
HCFC-141b	10,668.24	10,676.36	10,475.89	200.47	98.1
HCFC-142b	2,000.80	2,016.90	1,379.44	637.46	68.4
HCFC-21	0.74	0.74	0.74	0.00	100.0
HCFC-22	20,424.65	19,851.51	11,503.45	8,250.53	57.9
HCFC-225	2.82	2.82	1.13	1.69	40.1
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	32,606.72	23,373.02	9,135.87	71.7
HCFC-141b polyol**	0.00	657.20	563.43	90.53	85.7

* As of the 87th meeting.

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

HFC consumption

19. Of the 147 A5 countries, 108 countries have reported HFC data in 2018, 2019 or 2020. Eighty-two of the 108 countries have ratified the Kigali Amendment. Annex III to the present document includes information on the latest reported HFC consumption data (measured in CO₂-equivalent) for these 108 countries.

PART II: A5 COUNTRIES SUBJECT TO DECISIONS ON COMPLIANCE

20. At their Thirty-Second Meeting, the Parties to the Montreal Protocol found one A5 country (the Democratic People's Republic of Korea)¹⁸ in non-compliance with its obligations under the Montreal Protocol.

¹⁷ 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.

¹⁸ In decision XXXII/6, the Parties *inter alia* noted with appreciation the submission by the Democratic People's Republic of Korea of an explanation for its non-compliance and a plan of action to ensure its return to compliance with the Protocol's HCFC consumption control measures and production control measures in 2023; and urged the country to work with the relevant implementing agencies to explore options for the implementation of its plan of

PART III: DATA ON THE IMPLEMENTATION OF CPs FOR HCFCs AND HFCs**HCFC data****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.

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

HCFC	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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
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
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
Consumption										
HCFC-22	19,847.6	22,581.7	17,817.0	17,399.4	15,289.4	15,497.0	15,184.7	15,196.5	14,946.5	11,810.9
HCFC-141b	11,978.2	11,735.9	8,981.3	8,348.3	6,772.5	6,384.9	6,312.2	5,726.0	5,532.2	3,695.6
HCFC-142b	1,827.9	1,439.4	1,014.5	761.0	890.8	726.2	774.3	430.1	486.7	179.5
Production – consumption										
HCFC-22	1,818.1	970.7	952.0	2,416.9	1,493.2	694.2	541.2	864.8	1,012.8	772.6
HCFC-141b	333.3	1,148.5	602.3	1,211.9	474.0	893.3	764.6	595.1	569.4	927.7
HCFC-142b	(68.1)	1.0	87.5	315.8	333.5	384.3	341.2	326.2	329.3	238.8

Sector distribution of HCFC consumption

22. Table 7 presents the sector distribution of aggregated HCFC consumption for the period 2011 to 2020, where countries are grouped as follows: China, as the largest consumer (and producer) of HCFCs; the 14 largest consuming countries (excluding China);¹⁹ and all other countries. In 2020, the three sectors with the largest consumption of HCFCs (measured in ODP tonnes) were the refrigeration servicing (41.5 per cent of the total), foam (31.0 per cent of the total) and the refrigeration manufacturing sectors (25.2 per cent). As the phase-out of HCFCs in the foam and refrigeration manufacturing sectors progresses, the refrigeration servicing sector becomes more relevant.

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

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China										
Aerosol	70.5	95.4	137.8	186.2	180.4	189.4		154.0	163.7	
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
Fire-fighting										
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
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
Solvent	514.1	524.1	466.0	484.8	418.5	413.4	397.0	375.1	385.0	308.0
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
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
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	349.0

action to phase out the consumption and production of HCFCs subject to the application of the relevant United Nations Security Council resolutions.

¹⁹ Argentina, Brazil, Egypt, India, Indonesia, Iran (Islamic Republic of), Kuwait, Malaysia, Mexico, Nigeria, Saudi Arabia, South Africa, Thailand and Turkey.

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fire-fighting	9.8	6.0	5.4	4.0	4.0	4.2	4.9	2.3	2.9	2.2
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	788.0
Refrigeration servicing	3,246.7	4,213.6	3,029.3	3,008.3	3,148.6	3,262.9	2,805.0	2,615.4	2,835.3	2,430.8
Solvent	80.0	76.3	43.3	38.5	37.1	29.6	53.9	47.5	62.7	56.2
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	5,206.3	4,977.3	3,627.2
129 remaining A5 countries										
Aerosol	0.1	0.2	0.7	0.4	0.3	0.1	0.5			
Foam	1,061.5	1,258.8	963.2	916.0	869.0	826.9	731.2	497.5	472.7	379.9
Fire-fighting	9.4	13.3	8.6	11.2	14.0	11.1	7.7	3.2	4.4	1.4
Refrigeration manufacturing	703.8	400.7	314.3	290.2	248.9	236.1	217.3	178.7	180.0	100.4
Refrigeration servicing	2,178.1	2,372.2	1,995.8	2,011.0	1,861.3	1,695.3	1,610.1	1,556.0	1,503.0	1,243.8
Solvent	38.0	34.1	5.2	3.5	4.9	5.1	3.1	3.2	3.3	0.3
Total 129 remaining A5 countries	3,990.8	4,079.3	3,287.7	3,232.3	2,998.3	2,774.7	2,569.9	2,238.6	2,163.3	1,725.9
All A5 countries										
Aerosol	153.4	170.5	262.2	205.9	268.0	232.0	6.0	180.9	171.5	1.1
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	7,200.6	4,970.8
Fire-fighting	19.1	19.4	14.1	15.2	18.0	15.2	12.6	5.6	7.3	3.6
Refrigeration manufacturing	10,118.3	10,130.3	8,562.2	7,824.3	7,063.2	6,817.0	6,615.1	6,274.2	5,936.9	4,037.9
Refrigeration servicing	9,251.8	11,443.6	8,128.9	8,181.0	7,422.0	7,596.5	7,296.5	7,488.3	7,596.6	6,659.0
Solvent	632.0	634.5	514.5	526.9	460.4	448.2	454.0	425.8	450.9	364.5
Total all A5 countries	34,329.4	36,555.5	28,564.6	27,226.3	23,700.4	23,381.4	22,838.1	21,827.2	21,363.8	16,036.9
% of total for China	60.4	57.7	60.2	61.8	56.9	60.8	64.0	65.9	66.6	66.6
% 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	22.6
% of total for 129 remaining A5 countries	11.6	11.2	11.5	11.9	12.7	11.9	11.3	10.3	10.1	10.8

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

23. 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
HCFC-22										
Aerosol	103.9	124.9	116.4	129.5	134.2	132.0	0.3****	102.3	91.1	
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
Fire-fighting	6.2	0.1								

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Refrigeration manufacturing	9,270.7	9,474.9	8,012.7	7,518.0	6,747.4	6,590.5	6,330.0	5,999.0	5,760.1	3,897.8
Refrigeration servicing	8,711.8	10,873.6	7,882.3	8,019.8	7,229.8	7,255.5	7,166.7	7,412.5	7,478.5	6,584.2
Solvent	29.3	29.0		0.3	0.7	0.6	0.4	0.4	0.4	0.3
Total HCFC-22	19,847.6	22,581.7	17,817.0	17,399.4	15,289.4	15,497.0	15,184.7	15,196.5	14,946.5	11,810.9
HCFC-141b										
Aerosol	49.4	45.4	145.8	76.4	132.0	99.9	5.7****	78.7	80.4	1.1
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	4,814.0	3,181.6
Fire-fighting	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
Refrigeration servicing	98.7	96.4	75.7	66.5	54.6	108.8	37.1	26.4	28.0	22.7
Solvent	597.1	600.2	510.6	521.0	454.4	443.3	450.8	420.0	447.1	363.9
Total HCFC-141b	11,978.2	11,735.9	8,981.3	8,348.3	6,772.5	6,384.9	6,312.2	5,726.0	5,532.2	3,695.6
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
Fire-fighting										
Refrigeration manufacturing	11.1	7.8	6.5	8.0	7.2	6.9	6.1	5.9	5.9	4.2
Refrigeration servicing	414.7	441.3	144.4	66.7	107.9	110.9	67.3	25.7	68.5	40.6
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	179.5
Other HCFCs	675.7	798.5	751.7	717.6	747.8	773.3	566.8	474.6	398.4	350.9
Total	34,329.4	36,555.5	28,564.6	27,226.3	23,700.4	23,381.4	22,838.1	21,827.2	21,363.8	16,036.9

* 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).

HFC data

24. 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 2022,²⁰ and requested the Secretariat to revise Section B1 for data reporting on manufacturing of blends containing Annex F substances for consideration at the 85th meeting.²¹

25. In line with the revised CP data report format, the document on Country programme data and prospects for compliance submitted to the 86th meeting,²² presented the first analysis of HFC data reported by A5 Parties under their CP data or A7 data reports. It included an analysis of the sectoral distribution of all reported HFCs measured in metric tonnes and CO₂ equivalent. It also included an analysis of the trend

²⁰ Decision 84/7(c)

²¹ Decision 84/7(d). Subsequently, the Executive Committee deferred consideration of the draft updated revised format of Section B1 of the CP data reports as contained in Annex IV to document UNEP/OzL.Pro/ExCom/86/8 at an in-person Executive Committee meeting (decision 86/7(c)).

²² UNEP/OzL.Pro/ExCom/86/8

in the consumption of HFCs reported by A5 Parties under the surveys of ODS alternatives carried out in line with decision 79/43.²³

26. The present document presents an analysis of the HFC consumption reported by the 89 A5 Parties under their CP data reports for 2020. Of the 131 countries which submitted 2020 CP data as of 8 October 2021, 82 countries have ratified the Kigali Amendment. Only 71 of the 82 countries have provided HFC data in their 2020 CP reports on time for this analysis. In addition, 18 countries that have not ratified the Kigali Amendment have provided HFC data in their 2020 CP reports.

27. The sector distribution of aggregated HFC consumption for the 88 countries²⁴ that have submitted 2020 CP data is presented in Table 9. Of these 88 countries, 58 are LVC countries and they account for 62.2 per cent of the aggregated HCFC baseline for all LVC countries; 30 are non-LVC countries and they account for 16.5 per cent of the HCFC baselines for all non-LVC countries. The HFC data reported by LVC and non-LVC countries account for 8.9 per cent and 91.1 per cent, respectively of the total HFC consumption data reported for the year 2020.

Table 9. Sector distribution of HFCs consumed in 2020 (metric tonnes)

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total***
				Other	AC	Total*				
HFC-125			435.5	7.5	593.6		1,624.3		186.8	3,310.9
HFC-134a	1,865.4	1,055.8		4,587.3	5,995.6	2,734.5	29,710.2		866.3	46,815.0
HFC-143a				54.0			241.3		208.9	504.2
HFC-152a	3,350.4	1,443.4		18.4			127.3		29.7	4,969.1
HFC-227ea	0.3		785.2				5.5		47.8	838.8
HFC-23 (use)**			21.8	0.8			2.2	1.0	1.0	27.2
HFC-236fa			79.6							79.6
HFC-245fa		144.4							77.2	221.6
HFC-32					4,640.6	9.9	2,319.9		185.9	7,694.7
HFC-365mfc	4.8	113.3	192.0							310.1
HFC-43-10mee								81.3	1.7	83.0
R-404A				1,245.6	708.0	184.7	7,954.8		221.4	10,314.5
R-407A				5.5	4.5	0.0	95.5			105.6
R-407C				116.2	149.0	81.7	2,611.7		49.6	3,008.3
R-407F						25.5	81.5			107.1
R-410A				80.5	16,815.3	743.0	13,729.7		216.4	31,584.8
R-413A							122.5			122.5
R-417A					0.0	1.0	211.4		2.7	215.1
R-417B							156.5			156.5
R-422A							9.3			9.3
R-422B							1.1			1.1
R-422D							161.5			161.5
R-427A							45.3			45.3
R-437A							208.5			208.5
R-438A							85.3		1.5	86.7
R-448A						1.2	64.2			66.4
R-449A						0.6	27.0			27.6
R-449C							3.1		0.2	3.2
R-451A							1.8			1.8

²³During the intersessional approval process established for the 86th meeting, it was suggested to include the results from the surveys of ODS alternatives carried out, in the document to be submitted to the 86th meeting (paragraph 28 of document UNEP/OzL.Pro/ExCom/86/IAP/3). The analysis was contained in paragraph 30 and Table 11 of document UNEP/OzL.Pro/ExCom/86/8. No further analysis is required, noting that the surveys collected data for only three years (i.e., 2012 to 2015), no further data was collected between 2016 and 2019, and not all A5 Parties with an approved survey on ODSs had reported HFC data.

²⁴ Excluding one country (Chad) for which the data is being clarified with the country.

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total***
				Other	AC	Total*				
R-452A							3.7			5.2
R-453A							1.3			1.3
R-454B							0.0			0.0
R-455A							0.3			0.3
R-507A				38.2		218.2	1,392.3		488.8	2,137.8
R-508B				108.4		0.1	27.3		0.0	135.8
R-513A							16.1			16.1
HFC-227ea in imported pre-blended polyol		1.4								1.4
HFC-245fa in imported pre-blended polyol		116.1								116.1
HFC-365mfc in imported pre-blended polyol		50.6				2.5	2.6			55.6
Other HFCs ²⁵		637.0	0.0	0.0	0.0	0.0	277.1	0.3	14.3	928.8
Total	5,220.8	3,562.1	1,514.1	6,262.2	28,906.6	4,002.9	61,322.0	82.6	2,600.1	114,478.6
LVC		236.8	8.6	124.1		307.3	9,441.0		20.6	10,139.8
Non-LVC	5,220.8	3,325.3	1,505.5	6,138.1	28,906.6	3,695.6	51,881.0	82.6	2,579.6	104,338.8

*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.

28. In 2020, the five sectors with the largest consumption of HFCs (measured in metric tonnes) were the refrigeration servicing (53.6 per cent of the total), refrigeration manufacturing – air-conditioning (AC) (25.3 per cent), refrigeration manufacturing – others (5.5 per cent), aerosol (4.6 per cent) and foam (3.1 per cent).

29. The sector distribution of aggregated HFC consumption in CO₂-equivalent is presented in Table 10. R-404A, HFC-125, HFC-134a, R-507A and R-410A account for 89 per cent of the total consumption in CO₂-equivalent; refrigeration servicing, refrigeration manufacturing – AC, and refrigeration manufacturing – others, account for 57.3 per cent, 23.9 per cent and 6.3 per cent of the total consumption, respectively.

Table 10. Sector distribution of HFCs consumed in 2020 ('000 tons CO₂-equivalent)

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total***
				Other	AC	Total*				
HFC-125			1,524.1	26.1	2,077.4		5,685.1		653.6	11,588.0
HFC-134a	2,667.5	1,509.9		6,559.8	8,573.7	3,910.4	42,485.6		1,238.8	66,945.5
HFC-143a	0.0			241.4			1,078.6		933.8	2,253.8
HFC-152a	415.4	179.0		2.3			15.8		3.7	616.2
HFC-227ea	1.0		2,528.3				17.8		154.0	2,701.0
HFC-23 (use)**			323.1	11.3			32.9	15.1	15.2	402.0
HFC-236fa			781.3							781.3
HFC-245fa		148.7							79.5	228.2
HFC-32					3,132.4	6.6	1,565.9		125.4	5,193.9
HFC-365mfc	3.8	90.0	152.4							246.2
HFC-43-10mee								132.8	2.8	135.6
R-404A				4,885.3	2,776.9	724.5	31,198.6		868.3	40,453.5
R-407A				11.6	9.5	0.1	201.3			222.5
R-407C				206.1	264.4	145.0	4,633.1		88.1	5,336.6
R-407F						46.6	148.7		0.0	195.4

²⁵ This includes data reported HFC consumption in blends with a trade name by Argentina, Chile, and Colombia; these countries also provided the estimated composition of different HFCs in these blends.

HFC	Aerosol	Foam	Fire fighting	Refrigeration manufacturing			Ref. servicing	Solvent	Other	Total***
				Other	AC	Total*				
R-410A				168.0	35,110.4	1,551.3	28,667.5		451.8	65,949.1
R-413A							251.5			251.5
R-417A						2.3	496.1		6.4	504.7
R-417B							473.8			473.8
R-422A							29.4			29.4
R-422B							2.7			2.7
R-422D							440.7			440.7
R-427A							96.8			96.8
R-437A							376.4			376.4
R-438A							193.1		3.3	196.4
R-448A						1.7	89.0			92.0
R-449A						0.9	38.0			38.9
R-449C							3.8		0.2	4.1
R-451A							0.3			0.3
R-452A							8.0			8.0
R-453A							2.3			2.3
R-454B							0.02			0.0
R-455A							0.04			0.0
R-507A				152.1		869.4	5,548.3		1,947.7	8,519.0
R-508B				1,451.5		1.7	366.0		-0.1	1,819.2
R-513A							10.1			10.1
HFC-227ea in imported pre-blended polyol		4.6								4.6
HFC-245fa in imported pre-blended polyol		119.6								119.6
HFC-365mfc in imported pre-blended polyol		40.2				1.9	2.1			44.2
Other HFCs ²⁶		613.6					379.5	0.4	6.7	1,000.2
Grand Total	3,087.7	2,705.6	5,309.2	13,715.5	51,944.6	7,262.3	124,538.7	148.3	6,579.4	217,284.0

*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 2020, the most consumed HFCs including blends were HFC-134a (34.1 per cent), R-404A (31.1 per cent), R-410A (16.4 per cent), R-507A (7.5 per cent) and R-407C (3.8 per cent) for LVC countries, and R-410A (31.9 per cent of the total), HFC-134a (30.4 per cent), R-404A (17.2 per cent), and HFC-125 (5.9 per cent) for non-LVC countries.

31. In addition, 13 countries (three LVC and ten non-LVC countries) reported a total consumption of 27.16 metric tonnes of HFC-23 used in the fire fighting, refrigeration manufacturing – others, and RAC servicing sector including Argentina, Chile, Ecuador, Malaysia, Maldives, Mauritius, Mexico, Pakistan, Peru, Philippines (the), Tunisia, Turkey and Viet Nam. Three countries have an obligation to report 2020 data on HFC-23 production and generation under the Kigali Amendment: Argentina, the Democratic People's Republic of Korea and Mexico. The Democratic People's Republic of Korea and Mexico have reported HFC-23 emissions for one facility in their respective countries of 9.1 metric tonnes and 39.28 metric tonnes in 2020, respectively, totalling 48.38 metric tonnes.

²⁶ See footnote 26.

Prices of HCFCs, HFCs and alternatives

32. The average prices of HCFCs, HFCs and alternatives reported by A5 countries since 2011 are summarized in Table 11.²⁷ 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)²⁸ that is usually obtained from importers.

Table 11. Average price of HCFCs, HFCs and alternatives²⁹

Substance	Average price (US \$/kg)*										Range (US \$/kg)	Countries (2020)**
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		
HCFC-22	9.28	10.06	9.24	10.08	10.07	9.25	10.18	10.24	9.64	10.70	1.61 (China) to 93.38 (Chile)	119
HCFC-141b	6.73	6.73	6.65	7.77	7.08	10.00	9.40	10.99	8.23	12.78	2.20 (Iran (Islamic Republic of)) to 135.66 (Chile)	26
R-600a	20.97	20.49	20.20	18.02	15.23	15.98	15.80	16.03	16.72	18.50	1.78 (China) to 141.05 (Saint Vincent and the Grenadines)	89
R-290	22.23	15.60	14.38	21.26	19.08	16.13	16.48	15.92	21.80	24.64	2.50 (Indonesia) to 191.65 (Saint Vincent and the Grenadines)	65
HFC-134a	16.64	14.96	13.65	13.30	14.26	12.83	13.94	12.35	12.31	12.75	2.82 (Paraguay) to 101.34 (Chile)	111
R-404A	20.68	18.71	15.41	15.11	15.42	15.32	15.97	14.77	13.76	14.29	2.50 (Dominican Republic (the)) to 93.52 (Chile)	108
R-407C	21.36	19.04	16.06	15.19	13.97	12.71	13.94	13.71	13.02	13.79	2.50 (Dominican Republic (the)) to 86.20 (Chile)	89
R-410A	21.70	19.91	16.05	15.28	14.61	16.44	15.47	14.78	14.50	14.69	2.22 (China) to 106.70 (Chile)	113
R-507A	20.78	15.84	13.59	12.21	11.65	11.76	13.33	13.07	12.99	13.24	2.69 (Paraguay) to 93.33 (Chile)	63

* All zero entries were excluded.

** Number of A5 countries that reported prices in 2020.

Issues related to CP data reports

Timely submission of CP data reports

33. In reviewing the timely submission of the CP data reports, the Secretariat noted progress for the year 2020 compared to 2019 as shown in Table 12. Although there is a slight decrease in the monthly submission rates when compared with that of 2019, it can be attributed to the new format and the evolving situation of the COVID-19 pandemic. The Secretariat noted the efforts made by implementing agencies in following up on the submission of outstanding CP data reports, and keeping the Secretariat informed on progress on a regular basis.

Table 12. Monthly rates of submission of CP data reports (as at 8 October 2021)

Month	2013		2014		2015		2016		2017		2018		2019		2020	
	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*
January					1	0.69			3	2.08						
February	1	0.69	2	1.39	5	4.17	9	6.25	1	2.78	7	4.86	1	0.69	2	1.39

²⁷ 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.

²⁸ 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.

²⁹ 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	2013		2014		2015		2016		2017		2018		2019		2020	
	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*	No*	(%)*
March	3	2.76	15	11.81	33	27.08	9	12.50	8	8.33	14	14.58	9	6.94	11	9.03
April	38	28.97	48	45.14	27	45.83	49	46.53	60	50.00	64	59.03	63	50.69	50	43.75
May	35	53.10	24	61.81	22	61.11	26	64.58	39	77.08	30	79.86	29	70.83	42	72.92
June	11	60.69	18	74.31	14	70.83	10	71.53	15	87.50	4	82.64	4	73.61	7	77.78
July	6	64.83	9	80.56	8	76.39	7	76.39	3	89.58	2	84.03	8	79.17	3	79.86
August	6	68.97	3	82.64	5	79.86	2	77.78	7	94.44	3	86.11	5	82.64	4	82.64
September	22	84.14	7	87.50	8	85.42	19	90.97	4	97.22	6	90.28	10	89.58	6	86.81
October	12	92.41	9	93.75	8	90.97	7	95.83	1	97.92	10	97.22	2	90.97	6	90.97
November	2	93.79			1	91.67	2	97.22	1	98.61	1	97.92	3	93.06		
December			2	95.14							1	98.61	8	98.61		
After Dec.	9	100.00	7	100.00	12	100.00	4	100.00	2	100.00	2	100.00	2	100.00		
Total	145		144		144		144		144		144		144		131	
Outstanding	0		0		0		0		0		0		0		13	

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

34. The Executive Committee may wish to request the Secretariat to send a letter to the Governments of Central African Republic (the), Cote d'Ivoire, Cuba, Guinea, Mali, Mauritania, Myanmar, Saint Kitts and Nevis, Seychelles, South Africa, South Sudan (the), Suriname and Venezuela (Bolivarian Republic of), regarding the outstanding CP data reports for 2020, 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

35. The review of the 2020 import data reported under A7 and CP reports revealed potential data discrepancies, as shown in Table 13.

Table 13. Differences between 2020 A7 and CP consumption data (ODP tonnes)

Country	ODS	Agency for IS	A7 data	CP data	Difference	HCFC-141b polyol*	Remarks
Brazil	Halon	UNDP	0.0	32.3	-32.3		CP data is for recovered halons.
Costa Rica	HCFC	UNDP	4.0	4.1	-0.1	0.1	Issue being clarified with UNDP pending their response.
Burundi	HCFC	UNEP	0.0	1.3	-1.3	0.0	Issue being clarified with UNEP pending their response.
Haiti	HCFC	UNEP	0.0	1.6	-1.6	0.0	Issue being clarified with UNEP pending their response.
Somalia	HCFC	UNEP	10.6	10.5	0.1	0.1	Issue being clarified with UNEP pending their response.
Thailand	HCFC	IBRD	350.1	350.4	-0.3	1.3	CP data is correct. Thailand will submit revised 2020 A7 data to the Ozone Secretariat.

* 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 the CP data and A7 data.

37. The Secretariat noted the following related to CP data submission for HFCs for the year 2020:
- (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 RAC servicing), and incorrect substance reported (e.g., HFC-134 instead of HFC-134a, HFC-152 instead of HFC-152a). The agencies worked with the countries and where necessary, corrections were made in HFC data and confirmed to the Secretariat; and
 - (b) 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 reconciliation of 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.

RECOMMENDATION

38. 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/88/8, including that, as at 8 October 2021, 131 countries had submitted 2020 CP data and 13 countries had not done so;
 - (b) To request:
 - (i) The Secretariat to send letters to the Governments of Central African Republic (the), Cote d'Ivoire, Cuba, Guinea, Mali, Mauritania, Myanmar, Saint Kitts and Nevis, Seychelles, South Africa, South Sudan, Suriname and Venezuela (Bolivarian Republic of) regarding the outstanding CP data reports for 2020, urging them to submit those reports as soon as possible; and
 - (ii) Relevant implementing agencies to continue assisting the respective governments in clarifying the discrepancies between the 2020 CP data and Article 7 data and to report back no later than the 90th meeting.

Annex I

MB CONSUMPTION AND PRODUCTION FOR QPS APPLICATIONS

Country	Year of latest consumption	Latest consumption (ODP tonnes)
Consumption		
Argentina	2020	25.80
Bahrain	2020	8.20
Brazil	2020	60.50
Chile	2020	43.80
China	2019	522.70
Costa Rica	2020	6.60
Egypt	2020	91.20
El Salvador	2020	102.80
Ethiopia	2020	12.50
Fiji	2020	9.50
Guatemala	2020	6.00
Honduras	2020	15.90
India	2020	1,262.50
Indonesia	2020	43.20
Iran (Islamic Republic of)	2020	13.20
Jamaica	2020	2.50
Jordan	2019	4.80
Kenya	2020	1.70
Malaysia	2020	81.60
Mexico	2020	143.60
Morocco	2020	6.10
Myanmar	2020	33.00
Nicaragua	2019	17.80
Pakistan	2020	134.40
Peru	2020	3.40
Philippines (the)	2020	9.80
Republic of Korea (the)	2020	193.00
Saudi Arabia	2020	9.00
Singapore	2020	55.70
South Africa	2019	47.50
Sri Lanka	2020	19.90
Suriname	2019	3.20
Thailand	2020	93.70
Turkey	2020	27.30
United Arab Emirates (the)	2020	25.80
Uruguay	2020	70.90
Viet Nam	2020	465.00
Total consumption		3,674.10
Production		
China	2019	663.80
India	2020	2,477.40
Total production		3,141.20

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	2020	23.6	6.1	0	0	0	35% by 2020 and 67.5% by 2025
Albania	A7	2020	6.0	3.1	0	0	0	35% by 2020 and 67.5% by 2025
Algeria	A7	2020	62.1	39.3	0	0	0	20% by 2017
Angola	A7	2020	16.0	9.2	0	0	0	10% by 2015 and 67.5% by 2025
Antigua and Barbuda	A7	2020	0.3	0.0	0	0	0	HPMP cancelled
Argentina	A7	2020	400.7	126.2	0	0	0	17.5% by 2017 and 50% by 2022
Armenia	A7	2020	7.0	2.2	0	0	0	10% by 2015 and 66.6% by 2020
Bahamas (the)	A7	2020	4.8	2.6	0	0	0	35% by 2020
Bahrain	A7	2020	51.9	32.8	0	0	0	35% by 2020
Bangladesh	A7	2020	72.6	46.5	0	0	0	30% by 2018 and 67.5% by 2025
Barbados	A7	2020	3.7	0.9	0	0	0	35% by 2020
Belize	A7	2020	2.8	1.4	0	0	0	35% by 2020 and 100% by 2030
Benin	A7	2020	23.8	13.5	0	0	0	35% by 2020
Bhutan	A7	2020	0.3	0.0	0	0	0	100% by 2025
Bolivia (Plurinational State of)	A7	2020	6.1	2.0	0	0	0	35% by 2020 and 100% by 2030
Bosnia and Herzegovina	A7	2020	4.7	1.4	0	0	0	35% by 2020 and 100% by 2026
Botswana	CP	2020	11.0	5.4	0	0	0	35% by 2020 and 100% by 2030
Brazil	A7	2020	1,327.3	452.8	0	0	0	10% by 2015 and 45% by 2021
Brunei Darussalam	A7	2020	6.1	3.7	0	0	0	35% by 2020 and 100% by 2030
Burkina Faso	A7	2020	28.9	6.4	0	0	0	35% by 2020
Burundi	A7	2020	7.2	0.0	0	0	0	35% by 2020
Cabo Verde	A7	2020	1.1	0.0	0	0	0	35% by 2020
Cambodia	A7	2020	15.0	6.7	0	0	0	100% by 2035
Cameroon	A7	2020	88.8	32.5	0	0	0	20% by 2017 and 75% by 2025
Central African Republic (the)	A7	2020	12.0	8.8	0	0	13	HPMP cancelled
Chad	A7	2020	16.1	10.1	0	0	0	35% by 2020
Chile	A7	2020	87.5	27.0	0	0	0	10% by 2015 and 65% by 2021
China	CP	2020	19,269.0	10,683.7	0	0	0	10% by 2015 and 37.6% by 2020
Colombia	A7	2020	225.6	63.2	0	0	0	10% by 2015 and 65% by 2021
Comoros (the)	A7	2020	0.1	0.1	0	0	0	35% by 2020
Congo (the)	A7	2020	10.1	6.4	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
Cook Islands (the)	A7	2020	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Costa Rica	A7	2020	14.1	4.0	0	0	0	35% by 2020 and 97.5% by 2030
Cote d'Ivoire	A7	2019	63.8	41.4	0	0	0	35% by 2020
Cuba	A7	2019	16.9	6.3	0	0	0	35% by 2020 and 100% by 2030
Democratic People's Republic of Korea (the) **	A7	2020	78.0	63.8	0	0	26	15% by 2018
Democratic Republic of the Congo (the)	A7	2020	66.2	2.1	0	0	0	10% by 2017
Djibouti	A7	2020	0.7	0.4	0	0	0	35% by 2020
Dominica	CP	2020	0.4	0.0	0	0	0	35% by 2020
Dominican Republic (the)	A7	2020	51.2	29.0	0	0	0	10% by 2015, 40% by 2020 and 100% by 2030
Ecuador	A7	2020	23.5	13.5	0	0	0	35% by 2020 and 100% by 2030
Egypt	A7	2020	386.3	250.0	0	0	0	25% by 2018 and 70% by 2025
El Salvador	A7	2020	11.7	2.7	0	0	0	35% by 2020 and 100% by 2030
Equatorial Guinea	A7	2020	6.3	1.0	0	0	0	35% by 2020
Eritrea	A7	2020	1.1	0.6	0	0	0	35% by 2020
Eswatini (the Kingdom of)	CP	2020	1.7	0.4	0	0	0	35% by 2020 and 100% by 2030
Ethiopia	A7	2020	5.5	3.4	0	0	0	35% by 2020
Fiji	A7	2020	5.7	2.1	0	0	0	35% by 2020
Gabon	A7	2020	30.2	15.4	0	0	0	35% by 2020
Gambia (the)	A7	2020	1.5	0.2	0	0	0	35% by 2020 and 100% by 2030
Georgia	A7	2020	5.3	0.9	0	0	0	35% by 2020
Ghana	A7	2020	57.3	16.0	0	0	0	35% by 2020 and 100% by 2030
Grenada	A7	2020	0.8	0.2	0	0	0	35% by 2020
Guatemala	A7	2020	8.3	4.0	0	0	0	35% by 2020 and 100% by 2030
Guinea	A7	2020	22.6	1.7	0	0	0	35% by 2020
Guinea Bissau	CP	2020	2.8	1.1	0	0	0	35% by 2020
Guyana	A7	2020	1.8	0.9	0	0	0	10% by 2015 and 100% by 2030
Haiti	A7	2020	3.6	0.0	0	0	0	35% by 2020
Honduras	A7	2020	19.9	7.2	0	0	0	35% by 2020 and 100% by 2030
India	A7	2020	1,608.2	297.5	0	0	0	10% by 2015 and 60% by 2023
Indonesia	A7	2020	403.9	188.4	0	0	0	20% by 2018 and 55% by 2023
Iran (Islamic Republic of)	A7	2020	380.5	163.7	0	0	0	10% by 2015 and 75% by 2023
Iraq	A7	2020	108.4	66.4	0	0	0	13.82% by 2019 and 69% 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
Jamaica	A7	2020	16.3	5.0	0	0	0	35% by 2020 and 100% by 2030
Jordan	CP	2020	83.0	29.2	0	0	0	20% by 2017 and 50% by 2022
Kenya	A7	2020	52.2	6.4	0	0	0	21.1% by 2017 and 100% by 2030
Kiribati	A7	2020	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Kuwait	A7	2020	418.6	253.8	0	0	0	39.2% by 2020
Kyrgyzstan	A7	2020	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	2020	2.3	1.4	0	0	0	35% by 2020 and 100% by 2030
Lebanon	A7	2020	73.5	35.1	0	0	0	18% by 2017 and 75% by 2024
Lesotho	A7	2020	3.5	0.5	0	0	0	35% by 2020 and 100% by 2030
Liberia	A7	2020	5.3	1.6	0	0	0	35% by 2020
Libya***	A7	2020	118.4	75.0	0	0	0	10% by 2020
Madagascar	A7	2020	24.9	5.5	0	0	0	35% by 2020
Malawi	A7	2020	10.8	3.3	0	0	0	35% by 2020 and 100% by 2030
Malaysia	A7	2020	515.8	228.4	0	0	0	15% by 2016 and 42.9% by 2022
Maldives	A7	2020	4.6	0.1	0	0	0	100% by 2020
Mali	A7	2019	15.0	7.5	0	0	0	35% by 2020
Marshall Islands (the)	A7	2020	0.2	0.0	0	0	0	35% by 2020 and 100% by 2030
Mauritania	A7	2019	20.5	13.9	0	0	4	67.5% by 2025
Mauritius	A7	2020	8.0	2.0	0	0	0	100% by 2030
Mexico	A7	2020	1,148.8	120.0	0	0	0	30% by 2018 and 67.5% by 2022
Micronesia (Federated States of)	A7	2020	0.2	0.1	0	0	0	35% by 2020 and 100% by 2030
Mongolia	A7	2020	1.4	0.0	0	0	0	35% by 2020 and 100% by 2030
Montenegro	A7	2020	0.8	0.1	0	0	0	35% by 2020 and 100% by 2025
Morocco	A7	2020	51.4	25.3	0	0	0	20% by 2020
Mozambique	CP	2020	8.7	2.2	0	0	0	35% by 2020
Myanmar	A7	2020	4.3	2.0	0	0	0	35% by 2020
Namibia	A7	2020	8.4	0.7	0	0	0	100% by 2025
Nauru	A7	2020	0.0	0.0	0	0	0	35% by 2020 and 100% by 2030
Nepal	CP	2020	1.1	0.4	0	0	0	35% by 2020 and 100% by 2030
Nicaragua	CP	2020	6.8	2.7	0	0	0	35% by 2020 and 100% by 2030
Niger (the)	A7	2020	16.0	10.0	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
Nigeria	A7	2020	344.9	166.7	0	0	0	10% by 2015 and 51.35% by 2023
Niue	A7	2020	0.0	0.0	0	0	0	35% by 2020 and 100% by 2030
North Macedonia	A7	2020	1.8	0.4	0	0	0	35% by 2020
Oman	A7	2020	31.5	16.0	0	0	0	10% by 2015 and 35% by 2020
Pakistan	A7	2020	248.1	122.2	0	0	0	10% by 2015 and 50% by 2020
Palau	A7	2020	0.2	0.0	0	0	0	35% by 2020 and 100% by 2030
Panama	A7	2020	24.8	11.3	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Papua New Guinea	A7	2020	3.3	1.1	0	0	0	100% by 2025
Paraguay	A7	2020	18.0	10.9	0	0	0	35% by 2020 and 100% by 2030
Peru	A7	2020	26.9	12.3	0	0	0	10% by 2015 and 67.5% by 2025
Philippines (the)	A7	2020	162.0	50.6	0	0	0	10% by 2015 and 50% by 2021
Qatar	A7	2020	86.9	56.4	0	0	0	20% by 2015
Republic of Korea (the)	A7	2020	1,908.0	1,229.1	0	0	0	
Republic of Moldova (the)	A7	2020	1.0	0.6	0	0	0	10% by 2015 and 35% by 2020
Rwanda	A7	2020	4.1	1.7	0	0	0	35% by 2020 and 100% by 2030
Saint Kitts and Nevis	A7	2020	0.5	0.0	0	0	0	35% by 2020
Saint Lucia	A7	2020	1.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Saint Vincent and the Grenadines	A7	2020	0.3	0.0	0	0	0	100% by 2025
Samoa	A7	2020	0.3	0.0	0	0	0	35% by 2020 and 100% by 2030
Sao Tome and Principe	A7	2020	2.2	0.1	0	0	0	35% by 2020
Saudi Arabia	A7	2020	1,468.7	880.5	0	0	0	40% by 2020
Senegal	A7	2020	36.2	13.2	0	0	0	35% by 2020
Serbia	A7	2020	8.4	5.3	0	0	0	35% by 2020 and 67.5% by 2025
Seychelles	A7	2020	1.4	0.0	0	0	0	100% by 2025
Sierra Leone	A7	2020	1.7	0.6	0	0	0	35% by 2020 and 100% by 2030
Singapore	A7	2020	216.1	76.1	0	0	0	
Solomon Islands	A7	2020	2.0	0.1	0	0	0	35% by 2020 and 100% by 2030
Somalia	A7	2020	45.1	10.6	0	0	0	35% by 2020
South Africa	A7	2019	369.7	110.7	0	0	0	35% by 2020
South Sudan	A7	2019	4.1	1.4	0	0	0	35% by 2020
Sri Lanka	A7	2020	13.9	8.6	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
Sudan (the)	A7	2020	52.7	10.6	0	0	0	30% by 2017 and 75% by 2020
Suriname	A7	2019	2.0	0.6	0	0	0	35% by 2020
Syrian Arab Republic	A7	2020	135.0	82.0	0	0	0	67.5% by 2025
Thailand	A7	2020	927.6	350.1	0	0	0	15% by 2018 and 61.8% by 2023
Timor Leste	A7	2020	0.5	0.2	0	0	0	10% by 2015 and 78% by 2025
Togo	A7	2020	20.0	10.9	0	0	0	35% by 2020
Tonga	A7	2020	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Trinidad and Tobago	A7	2020	46.0	14.5	0	0	0	35% by 2020 and 100% by 2030
Tunisia	A7	2020	40.7	23.2	0	0	0	15% by 2020 and 67.5% by 2025
Turkey	A7	2020	551.5	1.8	0	0	0	100% by 2025
Turkmenistan	A7	2020	6.8	3.8	0	0	0	35% by 2020 and 67.5% by 2025
Tuvalu	A7	2020	0.1	0.0	0	0	0	35% by 2020 and 100% by 2030
Uganda	A7	2020	0.2	0.1	0	0	0	35% by 2020 and 100% by 2030
United Arab Emirates (the)	A7	2020	557.1	353.6	0	0	0	
United Republic of Tanzania (the)	A7	2020	1.7	1.0	0	0	0	35% by 2020 and 100% by 2030
Uruguay	A7	2020	23.4	11.2	0	0	0	10% by 2015, 35% by 2020 and 100% by 2030
Vanuatu	A7	2020	0.3	0.0	0	0	0	35% by 2020 and 100% by 2030
Venezuela (Bolivarian Republic of)	A7	2019	207.0	0.0	0	0	0	10% by 2015 and 42% by 2020
Viet Nam	A7	2020	221.2	142.2	0	0	0	10% by 2015 and 35% by 2020
Yemen	A7	2020	158.2	99.1	0	0	0	HPMP cancelled
Zambia	A7	2020	5.0	2.2	0	0	0	35% by 2020 and 100% by 2030
Zimbabwe	A7	2020	17.8	6.3	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 DATA IN METRIC TONNES - CO₂-EQUIVALENT

Country	Source	Year of latest consumption	Latest consumption	Ratified Kigali Amendment
Afghanistan	A7	2019	275,000	
Albania	A7	2020	748,209	Yes
Antigua and Barbuda	CP	2020	35,309	
Argentina	A7	2020	12,190,682	Yes
Armenia	A7	2020	195,790	Yes
Bangladesh	A7	2020	4,048,769	Yes
Barbados	A7	2020	318,983	Yes
Benin	A7	2020	1,253,696	Yes
Bhutan	A7	2020	2,876	Yes
Bolivia (Plurinational State of)	A7	2020	425,800	Yes
Botswana	CP	2020	173,598	Yes
Brazil	A7	2020	39,896,041	
Brunei Darussalam	CP	2020	543,002	
Burkina Faso	A7	2020	509,029	Yes
Burundi	CP	2020	51,780	Yes
Cabo Verde	A7	2020	22,797	Yes
Cambodia	A7	2020	885,328	Yes
Cameroon	CP	2020	3,364,717	Yes
Chad	A7	2020	28,386,005	Yes
Chile	A7	2020	4,465,255	Yes
Colombia	A7	2020	5,064,307	Yes
Comoros (the)	A7	2020	35,941	Yes
Cook Islands (the)	A7	2020	1,521	Yes
Costa Rica	A7	2020	1,098,990	Yes
Cote d'Ivoire	A7	2019	24,855,307	Yes
Cuba	A7	2019	1,255,133	Yes
Democratic People's Republic of Korea	A7	2020	496,210	Yes
Djibouti	A7	2020	0	
Dominican Republic (the)	A7	2020	2,472,708	Yes
Ecuador	A7	2020	2,211,928	Yes
Equatorial Guinea	A7	2020	280,362	
Eswatini (the Kingdom of)	CP	2020	32,390	Yes
Ethiopia	A7	2020	302,722	Yes
Fiji	A7	2020	224,248	Yes
Gabon	A7	2020	1,805,193	Yes
Ghana	A7	2020	471,391	Yes
Grenada	A7	2020	32,006	Yes
Guatemala	A7	2020	972,320	
Guinea	A7	2020	0	Yes
Guinea Bissau	CP	2020	743,921	Yes
Guyana	A7	2020	60,724	
Haiti	A7	2020	0	
Honduras	A7	2020	-287,009	Yes
India	A7	2020	0	Yes
Jordan	CP	2020	2,669,252	Yes
Kenya	A7	2020	603,944	
Kiribati	A7	2020	7,063	Yes
Kyrgyzstan	A7	2020	291,736	Yes

Country	Source	Year of latest consumption	Latest consumption	Ratified Kigali Amendment
Lao People's Democratic Republic (the)	A7	2020	76,944	Yes
Lebanon	A7	2020	0	Yes
Lesotho	A7	2020	46,820	Yes
Liberia	A7	2020	73,313	Yes
Madagascar	A7	2020	1,090,927	
Malawi	A7	2020	196,209	Yes
Malaysia	A7	2020	14,569,917	Yes
Maldives	A7	2020	289,202	Yes
Mali	A7	2019	108,522	Yes
Marshall Islands (the)	A7	2020	7,067	Yes
Mauritius	A7	2020	503,851	Yes
Mexico	A7	2020	48,211,034	Yes
Micronesia (Federated States of)	A7	2020	8,341	Yes
Montenegro	A7	2020	170,362	Yes
Namibia	A7	2020	796,190	Yes
Nauru	A7	2020	0	
Nicaragua	CP	2020	462,177	Yes
Niger (the)	A7	2020	985,514	Yes
Nigeria	A7	2020	2,616,728	Yes
Niue	A7	2020	0	Yes
North Macedonia	A7	2020	360,629	Yes
Oman	A7	2020	1,821,602	
Pakistan	A7	2020	9,456,060	
Palau	A7	2020	7,676	Yes
Panama	A7	2020	1,263,720	Yes
Paraguay	A7	2020	1,461,774	Yes
Peru	A7	2020	2,179,188	Yes
Philippines (the)	A7	2020	7,170,780	
Qatar	CP	2019	21,878,613	
Rwanda	A7	2020	268,616	Yes
Saint Lucia	A7	2019	54,429	
Saint Vincent and the Grenadines	A7	2020	16,509	
Samoa	A7	2020	24,593	Yes
Sao Tome and Principe	A7	2020	17,696	Yes
Senegal	A7	2020	1,829,973	Yes
Serbia	A7	2020	2,644,622	
Seychelles	A7	2020	140,392	Yes
Sierra Leone	A7	2020	250,376	Yes
Somalia	A7	2020	0	Yes
South Africa	A7	2019	10,074,432	Yes
Sri Lanka	A7	2020	478,419	Yes
Sudan (the)	A7	2020	1,244,369	
Suriname	A7	2019	132,696	
Syrian Arab Republic	A7	2018	7,587,048	Yes
Timor-Leste	A7	2019	13,645	
Togo	A7	2020	607,767	Yes
Tonga	A7	2020	3,930	Yes
Trinidad and Tobago	A7	2020	4,425,345	Yes
Tunisia	A7	2020	1,719,614	Yes
Turkey	CP	2020	17,519,695	
Turkmenistan	A7	2020	586,253	Yes
Tuvalu	A7	2020	296	Yes

Country	Source	Year of latest consumption	Latest consumption	Ratified Kigali Amendment
Uganda	A7	2020	48,950	Yes
United Republic of Tanzania (the)	A7	2020	252,760	
Uruguay	A7	2020	613,574	Yes
Vanuatu	A7	2020	11,915	Yes
Venezuela (Bolivarian Republic of)	A7	2019	240,541	
Viet Nam	A7	2020	9,414,958	Yes
Zambia	A7	2020	282,182	Yes
Zimbabwe	A7	2020	1,009,387	

*As of 27 September 2021.