

**Twenty-Eighth Meeting of the Parties to  
the Montreal Protocol on Substances  
that Deplete the Ozone Layer**  
Kigali, 10–14 October 2016

## **Further Amendment of the Montreal Protocol**

### **Submitted by the Contact group on HFCs**

- 1.
2. *The Twenty-Eighth Meeting of the Parties,*

### **Decision XXVIII/--- Further Amendment of the Montreal Protocol**

To adopt, in accordance with the procedure laid down in paragraph 4 of Article 9 of the Vienna Convention for the Protection of the Ozone Layer, the Amendment to the Montreal Protocol as set out in Annex ----- to the report of the Twenty-Eighth Meeting of the Parties;

#### **Annex: Amendment of the Montreal Protocol**

##### **Article I: Amendment**

###### *Article 1, paragraph 4*

In paragraph 4 of Article 1 of the Protocol, for the words:

“Annex C or Annex E”

there shall be substituted:

“Annex C, Annex E or Annex F”

###### *Article 2, paragraph 5*

In paragraph 5 of Article 2 of the Protocol, for the words:

“and Article 2H”

there shall be substituted:

“Articles 2H and 2J”

###### *Article 2, paragraphs 8(a), 9(a) and 11*

In paragraphs 8(a) and 11 of Article 2 of the Protocol, for the words:

“Articles 2A to 2I”

there shall be substituted:

“Articles 2A to 2J.”

The following words shall be added at the end of subparagraph (a) of paragraph 8 of Article 2 of the Protocol:

“Any such agreement may be extended to include obligations respecting consumption or production under Article 2J provided that the total combined calculated level of consumption or production of the Parties concerned does not exceed the levels required by Article 2J.”

In subparagraph 9(a)(i) of Article 2 of the Protocol, after the second use of the words:

“should be;”

there shall be deleted:

“and”.

Subparagraph (a)(ii) of paragraph 9 of Article 2 of the Protocol shall be renumbered as subparagraph (a)(iii).

The following shall be added after subparagraph (a)(i) of paragraph 9 of Article 2 of the Protocol:

“Adjustments to the global warming potentials specified in Annexes C and F should be made and, if so, what the adjustments should be; and”

#### *Article 2J*

The following Article shall be inserted after Article 2I of the Protocol:

“Article 2J: Hydrofluorocarbons

1. Each Party shall ensure that for the twelve-month period commencing on 1 January 2019, and in each twelve-month period thereafter, its calculated level of consumption of the controlled substances in Annex F, expressed in CO<sub>2</sub> equivalents, does not exceed the percentage, set out for the respective range of years as specified in subparagraphs (a) to (e) below, of the annual average of its calculated levels of consumption of Annex F controlled substances for the years 2011, 2012, and 2013, plus fifteen per cent of its baseline consumption of Annex C, Group I controlled substances as set out in Article 2F, expressed in CO<sub>2</sub> equivalents:
  3. (a) 2019 to 2023: 90%
  4. (b) 2024 to 2028: 60%
  5. (c) 2029 to 2033: 30%
  6. (d) 2034 to 2035: 20%
  7. (e) 2036 and thereafter: 15%
  - 8.
9. 2. Notwithstanding paragraph 1 of this Article, the Parties may decide that a Party shall ensure that, for the twelve-month period commencing on 1 January 2020, and in each twelve-month period thereafter, its calculated level of consumption of the controlled substances in Annex F, expressed in CO<sub>2</sub> equivalents, does not exceed the percentage, set out for the respective range of years as specified in subparagraphs (a) to (e) below, of the annual average of its calculated levels of consumption of Annex F controlled substances for the years 2011, 2012, and 2013, plus twenty-five per cent of its baseline consumption of Annex C, Group I controlled substances as set out in Article 2F, expressed in CO<sub>2</sub> equivalents:
  10. (a) 2020 to 2024: 95%
  11. (b) 2025 to 2028: 65%
  12. (c) 2029 to 2033: 30%

13. (d) 2034 to 2035: 20%

14. (e) 2036 and thereafter: 15%

15. 3. Each Party producing the controlled substances in Annex F shall ensure that for the twelve-month period commencing on 1 January 2019, and in each twelve-month period thereafter, its calculated level of production of the controlled substances in Annex F, expressed in CO<sub>2</sub> equivalents, does not exceed the percentage, set out for the respective range of years as specified in subparagraphs (a) to (e) below, of the annual average of its calculated levels of production of Annex F controlled substances for the years 2011, 2012, and 2013, plus fifteen per cent of its baseline production of Annex C, Group I controlled substances as set out in Article 2F, expressed in CO<sub>2</sub> equivalents:

16. (a) 2019 to 2023: 90%

17. (b) 2024 to 2028: 60%

18. (c) 2029 to 2033: 30%

19. (d) 2034 to 2035: 20%

20. (e) 2036 and thereafter: 15%

21. [However, in order to satisfy the basic domestic needs of the Parties operating under paragraph 1 of Article 5, its calculated level of production may exceed that limit by up to [ten] per cent of its calculated level of production of the controlled substances in Annex F.]

22. 4. Notwithstanding paragraph 3 of this Article, the Parties may decide that a Party producing the controlled substances in Annex F shall ensure that for the twelve-month period commencing on 1 January 2020, and in each twelve-month period thereafter, its calculated level of production of the controlled substances in Annex F, expressed in CO<sub>2</sub> equivalents, does not exceed the percentage, set out for the respective range of years as specified in subparagraphs (a) to (e) below, of the annual average of its calculated levels of production of Annex F controlled substances for the years 2011, 2012, and 2013, plus twenty-five per cent of its baseline production of Annex C, Group I controlled substances as set out in Article 2F, expressed in CO<sub>2</sub> equivalents:

23. (a) 2020 to 2024: 95%

24. (b) 2025 to 2028: 65%

25. (c) 2029 to 2033: 30%

26. (d) 2034 to 2035: 20%

27. (e) 2036 and thereafter: 15%

28.

29. [However, in order to satisfy the basic domestic needs of the Parties operating under paragraph 1 of Article 5, its calculated level of production may exceed that limit by up to [ten] per cent of its calculated level of production of the controlled substances in Annex F.]

30. 5. Paragraphs 1 to 4 of this Article will apply save to the extent that the Parties decide to permit the level of production or consumption that is necessary to satisfy uses agreed by the Parties to be exempted uses.

31. 6. Each party manufacturing Annex C Group I or Annex F substances shall ensure that for the twelve-month period commencing on 1 January 2020, and in each twelve-month period thereafter, its calculated level of emissions of Annex F, Group II substances generated as a byproduct in each production line that manufactures Annex C, Group I or Annex F substances does not exceed 0.1 per cent of the mass of Annex C, Group I or Annex F substances manufactured in that production line the same twelve-month period. [Each party manufacturing Annex C Group I or Annex F substances shall ensure that for the twelve-month period commencing on 1 January 2020, and in each twelve-month period thereafter, its calculated level of emissions of Annex F, Group II substances generated as a byproduct in each production line that manufactures Annex C, Group I or Annex F substances

does not exceed 0.1 per cent of the mass of Annex C, Group I or Annex F substances manufactured in that production line the same twelve-month period.]”

#### *Article 3*

The preamble to Article 3 of the Protocol should be replaced with the following:

“1. For the purposes of Articles 2, 2A to 2J and 5, each Party shall, for each group of substances in Annex A, Annex B, Annex C, Annex E or Annex F determine its calculated levels of:”

For the final semi-colon of subparagraph (a)(i) of Article 3 of the Protocol there shall be substituted:

“, except as otherwise specified in paragraph 2;”

The following text shall be added to the end of Article 3 of the Protocol:

“; and

(d) Emissions of Annex F, Group II substances generated as in each facility that generates Annex C, Group I or Annex F substances by including, among other things, amounts emitted from equipment leaks, process vents, and destruction devices, but excluding amounts captured for use, destruction, or storage. (DN)

2. When calculating levels, expressed in CO<sub>2</sub> equivalents, of production, consumption, imports, exports and emissions of Annex F and Annex C Group I substances for purposes of Article 2J, paragraph 5ter of Article 2, and paragraph 1(d) of Article 3, each Party shall use the global warming potentials of these substances as specified in Annexes C and F.”

#### *Article 4, paragraph 1 sept*

The following paragraph shall be inserted after paragraph 1 sex of Article 4 of the Protocol:

“1 sept. Within one year of the date of entry into force of this paragraph, each Party shall ban the import of the controlled substances in Annex F from any State not Party to this Protocol.”

#### *Article 4, paragraph 2 sept*

The following paragraph shall be inserted after paragraph 2 sex of Article 4 of the Protocol:

“2 sept. Within one year of the date of entry into force of this paragraph, each Party shall ban the export of the controlled substances in Annex F to any State not Party to this Protocol.”

#### *Article 4, paragraphs 5, 6 and 7*

In paragraphs 5, 6 and 7 of Article 4 of the Protocol, for the words:

“Annexes A, B, C and E”.

there shall be substituted:

“Annexes A, B, C, E and F”

#### *Article 4, paragraphs 8*

In paragraph 8 of Article 4 of the Protocol, for the words:

“Articles 2A to 2I”

there shall be substituted:

“Articles 2A to 2J”.

#### *Article 4B*

The following paragraph shall be inserted after paragraph 2 of Article 4B of the Protocol:

“2 bis. Each Party shall, by 1 January 2019 or within three months of the date of entry into force of this paragraph for it, whichever is later, establish and implement a system for licensing the import and export of new, used, recycled and reclaimed controlled substances in Annex F. Any Party operating under paragraph 1 of Article 5 that decides it is not in a position to establish and implement such a system by 1 January 2019 may delay taking those actions until 1 January 2021.”

*Article 5*

In paragraph 4 of Article 5 of the Protocol, for the word:

“2I”

there shall be substituted:

“2J”.

In paragraphs 5 and 6 of Article 5 of the Protocol, for the words:

“Article 2I”

there shall be substituted:

“Articles 2I and 2J”

In paragraph 5 of Article 5 of the Protocol, before the words:

“any control measures”

there shall be inserted:

“with”

The following paragraph shall be inserted after paragraph 8 ter of Article 5 of the Protocol:

“8qua

(a) Each Party operating under paragraph 1 of this Article, in order to meet its basic domestic needs, and subject to any adjustments made to the control measures in Article 2J in accordance with paragraph 9 of Article 2, shall be entitled to delay its compliance with the control measures set out in subparagraphs (a) – (e) of paragraph 1 of Article 2J and subparagraphs (a) – (e) of paragraph 3 of Article 2J and modify those measures as follows:

- i. 2024 to 2028: 100%
- ii. 2029 to 2034: 90%
- iii. 2035 to 2039: 70%
- iv. 2040 to 2044: 50%
- v. 2045 and thereafter: 20%

(b) Notwithstanding paragraph (a) above, the Parties may decide that a Party operating under paragraph 1 of this Article, in order to meet its basic domestic needs, and subject to any adjustments made to the control measures in Article 2J in accordance with paragraph 9 of Article 2, shall be entitled to delay its compliance with the control measures set out in subparagraphs (a) – (e) of paragraph 1 of Article 2J and subparagraphs (a) – (e) of paragraph 3 of Article 2J and modify those measures as follows:

- i. 2028 to 2031: 100%
- ii. 2032 to 2036: 90%
- iii. 2037 to 2041: 80%
- iv. 2042 to 2046: 70%
- v. 2047 and thereafter: 15%

(c) Each Party operating under paragraph 1 of this Article, for the purposes of calculating its consumption baseline under Article 2J, shall be entitled to use the average of its calculated levels of consumption of Annex F controlled substances for the years 2020, 2021, and 2022, plus sixty-five per cent of its baseline consumption of Annex C, Group I controlled substances as set out in paragraph 8 ter of this Article.

(d) Notwithstanding paragraph (c) above, the Parties may decide that a Party operating under paragraph 1 of this Article, for the purposes of calculating its consumption baseline under Article 2J, shall be entitled to use the average of its calculated levels of consumption of Annex F controlled substances for the years 2024, 2025, and 2026, plus sixty-five per cent of its baseline consumption of Annex C, Group I controlled substances as set out in paragraph 8 ter of this Article.

(e) Each Party operating under paragraph 1 of this Article and producing the controlled substances in Annex F, for the purposes of calculating its production baseline under Article 2J, shall be entitled to use the average of its calculated levels of production of Annex F controlled substances for the years 2020, 2021, and 2022, plus sixty-five per cent of its baseline production of Annex C, Group I controlled substances as set out in paragraph 8 ter of this Article.

(f) Notwithstanding paragraph (e) above, the Parties may decide that a Party operating under paragraph 1 of this Article and producing the controlled substances in Annex F, for the purposes of calculating its production baseline under Article 2J, shall be entitled to use the average of its calculated levels of production of Annex F controlled substances for the years 2024, 2025, and 2026, plus sixty-five per cent of its baseline consumption of Annex C, Group I controlled substances as set out in paragraph 8 ter of this Article.

(g) Paragraphs (a) to (f) of this Article will apply to calculated levels of production and consumption save to the extent that a high ambient temperature exemption applies based on criteria decided by the Parties.”

#### *Article 6*

In Article 6 of the Protocol, for the words:

“Articles 2A to 2I”

there shall be substituted:

“Articles 2A to 2J”.

#### *Article 7, paragraphs 2, 3 and 3 ter*

The following line shall be inserted after the line that reads “– in Annex E, for the year 1991,” in paragraph 2 of Article 7 of the Protocol:

– in Annex F, for the years 2011 to 2013, except that Parties operating under paragraph 1 of Article 5 shall provide such data for 2020 to 2022, but those Parties operating under paragraph 1 of Article 5 using to which subparagraphs b and d of paragraph 8 qua of Article 5 applies shall provide such data for 2024 to 2026;”.

In paragraphs 2 and 3 of Article 7 of the Protocol, for the words:

“C and E”

there shall be substituted:

“C, E and F”.

The following paragraph shall be added to Article 7 of the Protocol after paragraph 3 bis:

“3 ter. Each Party shall provide to the Secretariat statistical data of its annual emissions of Annex F, Group II controlled substances per facility in accordance with Article 3(d) of the Protocol.”(DN)

#### *Article 10*

In paragraph 1 of Article 10 of the Protocol, for the words:

“ and Article 2I”

There shall be substituted:

“, Article 2I and Article 2J”.

The following shall be inserted at the end of Article 10, paragraph 1 of the Protocol:

“Where a Party operating under paragraph 1 of Article 5 chooses to avail itself of funding from any other financial mechanism that could result in meeting any part of its agreed incremental costs, that part shall not be met by the financial mechanism under Article 10 of this Protocol.”

*Article 17*

In Article 17 of the Protocol, for the words:

“Articles 2A to 2I”

there shall be substituted:

“Articles 2A to 2J”.

*Annex C and Annex F*

The following table shall replace the table for Group I in Annex C to the Protocol:

<b>Group</b>	<b>Substance</b>	<b>Number of isomers</b>	<b>Ozone-Depleting Potential*</b>	<b>100-Year Global Warming Potential***</b>	
<i>Group I</i>					
	CHFC1 <sub>2</sub>	(HCFC21)**	1	0.04	151
	CHF <sub>2</sub> Cl	(HCFC22)**	1	0.055	1810
	CH <sub>2</sub> FC1	(HCFC31)	1	0.02	
	C <sub>2</sub> HFCl <sub>4</sub>	(HCFC121)	2	0.01–0.04	
	C <sub>2</sub> HF <sub>2</sub> Cl <sub>3</sub>	(HCFC122)	3	0.02–0.08	
	C <sub>2</sub> HF <sub>3</sub> Cl <sub>2</sub>	(HCFC123)	3	0.02–0.06	77
	CHCl <sub>2</sub> CF <sub>3</sub>	(HCFC123)**	–	0.02	
	C <sub>2</sub> HF <sub>4</sub> Cl	(HCFC124)	2	0.02–0.04	609
	CHFClCF <sub>3</sub>	(HCFC124)**	–	0.022	
	C <sub>2</sub> H <sub>2</sub> FC1 <sub>3</sub>	(HCFC131)	3	0.007–0.05	
	C <sub>2</sub> H <sub>2</sub> F <sub>2</sub> Cl <sub>2</sub>	(HCFC132)	4	0.008–0.05	
	C <sub>2</sub> H <sub>2</sub> F <sub>3</sub> Cl	(HCFC133)	3	0.02–0.06	
	C <sub>2</sub> H <sub>3</sub> FC1 <sub>2</sub>	(HCFC141)	3	0.005–0.07	
	CH <sub>3</sub> CFCl <sub>2</sub>	(HCFC141b)**	–	0.11	725
	C <sub>2</sub> H <sub>3</sub> F <sub>2</sub> Cl	(HCFC142)	3	0.008–0.07	
	CH <sub>3</sub> CF <sub>2</sub> Cl	(HCFC142b)**	–	0.065	2310
	C <sub>2</sub> H <sub>4</sub> FC1	(HCFC151)	2	0.003–0.005	
	C <sub>3</sub> HFCl <sub>6</sub>	(HCFC221)	5	0.015–0.07	
	C <sub>3</sub> HF <sub>2</sub> Cl <sub>5</sub>	(HCFC222)	9	0.01–0.09	
	C <sub>3</sub> HF <sub>3</sub> Cl <sub>4</sub>	(HCFC223)	12	0.01–0.08	
	C <sub>3</sub> HF <sub>4</sub> Cl <sub>3</sub>	(HCFC224)	12	0.01–0.09	
	C <sub>3</sub> HF <sub>5</sub> Cl <sub>2</sub>	(HCFC225)	9	0.02–0.07	
	CF <sub>3</sub> CF <sub>2</sub> CHCl <sub>2</sub>	(HCFC225ca)**	–	0.025	122
	CF <sub>2</sub> ClCF <sub>2</sub> CHClF	(HCFC225cb)**	–	0.033	595
	C <sub>3</sub> HF <sub>6</sub> Cl	(HCFC226)	5	0.02–0.10	
	C <sub>3</sub> H <sub>2</sub> FC1 <sub>5</sub>	(HCFC231)	9	0.05–0.09	
	C <sub>3</sub> H <sub>2</sub> F <sub>2</sub> Cl <sub>4</sub>	(HCFC232)	16	0.008–0.10	
	C <sub>3</sub> H <sub>2</sub> F <sub>3</sub> Cl <sub>3</sub>	(HCFC233)	18	0.007–0.23	
	C <sub>3</sub> H <sub>2</sub> F <sub>4</sub> Cl <sub>2</sub>	(HCFC234)	16	0.01–0.28	
	C <sub>3</sub> H <sub>2</sub> F <sub>5</sub> Cl	(HCFC235)	9	0.03–0.52	

C <sub>3</sub> H <sub>3</sub> FCI <sub>4</sub>	(HCFC241)	12	0.004–0.09	
C <sub>3</sub> H <sub>3</sub> F <sub>2</sub> Cl <sub>3</sub>	(HCFC242)	18	0.005–0.13	
C <sub>3</sub> H <sub>3</sub> F <sub>3</sub> Cl <sub>2</sub>	(HCFC243)	18	0.007–0.12	
C <sub>3</sub> H <sub>3</sub> F <sub>4</sub> Cl	(HCFC244)	12	0.009–0.14	
C <sub>3</sub> H <sub>4</sub> FCI <sub>3</sub>	(HCFC251)	12	0.001–0.01	
C <sub>3</sub> H <sub>4</sub> F <sub>2</sub> Cl <sub>2</sub>	(HCFC252)	16	0.005–0.04	
C <sub>3</sub> H <sub>4</sub> F <sub>3</sub> Cl	(HCFC253)	12	0.003–0.03	
C <sub>3</sub> H <sub>5</sub> FCI <sub>2</sub>	(HCFC261)	9	0.002–0.02	
C <sub>3</sub> H <sub>5</sub> F <sub>2</sub> Cl	(HCFC262)	9	0.002–0.02	
C <sub>3</sub> H <sub>6</sub> FCI	(HCFC271)	5	0.001–0.03	

\* Where a range of ODPs is indicated, the highest value in that range shall be used for the purposes of the Protocol. The ODPs listed as a single value have been determined from calculations based on laboratory measurements. Those listed as a range are based on estimates and are less certain. The range pertains to an isomeric group. The upper value is the estimate of the ODP of the isomer with the highest ODP, and the lower value is the estimate of the ODP of the isomer with the lowest ODP.

\*\* Identifies the most commercially viable substances with ODP values listed against them to be used for the purposes of the Protocol.

\*\*\* For substances for which no GWP is indicated, the default value 0 applies.

The following annex shall be added to the Protocol after Annex E:

**“Annex F:            Controlled substances**

Group		100-year Global Warming Potential	
<b>Group I</b>			
CHF <sub>2</sub> CHF <sub>2</sub>	HFC-134	1,100	
CH <sub>2</sub> FCF <sub>3</sub>	HFC-134a	1,430	
CH <sub>2</sub> FCHF <sub>2</sub>	HFC-143	353	
CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	HFC-245fa	1,030	
CF <sub>3</sub> CH <sub>2</sub> CF <sub>2</sub> CH <sub>3</sub>	HFC-365mfc	794	
CF <sub>3</sub> CHF <sub>2</sub> CF <sub>3</sub>	HFC-227ea	3,220	
CH <sub>2</sub> FCF <sub>2</sub> CF <sub>3</sub>	HFC-236cb	1,340	
CHF <sub>2</sub> CHF <sub>2</sub> CF <sub>3</sub>	HFC-236ea	1,370	
CF <sub>3</sub> CH <sub>2</sub> CF <sub>3</sub>	HFC-236fa	9,810	
CH <sub>2</sub> FCF <sub>2</sub> CHF <sub>2</sub>	HFC-245ca	693	
CF <sub>3</sub> CHFCH <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub>	HFC-43-10mee	1,640	
CH <sub>2</sub> F <sub>2</sub>	HFC-32	675	
CHF <sub>2</sub> CF <sub>3</sub>	HFC-125	3,500	
CH <sub>3</sub> CF <sub>3</sub>	HFC-143a	4,470	
CH <sub>3</sub> F	HFC-41	92	
CH <sub>2</sub> FCH <sub>2</sub> F	HFC-152	53	
CH <sub>3</sub> CHF <sub>2</sub>	HFC-152a	124	
CH <sub>3</sub> CH <sub>2</sub> F	HFC-161	12	
<b>Group II</b>			
[CHF <sub>3</sub>	HFC-23	14,800]”	

**Article II: Relationship to the 1999 Amendment**

No State or regional economic integration organization may deposit an instrument of ratification, acceptance or approval of or accession to this Amendment unless it has previously, or simultaneously, deposited such an instrument to the Amendment adopted at the Eleventh Meeting of the Parties in Beijing, 3 December 1999.

**Article III: Relationship to the United Nations Framework Convention on Climate Change and its Kyoto Protocol**

This Amendment is not intended to have the effect of excepting hydroflouorocarbons from the scope of the commitments contained in Articles 4 and 12 of the United Nations Framework Convention on Climate Change or in Articles 2, 5, 7 and 10 of its Kyoto Protocol.

**Article IV: Entry into force**

1. Except as noted in paragraph 2, below, this Amendment shall enter into force on 1 January 2019, provided that at least twenty instruments of ratification, acceptance or approval of the Amendment have been deposited by States or regional economic integration organizations that are Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer. In the event that this condition has not been fulfilled by that date, the Amendment shall enter into force on the ninetieth day following the date on which it has been fulfilled.
2. The changes to Article 4 of the Protocol, control of trade with non-Parties, set out in Article I of this Amendment shall enter into force on 1 January 2029, provided that at least seventy instruments of ratification, acceptance or approval of the Amendment have been deposited by States or regional economic integration organizations that are Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer. In the event that this condition has not been fulfilled by that date, the Amendment shall enter into force on the ninetieth day following the date on which it has been fulfilled.
3. For purposes of paragraphs 1 and 2, any such instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by member States of such organization.
4. After the entry into force of this Amendment, as provided under paragraphs 1 and 2, it shall enter into force for any other Party to the Protocol on the ninetieth day following the date of deposit of its instrument of ratification, acceptance or approval.

**Article V: Provisional Application**

Any Party may, at any time before this Amendment enters into force for it, declare that it will apply provisionally any of the control measures set out in Article 2J, and the corresponding reporting obligations in Article 7, pending such entry into force.

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The Twenty-Eighth Meeting of the Parties decides:

- That paragraphs 2 and 4 of Article 2J in Article I of the Amendment are applicable to Belarus, the Russian Federation, Kazakhstan, Tajikistan, and Uzbekistan;
- That subparagraphs (b) and (d) of paragraph 8 *qua* of Article 5 of Article I of the Amendment are applicable to Bahrain, India, Iran, Iraq, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia, and the United Arab Emirates;
- To recognize the importance of timely updating international standards for flammable low-GWP refrigerants, including IEC60335-2-40, and to support promoting actions that allow safe market introduction, as well as manufacturing, operation, maintenance and handling of zero-GWP or low-GWP refrigerant alternatives to hydrochlorofluorocarbons and hydrofluorocarbons;

- To conduct periodic reviews of alternatives using criteria set out in paragraph 1 (a) of decision XXVI/9;
- [To request the TEAP to conduct a review of the adoption of alternatives to hydrofluorocarbons in sub-sectors, including an assessment of the technical and economic factors facilitating and impeding market adoption that are relevant for those Article 5 parties listed in paragraph [X] above with respect to the relevant freeze date, and submit a report on this information for consideration by the Open-Ended Working Group in 2024];
- That Parties operating under paragraph 1 of Article 5 will have flexibility to prioritize hydrofluorocarbons, define sectors, select technologies/alternatives, elaborate and implement their strategies to meet agreed hydrofluorocarbon obligations, based on their specific needs and national circumstances, following a country-driven approach;
- To request the Executive Committee of the Multilateral Fund to incorporate the principle in the paragraph above into relevant funding guidelines for the phase-down of hydrofluorocarbons and in its decision making process;
- To acknowledge the linkage between the hydrofluorocarbon and hydrochlorofluorocarbon reduction schedules relevant to sectors and the preference to avoid transitions from hydrochlorofluorocarbons to high-GWP hydrofluorocarbons and to provide flexibility if no other technically proven and economically viable alternatives are available;
- To also acknowledge these linkages with respect to certain sectors, in particular industrial process refrigeration, and the preference to avoid transitions from hydrochlorofluorocarbons to high-GWP hydrofluorocarbons, and to be willing to provide flexibility, if no other alternatives are available, in cases where: (1) hydrochlorofluorocarbon supply may be unavailable from existing allowable consumption, stocks as well as recovered/recycled material, and (2) if it would allow for a direct transition at a later date from hydrochlorofluorocarbons to low-GWP or zero GWP alternatives;
- To provide, prior to the commencement of any Article 5 hydrofluorocarbon freeze or other initial control obligations and in light of the acknowledgement above, flexibility measures in relation to the hydrochlorofluorocarbon phase-out relevant to certain sectors, in particular the industrial process refrigeration subsector, in order to avoid double conversions;
- To recognize that the amendment maintains the Multilateral Fund as the financial mechanism and that sufficient additional financial resources will be provided by Parties not operating under paragraph 1 of Article 5 to offset costs arising out of hydrochlorofluorocarbon obligations for Parties operating under paragraph 1 of Article 5 under this amendment;
- That Parties operating under paragraph 1 of Article 5 will have flexibility to prioritize hydrofluorocarbons, define sectors, select technologies/alternatives, elaborate and implement their strategies to meet agreed hydrofluorocarbon obligations, based on their specific needs and national circumstances, following a country-driven approach;
- To request the Executive Committee of the Multilateral Fund to incorporate the principle in the paragraph above into relevant funding guidelines for the phase-down of hydrofluorocarbons and in its decision making process;
- To request the Executive Committee to develop, within one year of the adoption of this amendment, guidelines for financing the phase-down of hydrofluorocarbon consumption and production, including cost-effectiveness thresholds;
- To request the Chair of the Executive Committee to report back to the Meeting of the Parties on the progress made in accordance with this decision, including on cases where Executive Committee deliberations have resulted in a change in the national strategy or the national technology choice submitted to the Executive Committee;

- To request the Executive Committee of the Multilateral Fund to revise the rules of procedure of the Executive Committee with a view to building in more flexibility for Parties operating under paragraph 1 of Article 5;
- To request the Executive Committee, in developing new guidelines on methodologies and cost calculations, to make the following categories of costs eligible and to include them in the cost calculation:
  - For the consumption manufacturing sector:
    - Incremental capital costs;
    - Incremental operating costs;
    - Technical assistance activities;
    - Research and development, when required to adapt and optimize low-GWP or zero-GWP alternatives to hydrofluorocarbons;
    - Costs of patents and designs, and incremental costs of royalties, when necessary and cost-effective; and
    - Costs of safe introduction of flammable and toxic alternatives.
  - For the production sector:
    - Lost profit due to shutdown/closure of the production facilities as well as production reduction;
    - Compensation to displaced workers;
    - Dismantling of production facilities;
    - Technical assistance activities;
    - Research and development related to the production of low-GWP or zero-GWP alternatives to hydrofluorocarbons with a view to lowering the costs of alternatives
    - Costs of patents and designs or incremental costs of royalties
    - Costs of converting facilities to produce low-GWP or zero-GWP alternatives to hydrofluorocarbons when technically feasible and cost-effective
    - Costs of reducing emissions of HFC-23, a by-product from the production process of HCFC-22, by reducing its emission rate in the process, destroying it from the off-gas, or by collecting and converting to other environmentally safe chemicals. Such costs should be funded by the Multilateral Fund to meet the obligations of Parties operating under paragraph 1 of Article 5 specified under this amendment.
  - For the servicing sector:
    - Public awareness activities;
    - Policy development and implementation;
    - Certification programs and training of technicians on the safe handling, good practice and safety of alternatives, including training equipment;
    - Training of customs officers;
    - Preventing illegal trade of hydrofluorocarbons;
    - Servicing tools;
    - Refrigerant testing equipment for the RAC sector;
    - Recycling and recovery of hydrofluorocarbons

- [Additional import costs]
- [Incremental cost of refrigerants for MVAC servicing/recharging]
- To request the Executive Committee of the Multilateral Fund to increase in relation to the servicing sector the funding available under Executive Committee Decision 74/50 up to a maximum of [X %] above the amounts listed in that decision for Parties with total HCFC baseline consumption up to 360 metric tonnes when needed for the introduction of alternatives to hydrochlorofluorocarbons with low-GWP and zero-GWP alternatives to hydrofluorocarbons, and maintaining energy efficiency also in the servicing/end-user sector;
- That the cut-off date for eligible capacity is [DATE];
- To request the Executive Committee to develop cost guidance associated with maintaining and/or enhancing energy efficiency of low-GWP or zero-GWP replacement technologies and equipment, when phasing down hydrofluorocarbons, while taking note of the role of other institutions addressing energy efficiency, when appropriate;
- To direct the Executive Committee to increase institutional strengthening support in light of new commitments related to hydrofluorocarbons under this amendment;
- To request the Executive Committee of the Multilateral Fund to consider funding the cost-effective management of stockpiles of used or unwanted controlled substances, including destruction;
  
- To request the Executive Committee of the Multilateral Fund to prioritize technical assistance and capacity building to address safety issues associated with low-GWP or zero-GWP alternatives;
- [Additional cost of importing alternative substances];
- That the Parties may identify other cost items to be added to the indicative list emanating as a result of the conversion to low-GWP alternatives;
- To request the Executive Committee of the Multilateral Fund to incorporate the following principles relating to second and third conversions into funding guidelines:
  - first conversions, in the context of a phase-down of hydrofluorocarbons, are defined as conversions of enterprises to low-GWP or zero-GWP alternatives that have never received any direct or indirect support, in part or in full, from the Multilateral Fund, including enterprises that converted to hydrofluorocarbons with their own resources;
  - enterprises that have already converted to hydrofluorocarbons in phasing out CFCs and/or hydrochlorofluorocarbons will be eligible to receive funding from the Multilateral Fund to meet agreed incremental costs in the same manner as enterprises eligible for first conversions;
  - enterprises that convert from hydrochlorofluorocarbons to high-GWP hydrofluorocarbons, after the date of adoption of a hydrofluorocarbon amendment, under HPMPs already approved by the Executive Committee will be eligible to receive funding from the Multilateral Fund for a subsequent conversion to low-GWP or zero-GWP alternatives to meet agreed incremental costs in the same manner as enterprises eligible for first conversions;
  - enterprises that convert from hydrochlorofluorocarbons to high-GWP hydrofluorocarbons with their own resources before the freeze date under this amendment will be eligible to receive funding from the Multilateral Fund to meet agreed incremental costs in the same manner as enterprises eligible for first conversions;

- enterprises that convert from hydrofluorocarbons to lower-GWP hydrofluorocarbons with Multilateral Fund support when no other alternatives are available will be eligible to receive funding from the Multilateral Fund for a subsequent conversion to low-GWP or zero-GWP alternatives if necessary to meet the final hydrofluorocarbon phase-down step;
- To request the Executive Committee of the Multilateral Fund to incorporate the following principle related to sustained aggregate reductions in Multilateral Fund policies;
- That remaining eligible consumption for funding in tonnage will be determined on the basis of the starting point of the national aggregate consumption less the amount funded by previously approved projects in future multi-year agreement templates for hydrofluorocarbon phase-down plans, consistent with Executive Committee Decision 35/57;
- To request the Executive Committee of the Multilateral Fund to include the following enabling activities to be funded in relation to the hydrofluorocarbon phase-down in the amendment:
  - Capacity-building and training for handling hydrofluorocarbon alternatives in the servicing sector, the manufacturing and production sectors;
  - Institutional strengthening;
  - Article 4B licensing;
  - Reporting;
  - Demonstration projects; and
  - Developing national strategies.

### **Exemption for High Ambient Temperature Countries**

1. To make available an exemption for Parties with high ambient temperature conditions where suitable alternatives do not exist for the specific sub-sector of use, as described below;
2. To distinguish and separate this exemption from the essential and critical use exemptions under the Montreal Protocol;
3. To make this exemption effective and available as of the hydrofluorocarbon freeze date or other initial control obligation, with an initial duration of four years;
4. To apply this exemption for sub-sectors contained in Annex I in Parties with an average of at least two months per year over 10 consecutive years with a peak monthly average temperature above 35 degrees Celsius, where the Party has formally notified the Secretariat of its intent to use this exemption no later than one year before the hydrofluorocarbon freeze date or other initial control obligation, and every four years thereafter should it wish to extend the exemption;<sup>12</sup>
5. That any Party operating under this high ambient temperature exemption will report separately its production and consumption data for the sub-sectors to which a high ambient temperature exemption applies;
6. That any transfer of production and consumption allowances for this high ambient temperature exemption will be reported to the Secretariat under Article 7 of the Protocol by each of the Parties concerned;
7. The Technology and Economic Assessment Panel (TEAP) and a TEAP subsidiary body that includes outside expertise on high ambient temperatures will

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<sup>1</sup> Spatially weighted average temperatures deriving the daily highest temperatures (using the Centre for Environmental Data Archival: [http://browse.ceda.ac.uk/browse/badc/cru/data/cru\\_cy/cru\\_cy\\_3.22/data/tmx](http://browse.ceda.ac.uk/browse/badc/cru/data/cru_cy/cru_cy_3.22/data/tmx))

<sup>2</sup> As listed in Annex II

assess the suitability of hydrofluorocarbon alternatives for use where suitable alternatives do not exist based on criteria agreed by the Parties and can recommend to add or remove sub-sectors to Annex I, that will include, but not be limited to, the criteria listed in paragraph 1(a) of Decision XXVI/9, and report this information to the Meeting of the Parties.<sup>3</sup>

8. That this assessment will take place periodically starting four years from the hydrofluorocarbon freeze date or other initial control obligation and every four years thereafter;

9. To review, no later than the year following receipt of the first TEAP report on suitability of alternatives, the need for an extension of this exemption for a further period of up to four years, and periodically thereafter, for specific sub-sectors in Parties that meet the criteria set out in paragraph 4 above, and that Parties will develop an expedited process to ensure the renewal of the exemption in a timely manner where there are no feasible alternatives, taking into account the recommendation of the TEAP and its subsidiary body;

10. That amounts of Annex F substances that are subject to the HAT exemption are not eligible for funding under the Multilateral Fund while they are exempted for that Party;

11. That the Implementation Committee and Meeting of the Parties should, for 2025 and 2026, defer the consideration of the HCFC compliance status of any Party operating under a high ambient temperature exemption in cases where it has exceeded its allowable consumption or production levels due to its HCFC-22 consumption or production for the sub-sectors listed in Annex I, on the condition that the Party concerned is following the phase-out schedule for consumption and production of Hydrochlorofluorocarbons for other sectors and has formally requested a deferral through the Secretariat;

12. To consider, no later than 2026, whether to extend the compliance deferral in paragraph 11 for an additional period of two years, and, if appropriate, to consider further deferrals thereafter, for Parties operating under the high ambient temperature exemption.

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<sup>3</sup> insert criteria from XXVI/9 para (1)(a)

## **Other Exemptions**

256. To allow for other exemptions, such as for essential use and critical uses, for production or consumption that is necessary to satisfy uses agreed by the Parties to be exempted uses;

257. To consider mechanisms for such exemptions in [20XX], including multi-year exemption mechanisms;

258. To provide information and guidance to the TEAP for its periodic review of sectors where exemptions may be required.

## **Annex I: List of Exempted Equipment for High Ambient Temperatures**

- Multi-split air conditioners for commercial and residential
- Split ducted air conditioners (residential and commercial)
- Ducted commercial packaged (self-contained) air conditioners

## **Annex II: List of countries operating under the high ambient temperature exemption**

Algeria, Bahrain, Benin, Burkina Faso, Central African Republic, Chad, Cote d'Ivoire, Djibouti, Egypt, Eritrea, Gambia, Ghana, Guinea, Guinea-Bissau, Iran, Iraq, Jordan, Kuwait, Libya, Mali, Mauritania, Niger, Nigeria, Oman, Pakistan, Qatar, Saudi Arabia, Senegal, Sudan, Syria, Togo, Tunisia, Turkmenistan, United Arab Emirates