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**Twenty-First Meeting of the Parties to the
Montreal Protocol on Substances that
Deplete the Ozone Layer**

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Item 6 (a) of the provisional agenda
for the preparatory segment*

**High-global-warming-potential alternatives to
ozone-depleting substances (decision XX/8):
proposed amendment to the Montreal Protocol**

Item 10 of the provisional agenda
for the high-level segment*

**Adoption of decisions by the Twenty-First Meeting
of the Parties to the Montreal Protocol**

Draft decisions and proposed amendments to the Montreal Protocol

Addendum

Note by the secretariat

1. Pursuant to paragraph 2 of Article 9 of the Vienna Convention, the Secretariat is circulating in the annex to the present note a joint proposal submitted by Canada, Mexico and the United States of America intended to supplement the amendment proposal previously submitted by the Federated States of Micronesia and Mauritius. The latter proposal is contained in section B of chapter II of document UNEP/OzL.Pro.21/3. The annex also contains summary points of the proposed amendment.

2. The contents of the annex are being circulated as received and have not been formally edited by the Secretariat.

* UNEP/OzL.Pro.21/1.

Annex

Summary Points: North American HFC Submission to the Montreal Protocol

1. The North American proposal is a clarification or supplement to the Mauritius and Micronesia proposal which is formally under consideration under the Protocol this year having been submitted prior to the May 4 deadline for amendments. The following are key elements of the proposal:

- (a) Lists 20 specified HFCs as a new Annex F to the Protocol (including two substances sometimes referred to as HFOs).
- (b) Recognizes that there are not alternatives for all HFC applications and therefore utilizes a phasedown mechanism, as opposed to a phaseout.
- (c) Establishes provisions for developed country (non-Article 5) phasedown of production and consumption:
 - (i) Uses a baseline of the average of 2004-2006 annual production and consumption of HCFCs and HFCs
 - (ii) Initiates the phasedown in 2013
 - (iii) Achieves a final phasedown plateau of 15% of baseline in 2033.
- (d) Establishes provisions for developing country (Article 5) phasedown of production and consumption:
 - (i) Uses a baseline of the average of 2004-2006 annual production and consumption of HCFCs and HFCs
 - (ii) Initiates the phasedown in 2016
 - (iii) Achieves a final phasedown plateau of 15% of baseline in 2043.
- (e) Both developed and developing country phasedowns include interim steps between initiation and the final plateau step.
- (f) Introduces weighting using Global Warming Potential for HFCs as compared to typical Montreal Protocol practice of Ozone Depleting Potential
- (g) Includes provisions to strictly limit HFC-23 byproduct emissions resulting from the production of HCFCs (e.g. HCFC 22).
- (h) Requires licensing of HFC imports and exports, and bans imports and exports to non-Parties.
- (i) Finally, requires reporting on production and consumption of HFCs, as well as on HFC-23 byproduct emissions.

2. Relationship with the UNFCCC:

- (a) The proposal envisions an amendment to the Montreal Protocol, and a related decision by the UNFCCC confirming the Montreal Protocol approach.
- (b) It would leave unchanged the provisions of the UNFCCC / Kyoto Protocol that govern HFCs.
- (c) The Montreal Protocol obligations would be consistent with, and additional to, UNFCCC and/or Kyoto Protocol obligations. Parties could follow Montreal Protocol obligations as a way to meet some of their UNFCCC obligations with regard to HFCs.

Text of HFC Phasedown Submission

[Preambular language placeholder]

Article I: Amendment

A. 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”

B. 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”

C. Article 2, paragraph 5 ter

The following paragraph shall be added after paragraph 5 *bis* of Article 2 of the Protocol:

“5 *ter*. Any Party not operating under paragraph 1 of Article 5 may, for one or more control periods, transfer to another such Party any portion of its calculated level of consumption set out in Article 2 J, provided that the calculated level of consumption of controlled substances in Annex F of the Party transferring the portion of its calculated level of consumption did not exceed [0.25] kilograms per capita in [2008] and that the total combined calculated levels of consumption of the Parties concerned do not exceed the consumption limits set out in Article 2J. Such transfer of consumption shall be notified to the Secretariat by each of the Parties concerned, stating the terms of such transfer and the period for which it is to apply.”

D. Article 2, paragraphs 8(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”

E. Article 2, paragraph 9

The “and” at the end of subparagraph 9(a)(i) of Article 2 of the Protocol shall be moved to the end of subparagraph 9(a)(ii).

The following subparagraph shall be inserted after subparagraph 9(a)(ii) of Article 2 of the Protocol:

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

In paragraph 9(c) of Article 2 of the Protocol, the following language shall be inserted immediately after the words “In taking such decisions”:

“under subparagraphs 9(a)(i) and (ii)”:

For the final semi-colon of paragraph 9(c) of Article 2 of the Protocol there shall be substituted:

“. In taking such decisions under subparagraph 9(a)(iii), the Parties shall reach agreement by consensus only;”

F. 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 [2013], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [ninety] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C, Group I controlled substances. Each Party producing one or more of these substances shall, for the same period, ensure that its calculated level of production of the substances does not exceed, annually, its the average of calculated levels of production in [2004, 2005, and 2006] of Annex F plus Annex C, Group I controlled substances. 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 the average of its calculated level of production in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances.

2. Each Party shall ensure that for the twelve-month period commencing on 1 January [2017], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [eighty] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I controlled substances. Each Party producing one or more of these substances shall, for the same period, ensure that its calculated level of production of the substances does not exceed, annually, [eighty] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C, Group I substances. 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 the average of its calculated levels of production in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances.

3. Each Party shall ensure that for the twelve-month period commencing on 1 January [2020], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [seventy] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. Each Party producing one or more of these substances shall, for the same period, ensure that its calculated level of production of the substances does not exceed, annually, [seventy] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. 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 the average of its calculated levels of production in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances.

4. Each Party shall ensure that for the twelve-month period commencing on 1 January [2025], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [fifty] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. Each Party producing one or more of these substances shall, for the same period, ensure that its calculated level of production of the substances does not exceed, annually, [fifty] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. 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 the average of its calculated levels of production in [2004, 2005 and 2006] of Annex F plus Annex C Group I substances.

5. Each Party shall ensure that for the twelve-month period commencing on 1 January [2029], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [thirty] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. Each Party producing one or more of these substances shall, for the same period, ensure that its calculated level of production of the substances does not exceed, annually, [thirty] per cent of the average of its calculated levels of consumption in [2004, 2005, and

2006] of Annex F plus Annex C Group I substances. 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 the average of its calculated levels of production in [2004, 2005 and 2006] of Annex F plus Annex C Group I substances.

6. Each Party shall ensure that for the twelve-month period commencing on 1 January [2033], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [fifteen] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. Each Party producing one or more of these substances shall, for the same period, ensure that its calculated level of production of the substances does not exceed, annually, [fifteen] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. 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 the average of its calculated levels of production in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances.

7. Each party shall ensure that for the 12-month period commencing on January 1, 2013, and in each 12-month period thereafter, its calculated level of production of Annex F, Group II substances generated as a byproduct of the manufacture of Annex C, Group I substances shall not exceed zero except to the extent that emissions of Annex F, Group II substances from facilities that manufacture Annex C, Group I substances, together with emissions of Annex F, Group II substances from facilities that destroy [more than 2.14 metric tons per year of] Annex F, Group II substances, do not exceed [0.1 percent] of the mass of Annex C, Group I substances manufactured in processes producing Annex F, Group II substances as a byproduct. For purposes of this paragraph, notwithstanding the definition of production in paragraph 5 of Article 1, the calculated level of production of Annex F, Group II substances generated as a byproduct shall include amounts destroyed onsite or at another facility.

8. Each Party shall ensure that any destruction of Annex F, Group II substances generated by facilities that produce Annex C, Group I substances shall occur only by technologies to be approved by the Parties.

G. Article 3

In the preamble to Article 3 of the Protocol, for the words:

“2A to 2I”

there shall be substituted:

“2A to 2J”

In the preamble to Article 3 of the Protocol, for the words:

“Annex C or Annex E”

there shall be substituted:

“Annex C, Annex E or Annex F”

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

“, or by the global warming potential specified in respect of it in Annex F;”

For the period at the end of subparagraph (c) of Article 3 of the Protocol there shall be substituted a semi-colon, and the “and” at the end of subparagraph (b) of Article 3 of the Protocol shall be moved to the end of subparagraph (c).

The following clause should be added to the end of Article 3 of the Protocol:

“(d) Emissions of Annex F, Group II substances by adding together all emissions of such substances from facilities that produce Annex C, Group I substances, or from facilities that destroy [more than [2.14][1.69] metric tons of] Annex F, Group II substances per year. For facilities that produce Annex C, Group I substances, emissions shall equal the amount of Annex F, Group II substances generated at the facility,

including amounts emitted from equipment leaks, process vents, and thermal oxidizers, but excluding amounts destroyed on site, stored on site, shipped off site for sale, or shipped off site for destruction.”

H. 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.”

I. 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.”

J. 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”

K. Article 4, paragraph 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”

L. 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 2013 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 2013 may delay taking those actions until 1 January 2015.”

M. Article 5, paragraph 4

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

“Articles 2A to 2I”

there shall be substituted:

“Articles 2A to 2J”

N. Article 5, paragraphs 5 and 6

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

“Article 2I”

there shall be substituted:

“Articles 2I and 2J”

O. Article 5, paragraph 8 qua

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

“8 *qua*. Each Party operating under paragraph 1 of this Article shall, in order to meet its basic domestic needs, be entitled to delay its compliance with the control measures set out in paragraphs 1, 2 and 3 of Article 2J for three years, in paragraphs 4 and 5 of Article 2J for six years, and in paragraph 6 of Article 2J for ten years, subject to any adjustments made to the control measures in Article 2J in accordance with Article 2(9).”

P. Article 6

In Article 6 of the Protocol, for the words:

“Articles 2A to 2I”

there shall be substituted:

“Articles 2A to 2J”

Q. 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 2004, 2005, and 2006,”

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 in accordance with Article 3(d) of the Protocol, as well as the amount of Annex F, Group II substances captured and destroyed by technologies to be approved by the Parties.”

R. Article 10, paragraph 1

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

“Articles 2A to 2E and Article 2I”

There shall be substituted:

“Articles 2A to 2E, Article 2I, and paragraphs 1 to 6 of 2J”

S. Annex C and Annex F

Annex C, Group I is amended to add the 100-year Global Warming Potential for the following substances:

Substance	100 year Global Warming Potential
HCFC-21	151
HCFC-22	1,810
HCFC-123	77
HCFC-124	609
HCFC-141b	725
HCFC-142b	2,310
HCFC-225ca	122
HCFC-225cb	595

A new Annex F shall be added to the Protocol, following Annex E. It shall read:

Annex F: Controlled Substances

Group	Substance	100 year Global Warming Potential
<i>Group I</i>		
	HFC-32	675
	HFC-41	92
	HFC-125	3,500
	HFC-134	1,100
	HFC-134a	1,430
	HFC-143	353
	HFC-143a	4,470
	HFC-152	53
	HFC-152a	124
	HFC-161	12
	HFC-227ea	3,220
	HFC-236cb	1,340
	HFC-236ea	1,370
	HFC-236fa	9,810
	HFC-245ca	693
	HFC-245fa	1,030
	HFC-365mfc	794
	HFC-43-10mee	1,640
	HFC-1234yf (HFO-1234yf)	4
	HFC-1234ze (HFO-1234ze)	6
 <i>Group II</i>		
	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 hydrofluorocarbons from the scope of the commitments contained in Articles 4 and 12 of the United Nations Framework Convention on Climate Change and in Articles 2, 5, 7 and 10 of its Kyoto Protocol that apply to “greenhouse gases not controlled by the Montreal Protocol.” Each party to this Amendment shall continue to apply the provisions of the United Nations Framework Convention on Climate Change and its Kyoto Protocol identified above to HFCs as long as those provisions, respectively, remain in force with respect to such party.

Article IV: Entry into force

1. Except as noted in paragraph 2, below, this Amendment shall enter into force on 1 January 2011, 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 in Sections H and I of Article I of this Amendment shall enter into force on 1 January 2011, 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.
