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**Open-ended Working Group of the Parties to the
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Item 11 of the provisional agenda*
Proposed amendments to the Montreal Protocol**

Proposed amendment to the Montreal Protocol

Note by the Secretariat

Pursuant to paragraph 2 of Article 9 of the Vienna Convention for the Protection of the Ozone Layer, the Secretariat is circulating in the annex to the present note a proposal submitted by the Federated States of Micronesia to amend the Montreal Protocol on Substances that Deplete the Ozone Layer to control hydrofluorocarbons (HFCs). The proposal is being circulated as received and has not been formally edited by the Secretariat.

* UNEP/OzL.Pro.WG.1/32/1

Annex

**Proposed Amendment to Control HFCs under the
Montreal Protocol on Substances That Deplete the Ozone Layer**

The following is proposed text for an amendment to the Montreal Protocol to control HFCs:

Section 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 1, paragraphs 9 – 10

The following paragraphs shall be inserted after paragraph 8 of Article 1 of the Protocol:

9. “UNFCCC” means the United Nations Framework Convention on Climate Change, adopted on 9 May 1992.

10. “Kyoto Protocol” means the Kyoto Protocol to the UNFCCC, adopted 11 December 1997.

Article 2, paragraph 5

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

“Article 2H”

There shall be substituted:

“Articles 2H and 2J”

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.”

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”

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; ”

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 [2015], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [eighty-five] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F, Group I 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, Group I 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, Group I plus Annex C, Group I substances.

2. Each Party shall ensure that for the twelve-month period commencing on 1 January [2018], 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, Group I 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, [seventy] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F, Group I 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, Group I plus Annex C, Group I substances.

3. Each Party shall ensure that for the twelve-month period commencing on 1 January [2021], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [fifty-five] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F, Group I 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-five] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F, Group I 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, Group I plus Annex C, Group I substances.

4. Each Party shall ensure that for the twelve-month period commencing on 1 January [2024], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [forty-five] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F, Group I 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, [forty-five] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F, Group I 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, Group I plus Annex C, Group I substances.

5. Each Party shall ensure that for the twelve-month period commencing on 1 January [2027], 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, Group I 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, Group I 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, Group I plus Annex C, Group I substances.

6. Each Party shall ensure that for the twelve-month period commencing on 1 January [2030], 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, Group I 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, Group I 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, Group I plus Annex C, Group I substances.

7. Each Party shall ensure that for the twelve-month period commencing on 1 January [2032], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [ten] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F, Group I 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, [ten] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F, Group I 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, Group I plus Annex C, Group I substances.

8. Each party shall ensure that for the 12-month period commencing on January 1, 2015, 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.

9. 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.

10. The provisions of paragraph 8 of this Article shall not apply to the quantity of Annex F, Group II substances generated as a byproduct of the manufacture of Annex C, Group I substances where the destruction of such substances has been approved as a Clean Development Mechanism project under the Kyoto Protocol as of January 1, 2010 and that quantity is, in fact, destroyed pursuant to that agreement.

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 C or 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.”

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, paragraph 3 qua.

The following paragraph shall be inserted after paragraph 3 *ter.* of Article 4 of the Protocol:

“3 *qua.* Within [three] years of the date of the entry into force of this paragraph, the Parties shall, following the procedures in Article 10 of the Convention, elaborate in an annex a list of products containing controlled substances in Annex F. Parties that have not objected to the annex in accordance with those procedures shall ban, within one year of the annex having become effective, the import of those products from any State not party to this Protocol.”

Article 4, paragraph 4 qua.

The following paragraph shall be inserted after paragraph 4 *ter.* of Article 4 of the Protocol:

“4 *qua.* Within [three] years of the date of the entry into force of this paragraph, the Parties shall determine the feasibility of banning or restricting, from States not party to this Protocol, the import of products produced with, but not containing, controlled substances in Annex F. If determined feasible, the Parties shall, following the procedures in Article 10 of the Convention, elaborate in an annex a list of such products. Parties that have not objected to the annex in accordance with those procedures shall ban or restrict, within one year of the annex having become effective, the import of those products from 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, paragraph 8

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

“paragraphs 1 to 4 *ter.*”

There shall be substituted:

“paragraphs 1 to 4 *qua.*”

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 2014 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 2014 may delay taking those actions until 1 January 2016.”

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”

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”

Article 5 paragraph 8 qua.

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

“With regard to the controlled substances contained in Annex F, Group I, each Party operating under paragraph 1 of this Article shall, in order to meet its basic domestic needs, be entitled to delay for six years its compliance with the control measures set out in paragraphs 1 to 7 of Article 2J and, as the basis for its compliance with these control measures, it shall use the average of its annual calculated level of consumption and production, respectively, [of Annex C, Group I substances for the period 2007 to 2009 inclusive].”

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.

In paragraph 2 of Article 7, the comma following the words “Annex E, for the year 1991” shall be removed and a semicolon shall be inserted.

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 to 2009,”

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, the amount of Annex F, Group II substances captured and destroyed by technologies to be approved by the Parties, and the amount of Annex F, Group II substances subject to paragraph 10 of Article 2J.”

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 Article 2J”

At the end of Article 10, paragraph 1 of the Protocol, following the sentence ending:

“incremental costs shall be decided by the meeting of the Parties.”

There shall be added the sentence:

“Where a Party operating under paragraph 1 of Article 5 chooses to avail itself of funding from any other financial mechanism to meet 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

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

<i>HFC-236fa</i>	9,810
<i>HFC-245ca</i>	693
<i>HFC-245fa</i>	1,030
<i>HFC-365mfc</i>	794
<i>HFC-43-10mee</i>	1,640
<i>HFC-1234yf (HFO-1234yf)</i>	4
<i>HFC-1234ze (HFO-1234ze)</i>	6

<i>Group II</i>	
HFC-23	14,800

Section 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.

Section III: Relationship to the UNFCCC 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 UNFCCC 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 UNFCCC and its Kyoto Protocol identified above to hydrofluorocarbons as long as those provisions, respectively, remain in force with respect to such Party.

Section IV: Entry into force

1. Except as noted in paragraph 2, below, this Amendment shall enter into force on 1 January 2014, 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 in Section I of this Amendment shall enter into force on 1 January 2014, 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.

Summary of the FSM's 2012 Proposed Amendment To Phase Down HFCs Under the Montreal Protocol

The FSM's 2012 Proposed Amendment will strengthen climate protection under the Montreal Protocol by phasing down the production and consumption of HFCs, a group of super-greenhouse gases. Phasing down HFCs is essential to fulfilling obligations under the Vienna Convention to limit the adverse environmental effects, including effects on the climate system, of actions taken to protect the ozone layer. The resulting benefit will be up to 100 billion tonnes of CO₂-eq. mitigation by 2050 under a treaty that has successfully phased out nearly 100 other chemicals.

- **The Baseline for Article 2 Parties in Article 2J:** The baseline for Article 2 Parties is established using HCFC *plus* HFC production and consumption from 2004-2006.
- **The Phase-Down Schedule for Article 2 Parties in Paragraphs 1 – 7 of Article 2J:** The proposed phase-down schedule in Article 2 Parties reduces HFC consumption from the baseline by 15% every 3 years beginning in 2015 until it reaches 15% of the baseline in 2030 and ultimately 10% of the baseline in 2032.
- **HFC-23 Control Measures in Paragraphs 8 – 10 of Article 2J:** The Proposal establishes control measures in paragraphs 8 and 9 of Article 2J that require all Parties to meet chemical efficiency standards in their production of HCFC-22 and destroy all remaining HFC-23 by-product. Paragraph 10, however, exempts existing HFC-23 Clean Development Mechanism (CDM) projects from the provisions of paragraphs 8 and 9.
- **Control Measures in Article 5 Parties in Paragraph 8 *qua* of Article 5:** Article 5 paragraph 8 *qua* provides Article 5 Parties with a 6-year grace period to comply with the control measures established for Article 2 Parties in paragraphs 1 to 7 of Article 2J. In addition, paragraph 8 *qua* uses different criteria for establishing the baseline in Article 5 Parties.

Under paragraph 8 *qua* of the Proposal, the baseline in Article 5 Parties is established using only HCFC production and consumption data from 2007-2009. This means the baseline is established using existing data and accounts for the recent growth in sectors that will rely on HFCs in the near future.

- **MLF Funding:** The Proposal requires the Multilateral Fund (MLF) make available the agreed incremental costs of compliance with the Article 5 control measures established under the amendment, including the destruction of HFC-23. By operation of paragraph 10 of Article 2J, the Proposal excludes funding for the destruction of HFC-23 where funding is already provided by the CDM.
- **Additional Chemicals in Annex F:** The Proposal includes two substances, often referred to as HFOs, in the list of controlled substances in Annex F as these substances are related to HFCs and are often used as replacements for HCFCs and HFCs.
- **Explicit Recognition of the UNFCCC:** The Proposal makes clear that its adoption requires no changes nor amendments to the Kyoto Protocol of the UNFCCC. With adoption of this proposed amendment, emissions of HFCs would remain in the Kyoto Protocol “basket” of gases and neither Parties’ commitments under the Kyoto Protocol nor their opportunities to meet those commitments would be altered.