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Deplete the Ozone Layer
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Item 13 of the provisional agenda*

Proposed amendments to the Montreal Protocol

Proposed amendment to the Montreal Protocol submitted by the Federated States of Micronesia

Note by the Secretariat

Pursuant to article 9, paragraph 2, 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, with a view to controlling hydrofluorocarbons (HFCs). The proposal is being circulated as received and has not been formally edited by the Secretariat.

* UNEP/OzL.Pro.WG.1/33/1.

Annex

Highlights of the Proposed Amendment to Phase Down HFCs under the Montreal Protocol

Controlling the Rapid Growth of HFCs

Production, consumption and emissions of hydrofluorocarbons (HFCs), greenhouse gases hundreds to thousands of times more potent in their warming impact than carbon dioxide, are expected to grow rapidly over the next several decades, potentially increasing more than tenfold between now and 2050.

This proposed amendment to the Montreal Protocol would constrain the growth of HFCs through a gradual phase down of their production and consumption.

This phase down would be similar to the previous phase downs under the Montreal Protocol of CFCs and HCFCs, for which HFCs are now being used as replacements.

This amendment could prevent over 100 Gt of CO₂-equivalent emissions in the next several decades and could constrain global average temperature increase by up to 0.5C by 2100.

Consistency with Related Conventions and Multilateral Agreements

Since the growth in HFCs is in part due to the Montreal Protocol's phase down of HCFCs, by limiting the growth of HFCs, this amendment would therefore fulfill the Parties' obligation under Article 2 of the Vienna Convention for the Protection for the Ozone Layer to prevent adverse effects on the climate system from measures put in place to protect the ozone layer.

This amendment is not only consistent with the principles and objectives of the Vienna Convention and the Montreal Protocol, but is also consistent with the principles and objectives of the United Nations Framework Convention on Climate Change, including its ultimate objective and its principle of common but differentiated responsibilities and respective capabilities:

- By reducing the amount of HFCs produced and consumed, this amendment would complement the ultimate objective of the UNFCCC, as stated in its Article 2, to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.
- Action taken under this amendment would be led by developed country parties, and then followed later in time by similar actions taken by developing country parties, consistent with Article 3.1 of the UNFCCC.
- Developed country parties would provide, through financial contributions to the Multilateral Fund, the means of implementation for the "agreed full incremental costs" of actions to be undertaken by developing country parties, consistent with Article 4.3 of the UNFCCC.
- By reducing the amount of HFCs produced and consumed, this amendment would further complement the Kyoto Protocol, which envisions reductions of emissions of HFCs. However, this amendment, as per its Section III, would have no effect on the status of HFCs under the Kyoto Protocol, nor would it affect the opportunities of Parties to the Kyoto Protocol to meet their commitments under that treaty by reducing HFC emissions.

The schedule of the phase down envisioned in this amendment is gradual, taking place over several decades, and would therefore be consistent with the support expressed by world leaders in *The Future We Want*, the outcome document of the Rio + 20 Summit in 2012, for a “gradual phase down in the consumption and production of hydrofluorocarbons.”

Details of the Proposed Phase Down and Schedule

The phase down schedule proposed in this amendment would begin for developed country Parties in 2016, to be followed later in time by developing country parties, on a schedule to be determined through negotiation by the Parties.

The proposed baseline for developed country Parties is the average of the sum of their calculated levels of HCFCs plus HFCs (excluding HFC-23) in the years 2004, 2005, and 2006, with the first step of the phase down decreasing to eighty-five percent of this baseline in 2016.

The proposed baseline for developing country Parties shall be determined through negotiations by the Parties.

Developing country Parties wishing to begin implementation of the HFC phase down in advance of the schedule to be negotiated by the Parties would still be eligible for funding of their implementation under Article 10 of the Protocol.

The phase down of HFCs is gradual and shall continue until such time as Parties have reduced production and consumption to no more than five percent of the agreed baselines.

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 [2016], 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, [eighty-five] per cent of 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 [2019], 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 [2022], 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 [2025], 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 [2028], 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 [2031], 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 [2034], 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, 2016, 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 2016 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 2016 may delay taking those actions until 1 January 2018.”

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 [X] 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 [20XX to 20XX] 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 [20XX to 20XX],”

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 sentences:

“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. Where a Party operating under paragraph 1 of Article 5 chooses to comply with the provisions of Article 2J in advance of the schedule agreed by the Parties, that Party shall be able to avail itself of the funding described in Article 10 of the Protocol for such early compliance.”

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
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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
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<i>Group I</i>		
	<i>HFC-32</i>	675
	<i>HFC-41</i>	92
	<i>HFC-125</i>	3,500
	<i>HFC-134</i>	1,100
	<i>HFC-134a</i>	1,430
	<i>HFC-143</i>	353
	<i>HFC-143a</i>	4,470
	<i>HFC-152</i>	53
	<i>HFC-152a</i>	124
	<i>HFC-161</i>	12
	<i>HFC-227ea</i>	3,220
	<i>HFC-236cb</i>	1,340
	<i>HFC-236ea</i>	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 shall have no effect on the status of hydrofluorocarbons under the Kyoto Protocol, and will not except 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 2016, 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 2016, 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.