




MINISTRY OF FOREIGN AFFAIRS

PARLIAMENTARY MEMORANDUM ON THE RATIFICATION ON

THE KIGALI AMENDMENT TO THE MONTREAL PROTOCOL

ON SUBSTANCES THAT DEplete THE OZONE LAYER.

 THE NATIONAL ASSEMBLY P. 2		
DATE:	29 NOV 2022	DAY: Tuesday
TABLED BY:	LOM	
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PARLIAMENTARY MEMORANDUM ON KENYA'S RATIFICATION OF THE KIGALI AMENDMENT TO THE MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER

1. INTRODUCTION

- 1.1 The purpose of this Parliamentary Memorandum is to appraise the National Assembly and seek approval for Kenya's ratification of the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer.
- 1.2 The ratification was approved by the Cabinet in its meeting held on the 12th May, 2022.

2. BACKGROUND

- 2.1 The Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer was agreed upon at the 28th Meeting of Parties on the 15th of October 2016 in Kigali, Rwanda. While Kenya has ratified the Montreal Protocol, it is yet to ratify the Kigali Amendment. There are currently one hundred and thirty (130) state parties that have ratified the amended Protocol.
- 2.2 The Montreal Protocol on Substances That Deplete the Ozone Layer is a global agreement that was finalized in 1987 with the objective of protecting the ozone layer as it protects the earth from harmful ultraviolet rays that come from the sun. The treaty set out to protect the global environment by phasing out the production and consumption

of ozone-depleting substances (ODSs).¹ The protocol is supplementary to the Vienna Convention for the Protection of the Ozone Layer and controls the use of manufactured chemicals that destroy the ozone layer and essentially restricts the international trade of ODSs.²

- 2.3 The Montreal Protocol is signed by 197 countries and is the first treaty to achieve universal ratification. It is also considered be one of most successful environmental global action plans.³
- 2.4 The purpose of the Meeting of Parties was to engage members states of the Montreal Protocol on a new action plan where they would phase down production and consumption of hydrofluorocarbons (HFCs) worldwide using the approaches that are in the Montreal Protocol which under Article 5, distinguishes levels of implementation and progress required from Article 5 and non-Article 5 countries. Under the Montreal Protocol, Article 5 provides that developing countries are entitled to a ten-year delay in compliance with its control measures and the same is to be transplanted in the implementation of the Kigali Amendment.⁴
- 2.5 The Montreal Protocol addresses and limits the production and consumption of various ozone depleting substances (ODSs) such as chlorofluorocarbons (CFCs)⁵. Due to this, the common practice become alternating them with HFCs which are greenhouse gases commonly used in sectors such as refrigeration, air conditioning, aerosols and fire suppression. However, new research has found that HFCs can have

¹ The Kigali Amendment to the Montreal Protocol: Another Global Commitment to stop Climate Change, UN Environmental Programme, Available at < <https://www.unep.org/news-and-stories/story/kigali-amendment-montreal-protocol>>

² Trade Beat, 'The Montreal Protocol on Substances that Deplete the Ozone Layer', Volume 8, Issue 3, 1, June 2016.

³ International Actions- The Montreal Protocol on Substances that Deplete the Ozone Layer, United States Environmental Protection Agency, Available at< <https://www.epa.gov/ozone-layer-protection/international-actions-montreal-protocol-substances-deplete-ozone-layer> >

⁴ Article 5, *Montreal Protocol on Substances that Deplete the Ozone Layer*, 2000.

⁵ Article 2A, *Montreal Protocol on Substances that Deplete the Ozone Layer*, 2000.

high global warming potentials (GWPs) and can be more potent than carbon dioxide.⁶

2.6 The Kigali Amendment is the most recent amendment of the Montreal Protocol and sets out to significantly limit the future production and consumption of HFCs. Without the amendments made therein, the emissions of HFCs are projected to peak around 2035 leading to surface temperatures peaking as high as 0.3-0.5 degrees Celsius by 2100. It is estimated that the provisions of the Amendment will reduce future global warming that may occur due to the HFC emissions from a baseline of 0.3-0.5 degrees Celsius to less than 0.1 degrees Celsius by the end of the century.⁷

3. OBJECT AND SUBJECT MATTER

3.1 The Kigali Amendment contains the manner in which countries are to carry out the process of phasing down on the production and usage of HFCs. The amendment also includes target baselines and emission levels that States in agreement with it are to achieve. There is also an objective of replacing HFCs with more planet friendly alternatives, provisions to restrict countries that have ratified the protocol or its amendments from trading in controlled substances with countries that are yet to ratify it. Lastly, there is an agreement for non-Article 5 states to aid Article 5 states with their transition to alternative safe products.

3.2 The new amendment classifies the HFCs that are included in the phase down exercise in a new Annex F and the baselines, timelines and percentages that they are to be phased out in is to be done in accordance with Article 2(J) and Article 5(8) of the amended

⁶ Hydrofluorocarbons (HFCs), Climate and Clean Air Coalition, Available at <<https://www.ccacoalition.org/en/slcp/hydrofluorocarbons-hfcs> >

⁷ Hydrofluorocarbons (HFCs), Climate and Clean Air Coalition, Available at <<https://www.ccacoalition.org/en/slcp/hydrofluorocarbons-hfcs> >

protocol.⁸ Furthermore, Article 5(8) qua provides for the timeline considerations that are to be granted onto developing countries.⁹ In addition, the amendment creates four different groups of countries each with different baseline volumes and reduction schedules.¹⁰

3.3 The Amendment was to enter into force on 1st of January 2019, provided that it is ratified by at least 20 states that are parties of the Montreal Protocol.¹¹ As of October 2021, 130 states including the European Union have ratified the Kigali Amendment.

3.4 The implementation of the new targets set out in the amendment will be conducted in three phases which take into account the different socio-economic, scientific and technological capabilities of the member states. Under the Montreal Protocol, Kenya is classified as a developing country and is therefore entitled to start the process of phasing down HFCs by 2028.

4. OBLIGATIONS IMPOSED BY THE KIGALI AMENDMENT.

4.1 The obligations imposed by the Kigali Amendment involve phasing down the consumption, production and importation of HFCs worldwide to protect the ozone layer from further depletion. These are found under Article 2J of the Amendment which prescribes that State Parties are to:

- i. Reduce the consumption of Annex F Group I HFCs and ensure that the level of consumption does not exceed the percentages

⁸ Article 1, Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer.

⁹ Article 5(8) qua, Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer.

¹⁰ UNEP, OzoneAction Fact Sheet, The Kigali Amendment to the Montreal Protocol: HFC Phase-down.

¹¹ Article IV, Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer.

that are respective to the range of years that are specified in subparagraphs (a) to (e).¹²

- ii. State parties that are involved in producing the controlled substances under Annex F do not exceed the percentages that are outlined in paragraph, 2(J)(3)(a) to (e).¹³
- iii. Destroy Annex F Group II HFCs in accordance with the percentages timelines and processes set out under Article 2J and Article 5.¹⁴
- iv. Gradually reduce the use of HFCs by 80-85% by late 2040s.¹⁵
- v. Restrict the trading of controlled substances under Annex F with states that are not parties to the protocol.¹⁶
- vi. Establish and implement a new system that oversees the importation, exportation and licensing of new, used and reclaimed controlled substances under Article 4B 2bis.¹⁷
- vii. Monitor and report the production and consumption of HFCs and HFC-23 emissions within their states under new Articles 7(2) (3) and 3(ter).¹⁸
- viii. Ensure that baselines are be calculated for both HFC and hydrofluorocarbon (HCFC) production and consumption.

4.2 The timeline under which these obligations are to be implemented depends on whether a country is classified as an 'Article 5 Party' (developing country) or a 'non-Article 5' party (developed countries).

¹² Article 2J(1), Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer.

¹³ Article 2J(3), Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer.

¹⁴ Article 2J(7), Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer.

¹⁵ 'What is the Kigali Amendment?', European Fluorocarbons Technical Committee (EFTC), Available at < <https://www.fluorocarbons.org/environment/climate-change/kigali-amendment/>>

¹⁶ Article 4, *Montreal Protocol on Substances that Deplete the Ozone Layer*, 2000.

¹⁷ Article 4B 2bis, Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer.

¹⁸ Article 7, Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer.

- 4.3 Under Article 5(8) qua, Article 5 parties are entitled to delay their compliance with the measures set out under Article 2J and modify them according to the timelines provided therein.¹⁹

5. PROBLEM STATEMENT

- 5.1 The ozone-layer is a naturally occurring layer of gas in the earth's upper atmosphere and acts as a shield that protects us from harmful ultraviolet radiation. Initially, CFCs were found to be the root cause of damage to the ozone layer, and this prompted governments to create an agreement that would reduce their production and consumption. This led to the creation of the Montreal Protocol which aimed at reducing the prevalence of ozone depleting substances (ODSs) in the atmosphere in order to protect the ozone layer.
- 5.2 However, new research has found that the alternative to the previous mentioned ODSs, HFCs also contribute to the depletion of the ozone layer as they have the potential to be more potent than carbon dioxide in contributing to climate change and global warming.²⁰ HFCs currently represent approximately 1 percent of total greenhouse gases, however, their impact on global warming is estimated to be thousands of times greater than that of carbon dioxide per unit of mass. For example, HFC-134a which is one of the most abundant HFC is capable of being 3,790 times more damaging to the climate than carbon dioxide over a 20-year period. The rate of emission is growing at a rate of ten to fifteen percent per year, which may double every five to ten years.²¹
- 5.3 The discovery highlights a grave threat to African countries which are extremely vulnerable to climate change as the yield in the

¹⁹ Article 5(8)qua, *Montreal Protocol on Substances that Deplete the Ozone Layer, 2000*.

²⁰ Velders J. M, 'The large contribution of projected HFC emissions to future climate forcing', July 7, 2009, Available at <
<https://www.pnas.org/doi/10.1073/pnas.0902817106>>

²¹ Hydrofluorocarbons (HFCs), Climate and Clean Air Coalition, Available at <
<https://www.ccacoalition.org/en/slcps/hydrofluorocarbons-hfcs> >

agriculture sector would decline leading to a risk of undernourishment and massive economic losses.²² Due to this, the Kigali agreement was created to target the decreased used of HFCs and replace them with more planet friendly alternatives. The Kigali Amendment is a viable solution to this problem as it establishes a timeline through which parties to the Protocol will be expected to implement obligations under the Amendment.

6. JUSTIFICATION

Ratification of the Kigali Amendment will:

- i. Enable Kenya to access financial support as Article 10 of the Montreal Protocol establishes a Multilateral Fund to support Article 5 parties. Extra financial support will be available for Article 5 parties that accelerate the phasing down of HFCs;
- ii. Help reduce the rate of ozone layer depletion therefore leading the overall reduction of global warming;
- iii. Encourage Kenya to strengthen and develop strategies for phasing down HFCs;
- iv. Kenya will be able to avoid the trade restrictions that are will be imposed onto states that are not party to the Protocol by 1st of January 2033;
- v. As the amendment encourages the use of other environmentally friendly alternatives to HFCs, implementing it will give Kenya a competitive advantage in the world market;
- vi. Demonstrate Kenya's commitment to the international community's collective action against ozone-layer depletion and global warming;
- vii. Kenya is already a member state of the Montreal Protocol on Substances that Deplete the Ozone Layer and,

²² 'The Kigali Amendment to the Montreal Protocol: Another Global Commitment to stop climate change', UN environment programme, Available at < <https://www.unep.org/news-and-stories/story/kigali-amendment-montreal-protocol-another-global-commitment-stop-climate>>

- viii. The Kigali Amendment is aligned with the objectives of Kenya's Climate Change Act, 2016.

7. EXPECTED OUTCOMES

- 7.1 Following the timelines and baselines provided under Article 2J and Article 5(8) qua the expected outcome is that Parties to the Protocol and Amendment shall gradually reduce the HFC use and consumption by 80-85 percent by the late 2040s.²³
- 7.2 Under Article 5(8) qua, the phase down in the consumption and production of HFCs for Article 5 countries is as follows respectively:
- i. 2024 to 2028: 100 per cent
 - ii. 2029 to 2034: 90 per cent
 - iii. 2035 to 2039: 70 per cent
 - iv. 2040 to 2044: 50 per cent
 - v. 2045 and thereafter: 20 percent
- 7.3 Additionally, Kenya is an Article 5 country under the Montreal Protocol and is therefore entitled to assistance from non-Article 5 countries to aid the fulfillment of the obligations as per the amendment.
- 7.4 Kenya will be able to transplant the objectives of the Kigali Amendment to its existing legal framework that establishes a national mechanism that regulates the emissions of greenhouse gases including HFCs enshrined under the Climate Change Act 2016.²⁴ The amendment will assist Kenya achieve its environmental

²³ UNEP, OzoneAction Fact Sheet, The Kigali Amendment to the Montreal Protocol: HFC Phase-down.

²⁴ Climate Change Act, 2016.

and climate change objectives as highlighted in the National Climate Change Action Plan that is created under Article 13 of the Climate Change Act, 2016.

8. COMMON CONSTITUTIONAL AND LEGISLATIVE IMPLICATIONS

- 8.1 The Kigali Amendment is consistent with Article 69(1)(g) of Constitution of Kenya, 2010 which provides that the State has obligations to eliminate processes and activities that are likely to endanger the environment.²⁵ In addition, the Kigali Amendment promotes Kenya's constitutional values and objectives which are enshrined in its preamble particularly, the provision on the respect and sustenance of the environment for future generations. It does not allude to an amendment of the Constitution.
- 8.2 Ratification of the Kigali Amendment will provide a timeline and framework under which Kenya can implement the obligations set out under it with aid from developed/ non-article 5 parties.
- 8.3 Kenya enacted the Climate Change Act 2016, which is an Act of Parliament with the purpose of providing a regulatory framework that enhances the responses, mechanisms and measures in response to climate change to achieve low carbon climate development. Part of their mandate involves the establishment of Climate Change Council whose main duty under Section 5 is to provide a national mechanism that sets targets for the regulation of greenhouse gas emissions including HFCs under Section 2.²⁶ This is aligned with the chief objectives of the Kigali Amendment therefore increasing the capacity of its implementation.
- 8.4 Due to this the Climate Change Act is sufficient for the implementation of the Kigali Amendment as it establishes:

²⁵ Article 69(1)(g), Constitution of Kenya, 2010.

²⁶ Section 5, Climate Change Act, 2016.

- i. The National Climate Change Council which is the principal climate change coordination mechanism.²⁷
- ii. Climate Change Directorate which is established as the lead agency on national climate change plans and actions.²⁸
- iii. National Climate Change Action plan which identifies all actions required to enable climate change response and reviews levels and trends of greenhouse gas emissions.²⁹
- iv. The National Environmental Management Authority which shall on behalf of the council regulate, enforce and monitor compliance levels of greenhouse gas emissions as set out by the National Climate Change Council.³⁰
- v. The powers and duties of the Cabinet Secretary which involves the responsibility of creating a biannual report to Parliament on the status of implementation of international obligations to respond to climate change and the attainment of low carbon climate resilient development.³¹

The above mechanisms and authorities can be exercised regarding the Implementation of the Kigali Amendment.

9. FINANCIAL IMPLICATIONS

- 9.1 Financial requirements for the implementation for the Convention which include administrative costs will be provided for under normal budgetary estimates of the relevant institution.
- 9.2 The implementation of the Kigali Amendment is based on a phase-down schedule supported through the Multilateral Fund for the implementation of the Montreal Protocol.

²⁷ Section 5, Climate Change Act, 2016.

²⁸ Section 9, Climate Change Act, 2016.

²⁹ Section 13, Climate Change Act, 2016.

³⁰ Section 17, Climate Change Act, 2016.

³¹ Section 8, Climate Change Act, 2016.

9.3 The financial benefits would include, and not limited to; capacity building and training in handling HFC alternatives, licensing and quota systems, monitoring, reporting, and project preparation activities.

9.4 The Government may need to allocate additional funds to the relevant MDAs to ensure Kenya has inspectors and regulators that are equipped to ensure that the respective timelines and baselines under the Amendment are adhered to as well as monitor the consumption and production of HFCs.

10. MINISTERIAL RESPONSIBILITY

10.1 Responsibility for the implementation of the Kigali Amendment to the Montreal Protocol will fall under the Ministry of Environment and Forestry.

10.2 The Office of the Attorney General and Department of Justice and the Ministry of Foreign Affairs will coordinate the reporting process on State obligations pursuant to the Treaty Making and Ratification Act No 45 of 2012.

11. VIEWS OF THE PUBLIC

Public participation has not been conducted on the Agreement.

12. RESERVATIONS

The Kigali Amendment does not expressly provide for reservations.

13. RECOMMENDATION TO THE NATIONAL ASSEMBLY

In consideration of the aforementioned facts, the National Assembly is invited to:


1. Note the contents of the Amendment;
2. Consider and approve Kenya's ratification of the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer.
3. Direct the Cabinet Secretary of Foreign Affairs to prepare and deposit the instruments of ratification to the relevant depository.

SIGNED.......... DATED.......... JULY, 2022

**AMB. RAYCHELLE OMAMO, SC, EGH
CABINET SECRETARY
MINISTRY OF FOREIGN AFFAIRS**

Decision XXVIII/1: 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 set out in annex I to the report of the Twenty-Eighth Meeting of the Parties;

 THE NATIONAL ASSEMBLY P. D.	
DATE:	28 NOV 2022
	DBY.
TABLED BY:	
CLERK AT THE TABLE:	

Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer

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 (a) (i) of paragraph 9 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 as subparagraph (a) (ii) after subparagraph (a) (i) of paragraph 9 of Article 2 of the Protocol:

“Adjustments to the global warming potentials specified in Group I of Annex A, Annex C and Annex 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 CO₂ equivalents, does not exceed the percentage, set out for the respective range of years 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 calculated level of

consumption of Annex C, Group I, controlled substances as set out in paragraph 1 of Article 2F, expressed in CO₂ equivalents:

- (a) 2019 to 2023: 90 per cent
- (b) 2024 to 2028: 60 per cent
- (c) 2029 to 2033: 30 per cent
- (d) 2034 to 2035: 20 per cent
- (e) 2036 and thereafter: 15 per cent

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 CO₂ equivalents, does not exceed the percentage, set out for the respective range of years 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 calculated level of consumption of Annex C, Group I, controlled substances as set out in paragraph 1 of Article 2F, expressed in CO₂ equivalents:

- (a) 2020 to 2024: 95 per cent
- (b) 2025 to 2028: 65 per cent
- (c) 2029 to 2033: 30 per cent
- (d) 2034 to 2035: 20 per cent
- (e) 2036 and thereafter: 15 per cent

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 CO₂ equivalents, does not exceed the percentage, set out for the respective range of years 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 calculated level of production of Annex C, Group I, controlled substances as set out in paragraph 2 of Article 2F, expressed in CO₂ equivalents:

- (a) 2019 to 2023: 90 per cent
- (b) 2024 to 2028: 60 per cent
- (c) 2029 to 2033: 30 per cent
- (d) 2034 to 2035: 20 per cent
- (e) 2036 and thereafter: 15 per cent

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 CO₂ equivalents, does not exceed the percentage, set out for the respective range of years 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 calculated level of production of Annex C, Group I, controlled substances as set out in paragraph 2 of Article 2F, expressed in CO₂ equivalents:

- (a) 2020 to 2024: 95 per cent
- (b) 2025 to 2028: 65 per cent
- (c) 2029 to 2033: 30 per cent
- (d) 2034 to 2035: 20 per cent
- (e) 2036 and thereafter: 15 per cent

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.
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 emissions of Annex F, Group II, substances generated in each production facility that manufactures Annex C, Group I, or Annex F substances are destroyed to the extent practicable using technology approved by the Parties in the same twelve-month period.
7. Each Party shall ensure that any destruction of Annex F, Group II, substances generated by facilities that produce Annex C, Group I, or Annex F substances shall occur only by technologies approved by the Parties.

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 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.

2. When calculating levels, expressed in CO₂ equivalents, of production, consumption, imports, exports and emissions of Annex F and Annex C, Group I, substances for the purposes of Article 2J, paragraph 5 of Article 2 and paragraph 1 (d) of Article 3, each Party shall use the global warming potentials of those substances specified in Group I of Annex A, Annex C and Annex F.”

Article 4, paragraph 1 sept

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

“1 *sept*. Upon 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*. Upon 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:

“8 *qua*

(a) Each Party operating under paragraph 1 of this Article, 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) to (e) of paragraph 1 of Article 2J and subparagraphs (a) to (e) of paragraph 3 of Article 2J and modify those measures as follows:

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

(b) Notwithstanding subparagraph (a) above, the Parties may decide that a Party operating under paragraph 1 of this Article, 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) to (e) of paragraph 1 of Article 2J and subparagraphs (a) to (e) of paragraph 3 of Article 2J and modify those measures as follows:

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

(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 subparagraph (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 subparagraph (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 production of Annex C, Group I, controlled substances as set out in paragraph 8 *ter* of this Article.

(g) Subparagraphs (a) to (f) of this paragraph 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 the years 2020 to 2022, but those Parties operating under paragraph 1 of Article 5 to which subparagraphs (d) and (f) of paragraph 8 *qua* of Article 5 applies shall provide such data for the years 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 on its annual emissions of Annex F, Group II, controlled substances per facility in accordance with paragraph 1 (d) of Article 3 of the Protocol.”

Article 7, paragraph 4

In paragraph 4 of Article 7, after the words:

“statistical data on” and “provides data on”

there shall be added:

“production,”

Article 10, paragraph 1

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 paragraph 1 of Article 10 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 A

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

Group	Substance	Ozone-Depleting Potential*	100-Year Global Warming Potential
<i>Group I</i>			
CFCl ₃	(CFC-11)	1.0	4,750
CF ₂ Cl ₂	(CFC-12)	1.0	10,900
C ₂ F ₃ Cl ₃	(CFC-113)	0.8	6,130
C ₂ F ₄ Cl ₂	(CFC-114)	1.0	10,000
C ₂ F ₅ Cl	(CFC-115)	0.6	7,370

Annex C and Annex F

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

Group	Substance	Number of isomers	Ozone-Depleting Potential*	100-Year Global Warming Potential***
<i>Group I</i>				
CHFCl ₂	(HCFC-21)**	1	0.04	151
CHF ₂ Cl	(HCFC-22)**	1	0.055	1810
CH ₂ FCl	(HCFC-31)	1	0.02	
C ₂ HFCl ₄	(HCFC-121)	2	0.01–0.04	
C ₂ HF ₂ Cl ₃	(HCFC-122)	3	0.02–0.08	
C ₂ HF ₃ Cl ₂	(HCFC-123)	3	0.02–0.06	77
CHCl ₂ CF ₃	(HCFC-123)**	–	0.02	
C ₂ HF ₄ Cl	(HCFC-124)	2	0.02–0.04	609
CHFClCF ₃	(HCFC-124)**	–	0.022	
C ₂ H ₂ FCl ₃	(HCFC-131)	3	0.007–0.05	
C ₂ H ₂ F ₂ Cl ₂	(HCFC-132)	4	0.008–0.05	
C ₂ H ₂ F ₃ Cl	(HCFC-133)	3	0.02–0.06	
C ₂ H ₃ FCl ₂	(HCFC-141)	3	0.005–0.07	
CH ₃ CFCl ₂	(HCFC-141b)**	–	0.11	725
C ₂ H ₃ F ₂ Cl	(HCFC-142)	3	0.008–0.07	
CH ₃ CF ₂ Cl	(HCFC-142b)**	–	0.065	2310
C ₂ H ₄ FCl	(HCFC-151)	2	0.003–0.005	

C ₃ HFCl ₆	(HCFC-221)	5	0.015-0.07	
C ₃ HF ₂ Cl ₅	(HCFC-222)	9	0.01-0.09	
C ₃ HF ₃ Cl ₄	(HCFC-223)	12	0.01-0.08	
C ₃ HF ₄ Cl ₃	(HCFC-224)	12	0.01-0.09	
C ₃ HF ₅ Cl ₂	(HCFC-225)	9	0.02-0.07	
CF ₃ CF ₂ CHCl ₂	(HCFC-225ca)**	-	0.025	122
CF ₂ ClCF ₂ CHClF	(HCFC-225cb)**	-	0.033	595
C ₃ HF ₆ Cl	(HCFC-226)	5	0.02-0.10	
C ₃ H ₂ FCl ₅	(HCFC-231)	9	0.05-0.09	
C ₃ H ₂ F ₂ Cl ₄	(HCFC-232)	16	0.008-0.10	
C ₃ H ₂ F ₃ Cl ₃	(HCFC-233)	18	0.007-0.23	
C ₃ H ₂ F ₄ Cl ₂	(HCFC-234)	16	0.01-0.28	
C ₃ H ₂ F ₅ Cl	(HCFC-235)	9	0.03-0.52	
C ₃ H ₃ FCl ₄	(HCFC-241)	12	0.004-0.09	
C ₃ H ₃ F ₂ Cl ₃	(HCFC-242)	18	0.005-0.13	
C ₃ H ₃ F ₃ Cl ₂	(HCFC-243)	18	0.007-0.12	
C ₃ H ₃ F ₄ Cl	(HCFC-244)	12	0.009-0.14	
C ₃ H ₄ FCl ₃	(HCFC-251)	12	0.001-0.01	
C ₃ H ₄ F ₂ Cl ₂	(HCFC-252)	16	0.005-0.04	
C ₃ H ₄ F ₃ Cl	(HCFC-253)	12	0.003-0.03	
C ₃ H ₅ FCl ₂	(HCFC-261)	9	0.002-0.02	
C ₃ H ₅ F ₂ Cl	(HCFC-262)	9	0.002-0.02	
C ₃ H ₆ FCl	(HCFC-271)	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 until a GWP value is included by means of the procedure foreseen in paragraph 9 (a) (ii) of Article 2.

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

“Annex F: Controlled substances

Group	Substance	100-Year Global Warming Potential
<i>Group I</i>		
CHF ₂ CHF ₂	HFC-134	1,100
CH ₂ FCF ₃	HFC-134a	1,430
CH ₂ FCHF ₂	HFC-143	353
CHF ₂ CH ₂ CF ₃	HFC-245fa	1,030
CF ₃ CH ₂ CF ₂ CH ₃	HFC-365mfc	794
CF ₃ CHF ₂ CF ₃	HFC-227ea	3,220
CH ₂ FCF ₂ CF ₃	HFC-236cb	1,340
CHF ₂ CHF ₂ CF ₃	HFC-236ea	1,370
CF ₃ CH ₂ CF ₃	HFC-236fa	9,810
CH ₂ FCF ₂ CHF ₂	HFC-245ca	693
CF ₃ CHFCH ₂ CF ₂ CF ₃	HFC-43-10mee	1,640
CH ₂ F ₂	HFC-32	675
CHF ₂ CF ₃	HFC-125	3,500
CH ₃ CF ₃	HFC-143a	4,470
CH ₃ F	HFC-41	92

CH ₂ FCH ₂ F	HFC-152	53
CH ₃ CHF ₂	HFC-152a	124
<i>Group II</i>		
CHF ₃	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 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 2033, 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.
