

# A CLIMATE BRIEFING

THE MONTREAL PROTOCOL MUST REGULATE HFCS TO PREVENT  
EXACERBATION OF GLOBAL CLIMATE CHANGE  
WHILE RESTORING THE OZONE LAYER



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## EXECUTIVE SUMMARY

The Montreal Protocol on Substances that Deplete the Ozone Layer (“Montreal Protocol”) has forced the phase-out of the production and consumption of several classes of ozone depleting substances (“ODSs”), including chlorofluorocarbons (“CFCs”) and hydrochlorofluorocarbons (“HCFCs”), which are now being replaced with hydrofluorocarbons (“HFCs”). Although HFCs are not ODSs, they are extremely powerful greenhouse gases (“GHGs”) and are exacerbating the global climate crisis. Most HFCs have a global warming potential (“GWP”) hundreds to thousands of times greater than carbon dioxide (“CO<sub>2</sub>”). The Montreal Protocol must be amended in order to both prevent the increased use of high-GWP HFCs as ODS substitutes and to phase-out HCFCs in the most environmentally friendly manner possible. The Montreal Protocol must take account of the climate impacts of HFCs by encouraging the use of other energy-efficient ODS substitutes taking into account direct climate impact of chemical emissions and the indirect climate impact of fuel use. These goals can be most efficiently accomplished if the Montreal Protocol works in collaboration with the United Nations Framework Convention on Climate Change (“UNFCCC”) to bring about the phase-out of HFCs with high GWP. This is particularly true where there are low-GWP HFCs and natural refrigerants that are technically and economically feasible alternatives to replace high-GWP HFCs.

The history of the Montreal Protocol is one of a dynamic and evolving treaty that responds quickly to changes in ozone and climate science, technology, and the needs of industries and countries dependent on ODSs and their substitutes. Following in this tradition, and consistent with the purpose and spirit of the Montreal Protocol to protect the global envi-

ronment, the treaty should be amended to include high-GWP HFCs among the categories of regulated chemicals. The Montreal Protocol and its Parties have repeatedly recognized the need to address the full environmental implications of their Actions.<sup>1</sup> Regulation of high-GWP HFCs, a class of chemicals that owes its existence to the phase-out of ODSs under the Montreal Protocol, is the next step in fulfilling this mandate.

### ACTIONS TO BE TAKEN BY THE PARTIES TO ADDRESS HFCs

In order to address high-GWP HFCs under the Montreal Protocol, the Parties need to take the following actions:

- Issue a Declaration which acknowledges that environmentally acceptable substitutes are available for most, if not all, uses of high-GWP HFCs, and which commits the Parties to not using high-GWP HFCs if other more environmentally suitable alternative substances or technologies are available. Such a declaration confirms that the Parties are not going to restore the ozone layer by exacerbating the global climate crisis and send a clear signal to markets that high GWP HFCs are unacceptable.
- Commission the United Nations Environment Program’s (“UNEP”) Technical and Economic Assessment Panel (“TEAP”) to prepare a report on 1) the availability and timing of alternatives to HFCs with high GWP, including not-in-kind alternatives; 2) the funding needs for key developing countries to phase-out or not to use HFCs with high GWP and 3) the most efficient and prompt regulatory options to phase out [high GWP] HFC’s via coordinated regulation under both the UNFCCC and the Montreal Protocol.
- Amend the Montreal Protocol to expand its mission to combating climate change associated with ODSs and their substitutes.
- Render a Decision to discourage HFC use and emissions and to finance the agreed incremental costs under the Multilateral Fund of avoiding high-GWP HFCs.
- Amend the Montreal Protocol to allow the phase-out of high-GWP HFCs.
- Work in collaboration with the UNFCCC to add high-GWP HFCs to the classes of substances regulated under the Montreal Protocol and establish deadlines for their phase-out using the latest scientific and technological information, similar to the phase-out of ODSs.

The Parties to the Montreal Protocol have the expertise to regulate high-GWP HFCs by controlling and phasing-out their production and consumption. This is compatible with and complementary to the UNFCCC’s regulation of emissions of HFCs. The technical expertise, mechanism for technology transfer, and Multilateral Fund to assist developing countries make the Montreal Protocol uniquely suited to control and phase out high-GWP HFCs.

The climate crisis can be effectively combated if it is disaggregated into smaller, manageable components where the strengths of international, regional, national, and local organizations and entities can be brought to bear. The Montreal Protocol has the unique capacity to regulate and promote the phase-out of high-GWP HFCs. The Protocol must be amended immediately to meet this urgent global challenge.

# DECLARATION ON HYDROFLUOROCARBONS (“HFCs”) AND GLOBAL WARMING

BY [INSERT NAMES OF COUNTRIES]

The above Parties present at the Twenty-First Meeting of the Parties to the Montreal Protocol,

**Aware** of the wide agreement among scientists that global warming threatens present and future generations unless more stringent control measures are adopted;

**Mindful** of the scientific consensus that global warming will delay the recovery of the ozone layer;

**Mindful** that some HFC substitutes that were commercialized primarily to replace ozone depleting substances are powerful greenhouse gases contributing to global warming;

**Aware** also of the extensive and rapid technological development of environmentally superior substitutes for high-GWP HFCs and the urgent need to facilitate the transfer of technologies of such substitutes especially to developing countries;

**Aware** of the presence of low-GWP HFCs and natural refrigerants that are technically and economically feasible alterna-

tives to replace high-GWP HFCs, including HFC-134a (GWP=1400+) currently used in automotive and stationary air conditioning and refrigeration, and as foam blowing agents.

**Agree** to commit themselves, in proportion to their means and resources, to accelerate the development and implementation of environmentally superior substituting chemicals, products and technologies with low or no GWP and with superior energy efficiency;

**Call** upon all bodies of the Montreal Protocol to discourage and prohibit the use of HFCs with high GWP as ODS substitutes where more environmentally friendly alternatives or technologies are available;

**Urge** all Parties to the Montreal Protocol to consider all ODS replacement technologies, taking into account life-cycle climate analysis (accounting for total global-warming potential and fuel use), so that the use of alternatives with a contribution to global warming should be discouraged where other, more environmentally friendly, safe and technically and economically feasible alternatives or

technologies are available;

**Request** the TEAP to prepare a report on 1) the availability and timing of alternatives to high GWP HFCs, including not-in-kind alternatives and low-GWP HFCs; 2) the funding needs for key developing countries to phase-out or not to use HFCs with high GWP HFCs and 3) the most efficient and prompt regulatory options to phase out high GWP HFC's via coordinated regulation under both the UNFCCC and the Montreal Protocol;

**Amend** the Montreal Protocol to expand its mission to combat climate change associated with ODSs and their substitutes including HFCs with high GWP; and

**Encourage** coordination with the United Nations Framework Convention on Climate Change (“UNFCCC”) to facilitate technology transfers and create funding mechanisms for the phase-out of high-GWP HFCs.

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DOHA, 20 NOVEMBER 2008

**The Montreal Protocol** on Substances that Deplete the Ozone Layer (“Montreal Protocol”) has forced the phase-out of more than 95% of the global production and consumption of several classes of chemicals that deplete the ozone layer and cause climate change. As a consequence of these phase-outs, a significant portion of ozone depleting substances (“ODSs”) used as refrigerants and foam-blowing agents are now being replaced with Hydrofluorocarbons (“HFCs”). Although HFCs are not ODSs, they are powerful greenhouse gases exacerbating climate change. Most HFCs have a global warming potential (“GWP”) hundreds to thousands of times greater than carbon dioxide (“CO<sub>2</sub>”) and are therefore extremely powerful greenhouse gases (“GHGs”). HFCs are being created both as substitutes for ODSs, such as hydrochlorofluorocarbons (“HCFCs”), and as by-products of the production of HCFC-22 which is a refrigerant and a feedstock to produce Teflon™ and its generic brands.. Decisions and Amendments

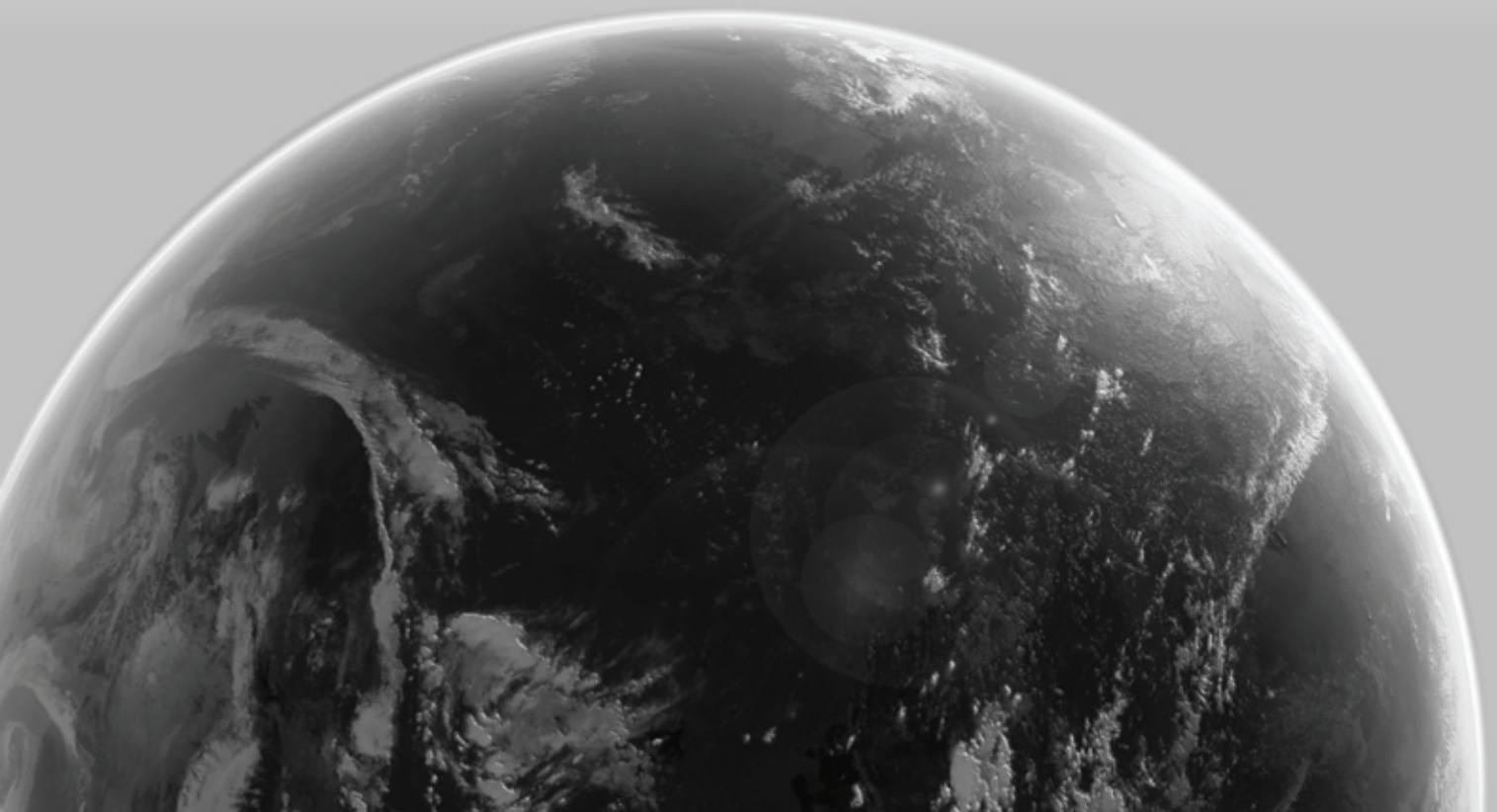
to the Montreal Protocol must be made in order to both prevent the increased use of high-GWP HFCs<sup>2</sup> as ODS substitutes and to phase-out HCFCs in the most environmentally friendly manner. The Montreal Protocol must account for the climate impacts of HFCs by encouraging the use of other energy-efficient ODS substitutes accounting for both the direct climate impact of chemical emissions and the indirect climate impact of fuel use. These goals can be most efficiently accomplished if the Montreal Protocol works in collaboration with the United Nations Framework Convention on Climate Change (“UNFCCC”) to effectuate the phase-out of high-GWP HFCs.

The history of the Montreal Protocol is one of a dynamic and evolving treaty that responds quickly to changes in ozone and climate science, technology, and the needs of industries and countries dependent on ODSs and their substitutes. Following in this tradition, and consistent with the purpose and

spirit of the Montreal Protocol to protect the global environment, decisions should be taken and the treaty should be amended to include high-GWP HFCs among the categories of regulated chemicals. The actions that need to be taken to achieve this goal include:

1. A decision to discourage HFC use and emissions and to finance the agreed incremental costs under the MLF of avoiding high-GWP HFCs.
2. An amendment to allow the phase-out of high-GWP HFCs.

The Montreal Protocol and its Parties have repeatedly recognized the need to address the full environmental implications of their actions.<sup>3</sup> Regulation of HFCs, a class of chemicals that was commercialized due to the phase-out of ODSs under the Montreal Protocol, is the next step in fulfilling this mandate.





SECTION 1  
INTRODUCTION

The Montreal Protocol has already significantly furthered international climate change mitigation. It is estimated that the phase-out of CFCs and other ODSs will have reduced GHG emissions by the equivalent of 135 gigatons (“Gt”) of CO<sub>2</sub>-equivalent (“CO<sub>2</sub>-eq.”) between 1990 and 2010.<sup>4</sup> The Montreal Protocol’s contribution to climate change mitigation and the high GWP of many ODSs and their substitutes are widely recognized.<sup>5</sup> In fact, combating global warming was a primary reason for the acceleration of the phase-out of HCFCs that was approved at the Meeting of the Parties in September 2007.<sup>6</sup>

The timing is right for the Parties to now address the control of high-GWP HFCs, a class of chemicals whose increased use is a direct result of the Montreal Protocol’s phase-out of ODSs, even if the substitutes are not ODSs themselves. The U.N. Conference on Environment and Development calls on the Parties to “[r]eplace CFCs and other ozone depleting substances, consistent with [the Montreal Protocol], recognizing that a replacement’s suitability should be evaluated holistically

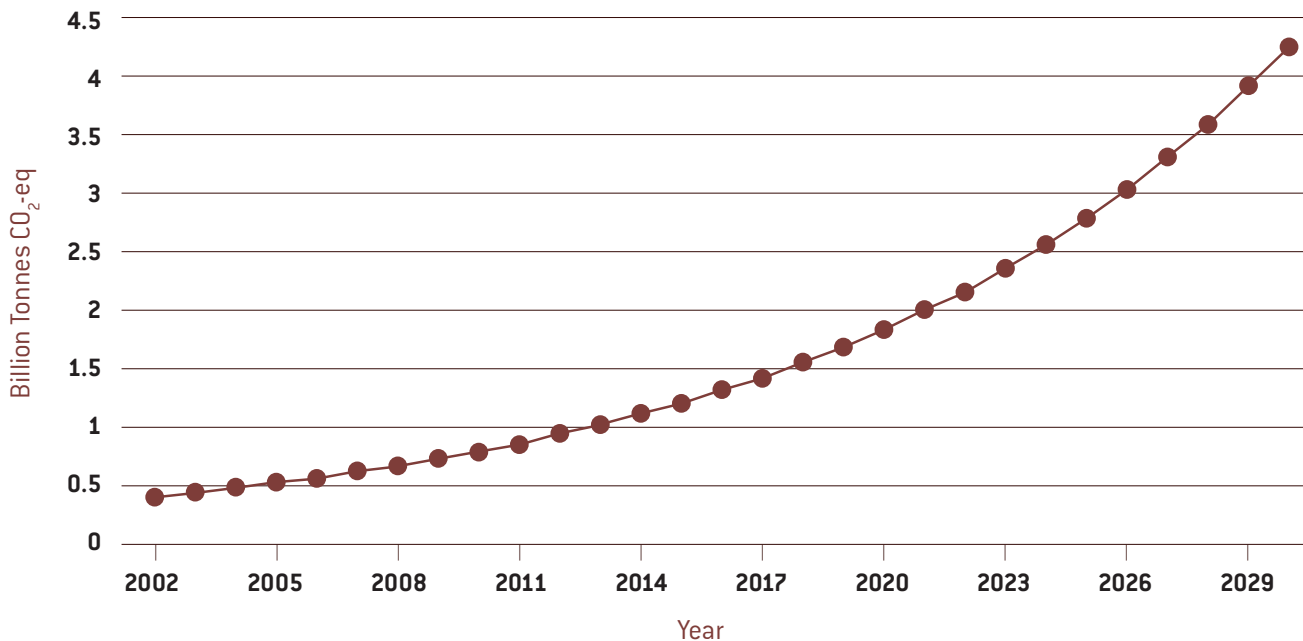
and not simply on its contribution to solving one atmospheric or environmental problem.”<sup>7</sup> If the Montreal Protocol continues to condone the use of high-GWP HFCs the result would conflict with the treaty’s precautionary and holistic approach to phasing-out ODSs, over its 21-year-history, by creating altogether different but no less dire environmental consequences.<sup>8</sup> This is particularly true where ODS substitutes including carbon dioxide (GWP=1), hydrocarbon and hydrocarbon blends (GWP<3), HFC-1234yf (GWP=4) and HFC-152a (GWP=140) are all technically and economically feasible alternatives to replace HFC-134a (GWP=1400+) currently used in automotive and stationary air conditioning and refrigeration.

The Montreal Protocol has historically regulated refrigerants, foam-blowing agents, aerosols, fire-fighting chemicals, specialty medical chemicals, and a limited number of other chemicals that deplete the ozone layer. As a result, the Parties have acquired an in-depth understanding of these industries and the uses of the regulated ODSs. HFCs are now being used as replacements for ODSs in

the same sectors currently regulated under the Montreal Protocol<sup>9</sup> or are being created as by-products of the production of these ODSs.<sup>10</sup> Therefore, regulating HFCs would be a logical extension of the Montreal Protocol and consistent with its holistic approach to sectors interacting with and affected by the phase-out of ODSs.

Unless the use of high-GWP HFCs is promptly globally curtailed, their rapid emergence, as the primary substitutes for HCFCs and other ODSs could significantly negate the climate mitigation benefits achieved by the historic phasing-out of ODSs and will offset reductions of emissions of other GHGs. Absent coordinated global action under the Montreal Protocol, Parties will be tempted to control HFCs nationally, which would likely disrupt trade and be more costly in the end. To prevent this environmental and global trade catastrophe, the Parties must once again strengthen and expand the scope of the Montreal Protocol by amending it to control HFCs to ensure the protection of the atmosphere and global environment.

GLOBAL PROJECTED HFC EMISSIONS



## SECTION 2

## RECOGNITION OF THE INTERPLAY BETWEEN ODSs AND CLIMATE CHANGE

Both the text of the Montreal Protocol and subsequent decisions by the Parties make clear that the phase-out of ODSs would not occur in a vacuum but would consider the relevant scientific information and environmental impacts, including the climatic effects. Article 2(7) embodies the Montreal Protocol's approach to the use and phase-out of ODSs, specifically HCFCs, which takes into account the full environmental impacts of ODS phase-outs: Controlled substances in Group 1 of Annex C [HCFCs] are selected for use in a manner that minimizes ozone depletion in addition to meeting other environmental, safety and economic considerations.

The Parties supported this concept by adopting Decision V/8 in 1993<sup>11</sup>, requiring them to consider ODS substitutes in light of Article 2(7) and their environmental impacts. The following year, the Parties further expanded the requirement of considering environmental impacts other than ozone depletion by adopting Decision VI/13.<sup>12</sup> Decision VI/13 required that the United Nations Environment Programme's ("UNEP") Technical and Economic Assessment Panel ("TEAP") "consider how available alternatives compare with [HCFCs] with respect to such factors as energy efficiency, total global warming impact, potential flammability, and toxicity ..."

The interplay between the phase-out of ODSs and climate change was again explicitly recognized at the Meeting of the Parties in 1998 when 41 Parties issued a statement making it clear that climate impacts should be considered in the work of the Montreal Protocol, stating, there are "scientific indications that global warming could delay the recovery of the ozone layer" and that "environmentally sound alternative substances and technologies are available for virtually all HCFC

applications."<sup>13</sup> The 41 Parties urged "all Parties of the Montreal Protocol to consider all ODS replacement technologies, taking into account their global-warming potential, so that alternatives with a high contribution to global warming should be discouraged where other, more environmentally friendly, safe and technically and economically feasible alternatives or technologies are available."<sup>14</sup> More forcefully, last year the Parties decided to accelerate the phase-out of HCFCs primarily due to the contribution HCFCs emissions make to global climate change.<sup>15</sup> The Parties agreed to substantially accelerate the phase-out of HCFCs.<sup>16</sup> It is estimated that the overall impact of the acceleration of the phase-out of HCFCs will be the following:

- Reduction of potential emissions of HCFCs by approximately 47% from business as usual;
- Avoidance of the emission of nearly one million tons of ozone depleting chemicals into the atmosphere; and
- If countries transition to low GWP substitutes for HCFCs that are commercially available today and under development, with this agreement, the world will avoid between 3 and 16 billion metric tons of CO<sub>2</sub>-eq. emissions into the atmosphere.<sup>17</sup>

The Montreal Protocol's role in controlling GHGs was explicitly affirmed in the 2007 G8 Summit Declaration which pledged: "We will also endeavor under the Montreal Protocol to ensure the recovery of the ozone layer by accelerating the phase-out of HCFCs in a way that supports energy efficiency and climate change objectives." Following the historic agreement to accelerate the phase-out of HCFCs the Leaders Meeting of Major Economies on Energy Security and Climate Change

reaffirmed its commitment to helping the climate through the Montreal Protocol by declaring on July 9, 2008, "...recognizing the need for urgent action...we commit to...actions under the Montreal Protocol on Substances that Deplete the Ozone Layer for the benefit of the global climate system." The explicit focus on climate benefits and energy efficiency in addition to ozone benefits to assess the overall impacts of ODS substitutes and other strategies adopted by the Montreal Protocol is consistent with the Montreal Protocol's history of basing actions on sound science and objective technical assessments.

**All Parties of the Montreal Protocol to consider all ODS replacement technologies, taking into account their global-warming potential, so that alternatives with a high contribution to global warming should be discouraged where other, more environmentally friendly, safe and technically and economically feasible alternatives or technologies are available.**

SECTION 3

## ACTIONS TO BE TAKEN BY THE PARTIES TO ADDRESS HFCs

### **A. A Declaration and Decision on high GWP HFCs, Including Pledge Not to Use high GWP HFCs Where Other More Environmentally Suitable Alternative Substances or Technologies are Available**

Since the First Meeting of the Parties, Declarations have been issued to identify a problem and commit those Parties signing on to the Declaration to take concrete steps to address the issue. Declarations have frequently been used to guide the future direction of activities of the Montreal Protocol.<sup>18</sup> Declarations have been used to set the stage for a variety of major changes in the Montreal Protocol from the establishment of the Multilateral Fund<sup>19</sup> to adding new substances to be regulated under the Montreal Protocol.<sup>20</sup>

1. A Declaration should be issued by the Parties which acknowledges that environmentally acceptable substitutes are available for most, if not all, uses of high-GWP HFCs, and which commits the Parties to not using high-GWP HFCs if other more environmentally suitable alternative substances or technologies are available. Such a declaration would clearly signal that the Parties are not going to restore the ozone layer by exacerbating the global climate crisis. The declaration should be followed by a Decision binding all Parties to discourage HFC use and emissions and to finance the agreed incremental costs under the MLF of avoiding high-GWP HFCs.

### **B. Request the TEAP to Prepare a Report on 1) the Availability and Timing of Alternatives to HFCs with High GWP, Including Not-in-kind Alternatives, and the Funding Needs for Key Developing Countries and 2) The Regulation Scenarios of HFCs Under The Kyoto Protocol, the Montreal Protocol and Coordinated Regulation**

The actions of the Montreal Protocol have always been based upon sound science, understanding available technology as well as promoting technological innovation, and the needs of industries and countries high-GWP HFCs dependent on ODSs and their substitutes. The decision to discourage the use of high-GWP HFCs and the ultimate phase-out of these substances should be no different. Therefore, the Parties should commission the TEAP to prepare a report by the next Open Ended Working Group that details: (a) the available substitutes for high-GWP HFCs, including not-in-kind substitutes; (b) the timing of new alternatives being available; and (c) the funding needs of key developing countries that produce significant quantities of HFCs either as direct ODS substitutes or as by-products of the production of other ODSs to achieve near-term substitution, control, and phase-out of high-GWP HFCs. The TEAP should also assess the different regulations scenarios for HFCs including (a) business as usual with regulation of HFCs under the Kyoto Protocol, (b) regulation under Kyoto Protocol and (c) coordinated regulation under both Protocols. With a full understanding of the strengths and implications of regulation of HFCs under both Protocols the Parties can develop the most effective role for the Montreal Protocol to play in the control and phase-out of these powerful GHGs.

### **C. Amendment to Add HFCs as a Class of Chemicals Regulated and Phased-Out Under the Montreal Protocol**

To date, the Montreal Protocol has only regulated substances that directly deplete the ozone layer. However, the language of the Montreal Protocol does not so limit its authority, and the Parties should amend the Montreal Protocol to expand its mission to combating climate change associated with ODSs and their substitutes.<sup>21</sup> Minor changes to the Preamble would allow the Parties to ensure that the phase-out of ODSs is accomplished without worsening climate change.<sup>22</sup> The need for

the Montreal Protocol to continue its work to find substitutes for ODSs is particularly apparent when evaluating the regulation of HFCs whose creation and increased use has directly resulted from the phase-out of the ODS. The dynamic evolution of the Montreal Protocol to address new issues created by the phase-out of ODSs supports the conclusion that the objectives of the Montreal Protocol will not be achieved until ODSs have been replaced by substances with minimal adverse impacts to the global environment.

An amendment of the Montreal Protocol to specifically combat climate change caused by ODS substitutes is consistent with the international law principals for treaty interpretation. The first place to look for the intent and scope of a treaty is the text itself, including the preamble.<sup>23</sup> When the Montreal Protocol was adopted, the Parties included in the Preamble both the concept that they were “[c]onscious of the potential climatic effects of” [ODSs] and that they were “[d]etermined to protect the ozone layer by taking precautionary measures to control equitably total emissions of [ODSs]... on the basis of developments in scientific knowledge.” The text has to be interpreted, however, in the context of all of the decisions made and actions taken by the Parties under the Montreal Protocol.<sup>24</sup> These actions include all of the decisions cited above where the climatic effects of ODSs have been recognized and where the reduction and phase-out of ODSs has been required to be viewed in the context of broader environmental consequences, including the environmental impacts of ODS substitutes, and the latest scientific and technological knowledge. These actions also include all of the work performed by the TEAP and Technical Options Committees to evaluate the non-ozone implications of the phase-out of ODSs.<sup>26</sup>



## SECTION 4

## COORDINATION OF REGULATION OF HFCs UNDER THE MONTREAL PROTOCOL WITH THE UNFCCC

HFCs are currently regulated by the UNFCCC's Kyoto Protocol. The current regulation of HFC emissions should not impede complementary regulation under the Montreal Protocol. The Kyoto Protocol requires industrialized countries that have ratified the Protocol to cut their greenhouse gas emissions by an average of 5.2% from the 1990 level by the year 2012. The Kyoto Protocol has currently been ratified by one hundred eighteen (118) countries, including thirty two (32) industrialized countries representing only 44.2% of 1990 emissions. Conversely, all of the major HCFC and HFC producing and consuming countries have ratified the Montreal Protocol which has the ability to impose phase-out requirements on all of these parties. Therefore, at this stage the regulation and phase-out of high-GWP HFCs under the Montreal Protocol will ensure a more comprehensive approach by all significant producers and users of HFCs on an equitable basis, thereby substantially reducing the likelihood of illegal trade in HFCs by creating an even economic playing field as a result of the global regulation of HFCs.

In international law, successive treaties relating to the same subject matter are commonplace, as recognized by the Vienna Convention.<sup>27</sup> International law principles allow a treaty that covers the subject matter of a historic treaty to be entered into force subject to established rules of interpretation.<sup>28</sup> To the extent the successive treaties are compatible; the provisions of both treaties are enforceable. To the extent they are incompatible, where the subject matter and parties to the treaties are the same, the language of the later treaty and the more specific treaty generally controls.<sup>29</sup>

The Parties to the Montreal Protocol have the expertise to regulate high-GWP HFCs by controlling and phasing-out their production and consumption. This is compatible with and complementary to

the UNFCCC's regulation of emissions of HFCs. The technical expertise, mechanism for technology transfer, and Multilateral Fund to assist developing countries make the Montreal Protocol uniquely suited to control and phase out high-GWP HFCs. The Montreal Protocol HFC phase-out would act as a mechanism for developed countries in UNFCCC to reach deep emissions cuts and would act as a technology transfer mechanism to help developing countries reduce their greenhouse gas emissions in a measurable, reportable and verifiable manner. The UNFCCC's Bali Action Plan<sup>30</sup> makes it clear that the post-2012 climate framework will emphasize technology transfer for developing countries and sectoral emissions reduction approaches. Recent submissions by developing countries concerning mechanisms for technology transfers have included the creation of technology assessment panels and encouraged capacity building to enable these countries to effectively address GHGs. These are techniques already deployed by the Montreal Protocol therefore a phase-out of high-GWP HFCs under the Montreal Protocol would act as a model to show UNFCCC that these techniques can be usefully applied to the climate problem.

Developing countries want predictable and sustained financing. The Montreal Protocol ties finance to specific goals and projects.<sup>31</sup> The Montreal Protocol's is one on the mechanisms that has created good relations between developed and developing countries as they have worked to phase out ODS. By keeping HFCs within the "basket" of GHGs regulated by the UNFCCC, funding for the phase-out of high-GWP HFCs under the Montreal Protocol funding from the UNFCCC could become available to defray some or all of the costs of the phase-out. Financing from the Global Environment Facility ("GEF")<sup>32</sup> and/or the other new mechanisms currently being negotiated within the climate talks could create a new source of funding for the Montreal Protocol to take on this important work. A phase-out of high-GWP HFCs would again

act as a model to demonstrate the efficacy of certain aspects of its financial mechanisms.

As the UNFCCC negotiates to extend efforts to control GHGs past 2012, it can work in collaboration with the Montreal Protocol to use an HFC-phase out as a tool for Parties to meet strong emissions reduction targets and to ensure that HFCs are not needlessly adopted in developing countries. Coordination between the UNFCCC and the Montreal Protocol could develop funding mechanisms for the control of HFCs tailored to avoid creating incentives for short-term increases in HFCs as HCFCs are phased-out.

A successful collaborative effort between the Kyoto and Montreal Protocols may go some way to addressing some of the tensions that have been felt in climate negotiations. The Montreal Protocol has demonstrated effective technology transfer and funding mechanisms for developing countries, which if applied to HFCs under the Kyoto Protocol may go some way to building trust between developed and developing countries within UNFCCC negotiations.

**The UNFCCC's Bali Action Plan makes it clear that the post-2012 climate framework will emphasize technology transfer for developing countries and sectoral emissions reduction approaches.**

SECTION 5  
CONCLUSION

Some of the recent reductions in ODS use have been achieved by unnecessarily replacing ODSs with HFCs. It is now well-established that many of these HFCs have high GWPs and are adding to the climate crisis. The objectives of the Montreal Protocol obligate the Parties to complete the task of restoring the ozone layer without exacerbating the global climate crisis. The Parties can accomplish this by: 1) issuing a Declaration on HFCs acknowledging that environmentally acceptable substitutes are available for most if not all uses of high-GWP HFCs, and committing to not use high-GWP HFCs if other more environmentally suitable alternative substances or technologies are available; 2) requesting the TEAP prepare a report on the availability and timing of alternatives to high-GWP HFCs, including not-in-kind, and the funding needs for

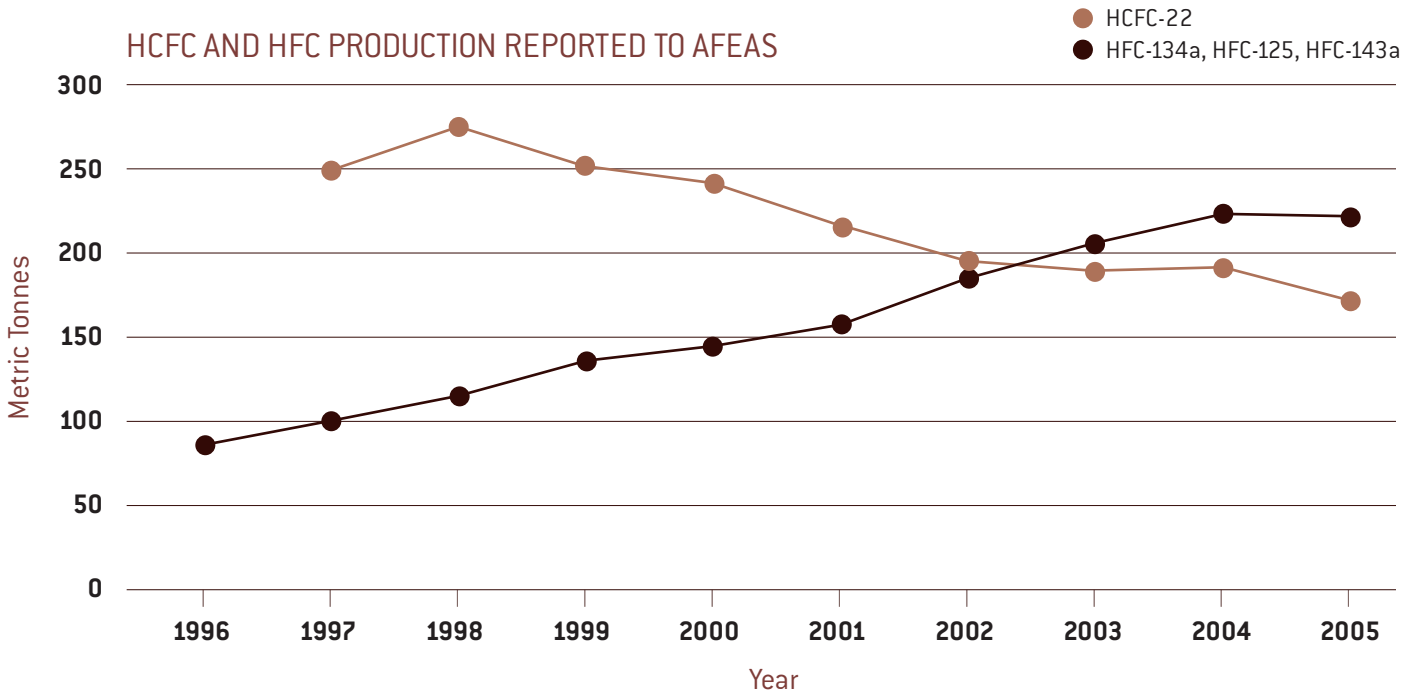
key developing countries; 3) amending the Montreal Protocol to make clear that the protection of the ozone layer is not going to be accomplished through measures that exacerbate the global climate crisis; and 4) working in collaboration with the UNFCCC to add high-GWP HFCs to the classes of substances regulated under the Montreal Protocol and establishing deadlines for their phase-out using the latest scientific and technological information, similar to the phase-out of ODSs.

The climate crisis can be effectively combated if it is disaggregated into smaller, manageable components where the strengths of international, regional, national, and local organizations and entities can be brought to bear. The Montreal Protocol has the unique capacity to regulate and promote the phase-out of high-GWP HFCs.

The Protocol must be amended immediately to meet this urgent global challenge.

“Global Warming is a catastrophe with mankind’s footprints stamped on it.”

MARK HENDERSON



## ENDNOTES

1. See e.g. Decision XI/28 [Eleventh Meeting of the Parties, Beijing, 1999] (implementing freeze on production of HCFCs due to the adverse impacts of that class of chemicals); Decision XIX/6 [Nineteenth Meeting of the Parties, Montreal 2007] (acceleration of phase-out of HCFCs in part due to the GWP of these substances and their by-products).
2. The EC has banned the use of HFCS with GWPs greater than 150 for new type motor vehicles from 2011 and all vehicles by 2017.
3. See e.g. Decision XI/28 [Eleventh Meeting of the Parties, Beijing, 1999] (implementing freeze on production of HCFCs due to the adverse impacts of that class of chemicals); Decision XIX/6 [Nineteenth Meeting of the Parties, Montreal 2007] (acceleration of phase-out of HCFCs in part due to the GWP of these substances and their by-products).
4. Donald Kaniaru et al, *Strengthening the Montreal Protocol by Accelerating the Phase-Out of HCFCs at the 20<sup>th</sup> Anniversary Meeting of the Parties: Supplement, Frequently Asked Questions*, in THE MONTREAL PROTOCOL — OZONE LAYER AND CLIMATE PROTECTION app. 1 at 261 [Donald Kaniaru ed., 2007]; Stated another way, it has been estimated that the phase-out of ODSs under the Montreal Protocol has resulted in the equivalent of a reduction of 11 Gt of CO<sub>2</sub>-eq. per year—delaying climate change by up to 12 years. Guus J.M. Velders, et al., *The Importance of the Montreal Protocol in Protecting Climate*, 104 PROC. OF THE NAT'L ACAD. OF SCI. 4814 (2007).
5. UNEP, Intergovernmental Panel on Climate Change, Technology and Economic Assessment Panel, *Special Report: Safeguarding the Ozone Layer and the Global Climate System: Issues Related to Hydrofluorocarbons and Perfluorocarbons*, at 3-4 (2005) ["IPCC/TEAP Report"].
6. See Decision XIX/6 [Nineteenth Meeting of the Parties, Montreal 2007].
7. U.N. Conference on Environment and Development, Agenda 21, at Section 9.24 (June 1992).
8. In 1987, thirty (30) countries joined together to develop the Montreal Protocol at a time when ODSs were used in thousands of products and processes. Alternatives did not then exist for many of their uses. Governments and other powerful special interests groups strenuously opposed phasing out ODSs. Despite this, the Montreal Protocol was negotiated by thirty (30) countries in just nine (9) months. These Parties began by only mandating a 50% reduction in the production of CFCs and a freeze on the production of halons. Now with one hundred ninety one (191) signatories, the Montreal Protocol is considered one of the most successful multilateral environmental agreements ("MEAs"), regulating ninety six (96) different ODSs used in approximately two hundred forty (240) sectors. In developed countries, 95% of all ODSs have been phased out; the range is from 50% to 75% in developing countries.
9. See Applications of HFCS, available at <http://www.fluorocarbons.org>.
10. The production of HCFC-22 has increased by hundreds of thousands of tons per year in the last decade, primarily for use in small air conditioners and refrigerators. A by-product of the production of HCFC-22 which is a refrigerant and a feedstock to produce Teflon<sup>®</sup> and its generic brands, is HFC-23, a "super" GHG which has a GWP of 11,700 times greater than CO<sub>2</sub>. See IPCC/TEAP Special Report, supra note 5, at 30.
11. Fifth Meeting of the Parties, Bangkok 1993.
12. Sixth Meeting of the Parties, Nairobi 1994.
13. Tenth Meeting of the Parties, Cairo 1998.
14. UNEP, Report of the Tenth Meeting of the Parties to the Montreal Protocol, "Declaration on HCFCs, HFCs and PFCs", UNEP/OzL.Pro.10/9 (1998).
15. Report of the Nineteenth Meeting of the Parties to the Montreal Protocol, UNEP/OzL.Pro.19/7. See, e.g. Decision XIX/6. Nineteenth Meeting of the Parties, Montreal 2007; Decision XIX/12, Nineteenth Meeting of the Parties, Montreal 2007; Decision XIX/20, Nineteenth Meeting of the Parties, Montreal 2007.
16. Decision XIX/6. Nineteenth Meeting of the Parties, Montreal 2007.
17. Decision XIX/6(9) [Nineteenth Meeting of the Parties Montreal 2007]; U.S. Department of State, Media Note, 2007/94.
18. In the Helsinki Declaration on the Protection of the Ozone Layer (1989), all of the governments present recognized that depletion of the ozone layer threatened present and future generations, that ODSs are powerful GHGs leading to global warming, and that environmentally acceptable substitutes were being developed and needed to be transferred to all countries. They then committed themselves to get more countries to join the Montreal Protocol, to phase out production and consumption of CFCs, committed to phasing-out halons and reducing other ODSs, and engage in ongoing research and transfers of technology. This Declaration set forth the general framework for the structure and activities that have been undertaken by the Montreal Protocol since. Each commitment was subsequently memorialized by one or more amendments to the Montreal Protocol.
19. Declaration on the Multilateral Fund (1994).
20. Declaration on Methyl Bromide [1992, 1993, 1995, 1997, 2003,2004]; Declaration on HCFCs [1993, 1995, 1997].
21. A parallel amendment to the Vienna Convention would be required.
22. An amendment to Article 2F to impose similar restrictions on the use of HFCS as HCFCs would also confirm the Parties determination to discourage the use of high-GWP HFCS. Such an amendment would be consistent with Agenda 21, which calls on the Parties to "[r]eplace CFCs and other ozone depleting substances, consistent with MP, recognizing that a replacement's suitability should be evaluated holistically and not simply on its contribution to solving one atmospheric or environmental problem."
23. Vienna Convention, Article 31(2).
24. Vienna Convention, Article 31(3).
25. See supra note 5.
26. UNEP, Intergovernmental Panel on Climate Change, Technology and Economic Assessment Panel, *Supplement to the IPCC/TEAP Report*, Nov. 2005; U.N. Env't. Programme, Intergovernmental Panel on Climate Change, Technology and Economic Assessment Panel, *Response to Decision XVIII/12*, Aug. 2007.
27. Vienna Convention, Article 30.
28. *Id.*
29. The overlap of the Parties that have signed and ratified both the Montreal Protocol and the Kyoto Protocol is almost total. Afghanistan, Chad, the Holy See, Turkey, the United States, and Zimbabwe are the only Parties to the Montreal Protocol that have not ratified the Kyoto Protocol. The doctrine of Lex Specialis favors the more specific treaty.
30. Decision 1/CP13, Thirteenth Conference of the Parties (Bali, Indonesia).
31. For example, at its 55<sup>th</sup> Meeting in July 2008, the Executive Committee of the Multilateral Fund approved US \$36 million, plus support costs, for 169 projects and activities in 108 developing countries to fund the elimination of over 1,450 tons of substances that harm the earth's ozone layer. This funding included almost US \$16.2 million for 101 countries for the preparation of plans to address the initial targets set-out in the accelerated timetable for HCFC phase out agreed by Parties to the Montreal Protocol in September 2007. Report of the 55<sup>th</sup> Meeting of the Executive Committee of the Multilateral Fund, UNEP/OzL.Pro/ExCom/55/53/Corr.1.
32. GEF projects in climate change help developing countries and economies in transition to contribute to the overall objective of the United Nations Framework Convention on Climate Change (UNFCCC). The projects support measures that minimize climate change damage by reducing the risk, or the adverse effects, of climate change.

**NOTES**



## NOTES



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