


HCFC Phase-out:

A Comparative Assessment of the Proposed Adjustments

environmental investigation agency

Introduction

At the 27th OEWG Parties to the Montreal Protocol have an historic opportunity to begin negotiations to adjust the Montreal Protocol with timely reductions leading to the phase-out of HCFCs (hydrochlorofluorocarbons). The Ozone Secretariat has received six proposals to adjust the Montreal Protocol.[1] This document has been prepared by EIA to assist Parties to compare the proposals and to recommend elements which should be included in the final version of the Adjustment decided by Parties.

In the early 1990s HCFCs became the first generation of substitute chemicals for CFCs and were added to the list of substances controlled by the Montreal Protocol. The Parties to the Montreal Protocol acknowledged that these low-ODP chemicals were 'transitional substances' that should be used to facilitate the prompt phase out of CFCs, but ultimately they too were slated for phase out. Although having considerably lower ozone depleting potentials than CFCs, the major problem with HCFCs is their high global warming potentials, of up to 2000 times that of carbon dioxide. Under a business as usual scenario, HCFC and HFC emissions are predicted to be in the region of 2 billion tonnes of carbon equivalent in 2015. This would amount to over double the global required reductions under the Kyoto Protocol by 2012.

Addressing the problem

Declarations by Parties to the Montreal Protocol have highlighted concerns over the continued use and approval of HCFCs, both in terms of their potential to deplete the ozone layer and their global warming potential. In 1995 the Vienna Declaration stated that: "Further significant reductions in the emissions of HCFCs would have a beneficial effect on the ozone layer, especially in the coming ten years where chlorine concentrations in the atmosphere will reach a critical maximum". The declaration also noted that HCFCs were not necessary for the substitution of CFCs since: "more environmentally sound alternative substances and technologies are commercially available for almost any applications". Now the alternatives which have less effect on ozone and climate are even more widely available and alternatives exist for HCFCs in all applications.[2]

A previous Adjustment proposal submitted to the Parties at the 13th MOP by the European Community called for the Technology and Economic Assessment Panel (TEAP) to examine the possibility of complete phase-out of HCFCs earlier than 2040. At that time the proposal was considered premature, but it is now very encouraging to see plans underway calling for the timely replacement of HCFCs with alternatives. Many Parties have expressed support for these recent proposals that call for reductions in the consumption of HCFCs, and to introduce controls on HCFC production.

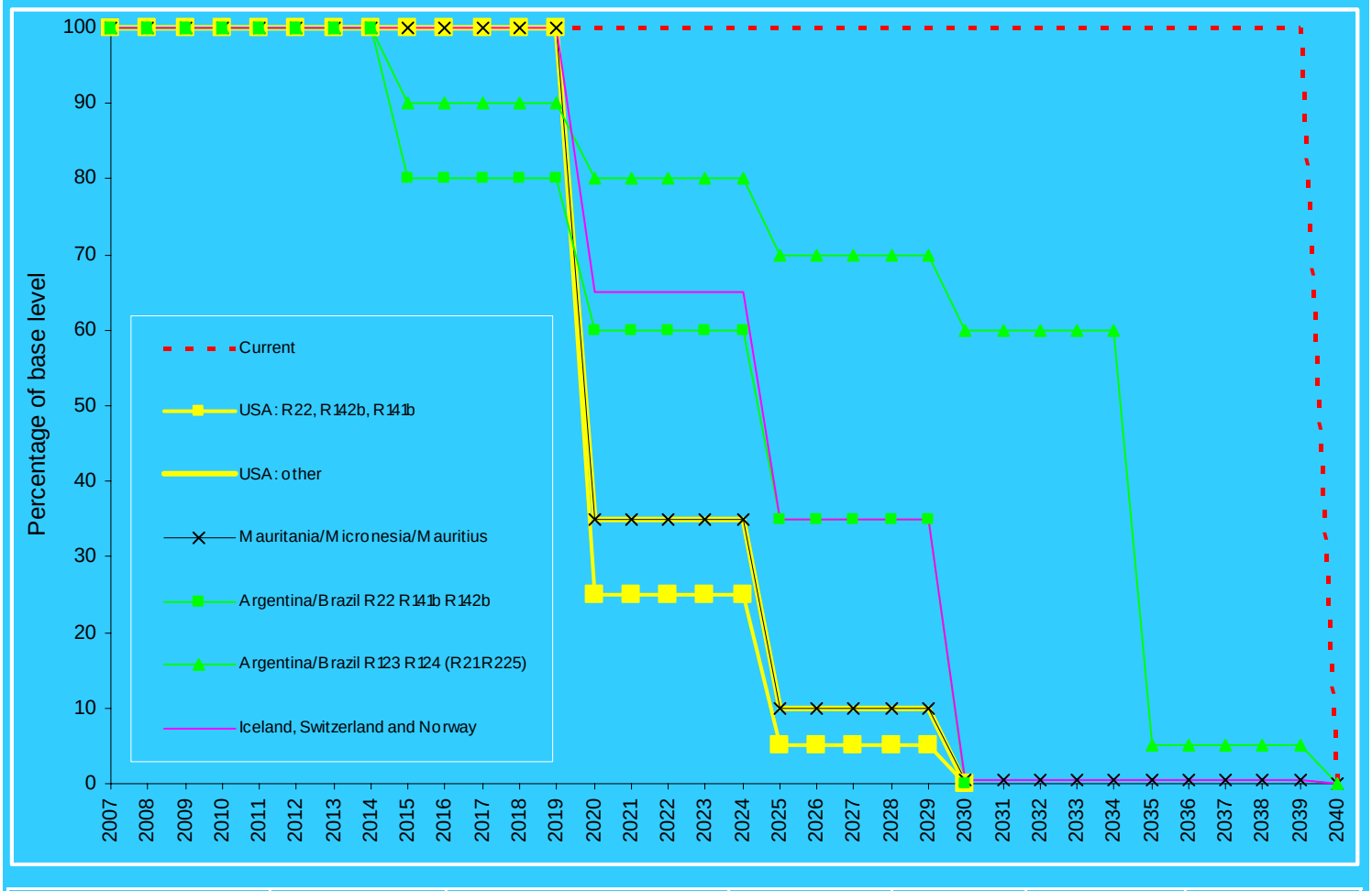
Adjusting the phase-out schedule for HCFCs has emerged as the most important issue on the agenda for meetings of the informal Stockholm Group at which participants considered that: "an agreement on an Adjustment to the control measure on HCFCs could be accomplished this year at the [20th] Meeting of the Parties".[2] This issue is also listed as an important agenda item on the *Dialogue on Key Future Challenges Faced by the Montreal Protocol*.

"An accelerated phase-out of HCFCs in developed and developing countries is both possible and necessary " [2]

An unprecedented six proposals for Adjustments to the Protocol have been submitted to the Ozone Secretariat calling for the Parties to adopt changes to the HCFC control measure this year. This represents real progress and it is important that best possible Adjustment is adopted.

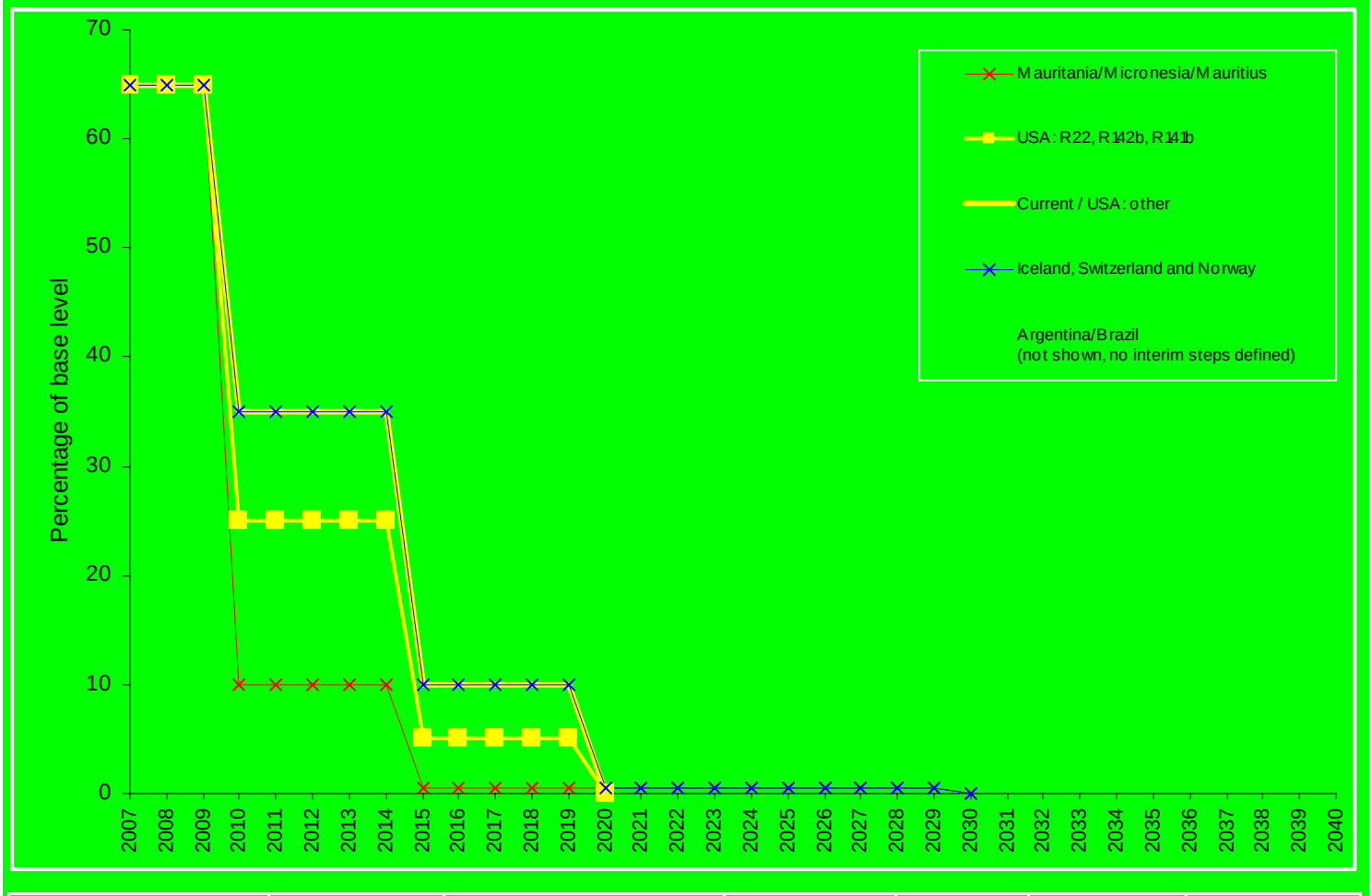
The graphs overleaf compare the phase-out schedules of these proposals (Argentina/Brazil; Iceland/Norway/Switzerland; Mauritania; Mauritius; Micronesia; USA[3]). The left graph represents the proposed phase-out schedules for Article 5 countries and the right graph the non-Article 5 countries. The accompanying table for each graph presents the other pertinent information in the proposals. Recommendations are given on the back page.

Comparison of proposed adjustments for HCFC phase-out: Article 5 countries



Article 5 countries	Argentina/ Brazil	Iceland/Norway/ Switzerland	Mauritania	Mauritius	Micronesia	USA
Base Level	2010	**Consumption:** 2014 or 152% of 2005 consumption, whichever is less **Production:** average of production and consumption in 2014 or 152% of 2005 average of production and consumption, whichever is less	2015 or 100% +X% of 2006 consumption levels, whichever is less	Average of 2010, 2011, 2012	2015 or 100% +X% of 2006 consumption levels, whichever is less	2010
Year of Freeze	2012	2015	2016	2016	2016	2011
Different phase-out schedules for different HCFCs?	YES faster phase-out for R-22, R-141b, R-142b	NO	NO	NO	NO	YES faster phase-out for R-22, R-141b, R-142b
Final phase-out	2030 (22,141b,142b) 2040 (21,123,124,225) 2009 (other)	2040	2040	2040	2040	2030
% of production for basic domestic needs (BDN)	15%	2020: 10% 2025: 10% 2030: 1% 2040: 0%	15%	15%	15%	-
Text refers to Multilateral Fund criteria & fund replenishment conditions?	YES	NO	YES	YES	YES	NO
Essential Use Exemptions after phase out?	YES	YES	YES	YES	YES	NO
Proposal text links ozone and climate?	YES	NO	NO	YES	YES	YES (in introduction)
Refers to destruction to offset production?	NO	NO	NO	YES	YES	NO
Mentions allowing continued use of HCFCs with environmental benefits?	YES	NO	YES (conditional on destruction)	YES (conditional on destruction)	YES	NO

Comparison of proposed adjustments for HCFC phase-out: Non-Article 5 countries



Non-Article 5 countries	Argentina/ Brazil	Iceland/Norway/ Switzerland	Mauritania	Mauritius	Micronesia	USA
Base Level	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged
Year of Freeze	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged
Different phase-out schedules for different HCFCs?	NO	NO	NO	NO	NO	YES
Final phase-out	2020 (interim steps not defined)	2030	2030	2030	2030	2020
% of production for basic domestic needs (BDN)	-	2010: 10% 2015: 10% 2020: 1% 2030: 0%	-	-	-	-
Text refers to Multilateral Fund criteria & fund replenishment conditions?	n/a	n/a	n/a	n/a	n/a	n/a
Essential Use Exemptions after phase out?	YES	YES	YES	YES	YES	NO
Proposal text links ozone and climate?	YES	NO	NO	YES	YES	YES (in introduction)
Refers to destruction to offset production?	NO	NO	NO	YES	YES	NO
Mentions allowing continued use of HCFCs with environmental benefits?	YES	NO	YES (conditional on destruction)	YES (conditional on destruction)	YES	NO

Benefits of an Adjustment

An accelerated phase-out of HCFCs combined with incentives and policies to transition to low or zero GWP alternatives will help speed the recovery of the ozone layer as well as offering substantial climate benefits. The Montreal Protocol has already postponed the impacts of climate change by about 10 years; an accelerated phase-out of HCFCs would further delay these impacts and could prevent the emission of around 2-5 gigatonnes of CO_2 equivalent. An accelerated HCFC phase-out gives environmentally friendly alternatives a fairer chance to compete on the market, particularly as alternatives exist for HCFCs in all applications[2].

A decision to accelerate the phase-out of HCFCs, particularly in the 20th anniversary year of the Montreal Protocol, will send an important signal to the Kyoto Protocol that HCFCs need to be urgently phased out. This is even more significant in the year that the successor to the Kyoto Protocol is being negotiated.

A fully-funded phase-out of HCFCs ensures continuity of resources for the Multilateral Fund, allowing the Fund to complete its important and cost-effective work in protecting the ozone layer. Without further phase-out commitments, there is a risk that the Multilateral Fund will not be fully replenished during the next funding cycle which would end funding of alternatives and put into question the existence of the National Ozone Unit infrastructure.

Achieving a faster phase-out

After reviewing the various proposals EIA believes that in order to achieve the benefits of an accelerated HCFC phase-out it is important any proposal package for an accelerated phase-out should contain, at a minimum, the following elements:

- **An earlier Freeze Date** - A freeze in 2011, for example, would prevent additional excessive production of HCFCs while allowing countries to adapt to the additional reduction steps.
- **A known Base Level** - The *Base Level* established as HCFC consumption in 2005 is preferred as consumption in 2005 has already been reported to the Ozone Secretariat by Parties. A past year for consumption is favoured, rather than a year in the future, as this is a concrete number which is helpful in estimating future consumption.
- **A modest Growth Factor** - A *Growth Factor* which allows for controlled growth in production and consumption of HCFCs from 2005 to the freeze date in 2011, for example, should be used. Most of the Adjustment proposals include such a growth factor.
- **Reduction Steps** - A stepwise reduction schedule needs to be implemented to replace the current schedule for A5 countries. Two to three major steps to 2030 would be recommended.
- **Promotion of low GWP alternatives** - To realise the climate benefits of an accelerated phase-out, incentives and policies need to be adopted to ensure a transition to low or zero GWP alternatives.
- **Some exemptions** - To enable this accelerated phase out to progress efficiently there would need to be, in line with Montreal Protocol criteria, the allowance for essential use exemptions, and a small a small percentage of production to satisfy basic domestic needs.
- **Application to both A5 and non A5 countries** - The phase out schedule for non A5 countries should be brought forward to reflect the implementation of alternatives to HCFCs in industrialised countries.
- **A commitment for funding** - Currently the MLF guidelines prevent funding of any ODS facility which has already had MLF assistance to transition from CFCs to HCFCs, or was created since 1995. A successful HCFC accelerated phase-out would need to be accompanied by revisions to these guidelines. It is also essential that that the non A5 countries commit to financing the accelerated phase-out of HCFCs in A5 countries.

Recommendation

EIA believes that an accelerated phase-out for HCFCs must be agreed to at the next Meeting of the Parties in September 2007. We urge Parties at this OEWG to develop an Adjustment which is environmentally sound and workable and which incorporates the elements described above.

References

1. Available as document UNEP/Ozl.Pro.WG.1/27/8/Rev.2 from: http://ozone.unep.org/Meeting_Documents/upcoming_meetings.shtml
2. Chairs report, Stockholm Group Meeting 6th February 2007, The Hague
3. The USA proposal is limited only to consumption, the remainder address production and consumption

Further information

EIA report: *Turning up the Heat* - Linkages between ozone layer depletion and climate change: The urgent case of HCFCs and HFCs
EIA report: An *Unwelcome Encore* - The Illegal trade in HCFCs
http://www.eia-international.org/campaigns/global_environment/reports/

Donald Kaniaru, Raj Shende, Scott Stone & Durwood Zaelke, *Strengthening the Montreal Protocol: Insurance Against Abrupt Climate Change*, 7 SUSTAINABLE DEVELOPMENT LAW & POLICY 3 (2007) *at* http://www.igsd.org/about/publications/Strengthening-the-Montreal-Protocol-Mar2007.pdf.

Guus J.M. Velders, *et. al.*, *The importance of the Montreal Protocol in protecting climate*, 104 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES 4814 (2007).

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