



## Nearing the Tipping Point

Summary of Greenpeace Recommendations  
20<sup>th</sup> Meeting of the Parties to the Montreal Protocol  
Doha-Quatar : November 12-16, 2008

### **Introduction**

**"We have used up all slack in the schedule for actions needed to defuse the global warming time bomb...more warming is already 'in-the-pipeline', delayed only by the great inertia of the world's oceans...climate is nearing dangerous tipping points... elements of a 'perfect storm', a global cataclysm, are assembled...time is running out"** -Dr. James Hansen<sup>1</sup>

The Montreal Protocol is a key climate treaty that bridges the dual atmospheric crises of ozone layer depletion and global warming. As such it must not only aim to phase-out all ozone depleting substances as quickly as possible, but also take responsibility for the high-GWP CFC replacement substances that the Protocol has promoted globally over the past two decades. These are hydrochlorofluorocarbons (HCFCs) as well as hydrofluorocarbons (HFCs).

In 2005 halocarbons were responsible for about 18 % of the total anthropogenic radiative forcing (i.e. direct global warming) of the planet.<sup>2</sup> The phase-out of CFCs and HCFCs can reduce this massive threat to the climate if the Montreal Protocol prevents the replacement of these substances with high-GWP HFCs.

Because CFCs are very potent global warming substances, by reducing CFC emissions, the Montreal Protocol has inadvertently also reduced the emissions of large amounts of greenhouse gases. It is estimated that the Montreal Protocol will have avoided the equivalent of between 9.7 and 12.5 billions of CO<sub>2</sub> equivalent being pumped into the atmosphere every year<sup>3</sup>. Stated another way, from 1990 to 2010 the Montreal Protocol will have reduced greenhouse gas emissions by up to 135 billion tons of CO<sub>2</sub> equivalent, and thus delayed radiative forcing increases by an estimated 7 – 12 years.<sup>4</sup>

With Decision XIX/6, at the 19<sup>th</sup> Meeting of the Montreal Protocol, the Parties accelerated the HCFC phase-out regime by ten years in both industrialized and developing countries. This long overdue agreement has the potential to enable the Montreal Protocol to further reduce global emissions by 800,000 to 1.1 million ODP tons of ozone depleting substances (ODS), or approximately 21 to 22.6 billion CO<sub>2</sub>-eq. tonnes of greenhouse gases by 2050.<sup>5</sup>

Decision XIX/6 "Encourages Parties to promote the selection of alternatives to HCFCs that minimize environmental impacts, in particular impacts on climate" [and directs] "... the Executive Committee....[to] give priority to cost-effective projects and programmes which focus on... substitutes and alternatives that minimize other impacts on the environment, including on the climate, taking into account global-warming potential, energy use and other relevant factors."

<sup>1</sup> Dr. James E. Hansen, a physicist by training, directs the NASA Goddard Institute for Space Studies, a laboratory of the Goddard Space Flight Center and a unit of the Columbia University Earth Institute: "global Warming Twenty years Later: Tipping Points Near : Posted by WorldChanging <<http://www.worldchanging.com/>> on June 23, 2008

<sup>2</sup> IPCC 2007 Report of Working Group 1 : Summary for Policy Makers, p. 4: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>

<sup>3</sup> <http://environment.newscientist.com/article/dn11317-plugging-the-ozone-hole-cut-global-warming-too.html>

<sup>4</sup> Guus J.M. Velders, et al., "The Importance of the Montreal Protocol in Protecting the Climate, 104 Proceedings of the National Academy of Science 4814 (2007) as referenced in Environmental Investigation Agency paper, "An Early Freeze to Stop the Warming", September, 2007.

<sup>5</sup> Greenpeace and EIA calculations.

According to TEAP the climate benefits provided by an earlier phase-out can only be achieved if (a) the HCFCs are replaced by alternatives that have zero or low GWPs and (b) the energy efficiency of refrigeration and air conditioning equipment is improved.<sup>6</sup>

IPCC and TEAP data indicates that large scale emissions of HFCs could ultimately reverse the climate benefits of the Montreal Protocol from the phase-out of CFCs and HCFCs. Under all business as usual scenarios, by around 2050, and certainly later, HFCs will overtake ODSs in their contribution to total anthropogenic radiative forcing.<sup>7</sup>

Recently a Declaration by the Leaders Meeting of Major Economies on Energy Security and Climate Change (9 July 2008) was signed by leaders of Australia, Brazil, Canada, China, EU, Japan, Mexico, US and others. *Inter alia*, they stated that they will “continue to promote actions under the Montreal Protocol on Substances that Deplete the Ozone Layer for the benefit of the global climate system.”<sup>8</sup>

Major world leaders have therefore pledged themselves to take further action to protect the climate under the Montreal Protocol, and the Protocol can immediately take practical steps now to ensure that in all its decisions and actions the ozone layer and the climate are protected.

### ***Greenpeace Policy Recommendations to the Parties***

Recognizing the intent of the Parties to the Montreal Protocol to most effectively protect the ozone layer and the climate through the accelerated phasing out of HCFCs Greenpeace offers the following policy recommendations:

**1. Global Phase-out HFCs:** The Montreal Protocol, in cooperation with the UNFCCC and its Kyoto Protocol, should aim to phase-out HFCs worldwide as soon as possible but certainly no later than the global ODS phase-out regime. To achieve a global phase-out of HFCs, Greenpeace seeks cooperation between the Montreal Protocol and the UNFCCC (and whatever legal instruments arise from the Copenhagen meeting in 2009) and its Kyoto Protocol. Annex I (that is, industrialized) countries to the UNFCCC should adopt phase-out policies for HFC emissions as part of the package of measures to be adopted in Copenhagen UNFCCC COP15 in 2009.

Under the Kyoto Protocol, Annex I Countries to the UNFCCC that are listed in Annex B to the Protocol, are required to limit their emissions of all greenhouse gases and sources listed in Annex A to the Protocol as a basket. As HFCs are part of this Global Warming Potential (GWP) weighted basket of gases, there would need to be a specific commitment to phase out HFCs by the Annex I countries.

The Montreal Protocol could provide technical advice on the means of elimination HFC use in Annex I countries and TEAP should be charged with preparing an analysis of phase out options.

**2. Adopt a Presumption Against HFCs Policy:** Parties to the Montreal Protocol should adopt a “presumption against HFCs” policy, which states that “HFCs must not be used in any new or retrofit applications where there are technologically proven, safe, efficient, low-GWP “not-in-kind alternative” (NIKA) technologies available”<sup>9</sup> and the Parties should ensure that such presumption against HFCs is accurately reflected in the funding policies and practices of the

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<sup>6</sup> UNEP, TEAP (2007) Report of the Task Force Response to Decision XVIII/12, August 2007; ICF International, 2007. Changes in HCFC consumption and emissions from the US proposed adjustments for accelerating the HCFC phase out. Prepared for the US EPA by ICF International, August 2007

<sup>7</sup> IPCC/TEAP Special report on Safeguarding the Ozone Layer and the Global Climate System (SROC) 2006- Chapter 1 (p.22)

<sup>8</sup> UNEP/OzL.Pro.WG.1/28/INF/7 paragraph 10

<sup>9</sup> The term “not-in-kind alternatives” (NIKA) refers to all cooling and insulation technologies that operate without fluorinated gases.

Multilateral Fund".<sup>10</sup> The Montreal Protocol should facilitate the avoidance of further HFC growth in Article 5 countries by ensuring that the phasing-out of HCFCs in Article 5 countries happen without the use of HFCs.

**3. Only Fund HFC-free Projects: Agenda item 4(a) Replenishment of MLF**

Accelerating the phase out of HCFCs Article 5 countries in a climate responsible manner will require additional funding. The Parties need to factor in these costs.

3.a To implement the intent of Decision XIX/6, the Parties must ensure that funds are not allocated through the Multilateral Fund (or through bilateral provisions) to HFC projects when environmentally safer and technologically proven alternatives are available. When required, incremental funding needs to be provided to adopt climate friendly technologies. For example, the installation of hydrocarbon technology may initially be more expensive than HFCs due to required safety measures, though the operational costs with hydrocarbons tend to be less expensive.

The suitability of all equipment should be assessed according to their efficiency and the direct global warming contribution of the substances they contain.

**3.b Adjust the Cost Effectiveness Guidelines of the Multilateral Fund:** The Cost Effectiveness Guidelines of the Multilateral Fund need to be adjusted so that they internalize the direct global warming impacts of HFCs and other substances.<sup>11</sup>

**3.c Hybrid Financing:** The Montreal and Kyoto Protocols should jointly explore the possibilities of hybrid financing of the conversion of existing HCFCs projects to HFC-free technologies. Such financing could perhaps merge the resources of the Multilateral Fund with the fiscal incentives of carbon trading and clean development mechanisms.

**3.d Enhance the Expertise of the Montreal Protocol in Natural Refrigerants:** Parties should fund the participation in TEAP of experts that have direct experience in working with not-in-kind alternative technologies in new and retrofit equipment.<sup>12</sup>

3.e TEAP should be funded to conduct a comprehensive analysis of case studies of NIKA technologies worldwide. The analysis should examine (a) the feasibility of natural refrigerants in new and retrofit applications and (b) the need and possibility of altering existing regulations that unnecessarily curtail the use of not-in-kind technologies.

**3.f Funding HFC-free Technology Transfers:** Parties should adequately fund, through the Multilateral Fund and bilateral arrangements, the transfer of NIKA technologies to developing countries. Funding should also be provided for the training of technicians in the operation and servicing of these technologies. Implementing Agencies should be mandated and funded to promote the use of NIKA technologies in developing countries through information and training outreach programs.

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<sup>10</sup> There is precedence for the Parties to adopt a "presumption against" decision regarding a given substance. Article 2F/Paragraph 7, of the Montreal Protocol states "... that each Party shall endeavor to ensure that the use of [HCFCs] is limited to those applications where other environmentally suitable alternative substances or technologies are not available". Similarly, the Executive Committee had in the past decided that "where HCFC projects were proposed, the choice of this technology should be fully justified..."

<sup>11</sup> Due to the economy of scale, the purchase price of high-GWP HFC systems are presently lower than that of systems using low-GWP natural refrigerants. These prices fail to reflect the cost of damages associated with the enhanced global warming arising from the direct greenhouse gas contributions of HFCs. Those costs are thus externalized. The lower purchase price of HFC systems make them attractive for companies in Article 5 Countries, just as they provide a perverse incentive for meeting ODS phase-out targets to Implementing Agencies and the Multilateral Fund.

<sup>12</sup> The term "not-in-kind alternatives" or NIKA, refers to all cooling and insulation technologies that operate without fluorinated gases.

#### **4. Banked CFCs and HCFCs: Item 4(b) Disposal of ODS stocks and banks**

Currently there are no mandatory obligations under the Montreal or the Kyoto Protocols for the recapture and safe destruction of the hundreds of thousands of tons of banked CFCs and HCFCs in old equipment. Falling through the crack between the two protocols, these banked CFCs and HCFCs, if emitted into the atmosphere, would equal the emissions of many billions of tons of CO<sub>2</sub>.

The Scientific Assessment of 2006 concluded that emissions of ODS from banks were higher than from any other sector<sup>13</sup>. TEAP informed MOP-19 that a “considerable portion” of the 3.5 million ODP-tonnes of ODS contained in banks is available for collection and destruction at costs justified by benefits in reducing ODS and GHG emissions<sup>14</sup>. According to the TEAP report on HCFCs of August 2007 taking action on ODS banks at end-of-life alone would yield cumulative savings of around 300,000 ODP tonnes and about 6,000 million tonnes CO<sub>2</sub>-eq. in 2011 to 2050<sup>15</sup>. (TEAP data indicated ODS emissions from all equipment and products totalling about 1.6 million ODP-tonnes in the period 2002-2015, and approximately 6,719 MtCO<sub>2</sub>-eq, and noted that cost-effective measures could be taken to protect both the ozone layer and mitigate climate change<sup>16</sup>.)

Proposals tabled by Argentina, Micronesia and Mauritius call for the destruction of ODS banks and unwanted stocks. An EC proposal recommends concrete first steps. However the co-chairs of OEWG-28 Contact Group proposed action only on stocks of contaminated ODS. This is inadequate. Urgent need to take action on ODS banks as well.

The following specific first steps can and should be taken at MOP-20

- Most A2 Parties already have national legislation that prohibits ODS releases and requires ODS recovery from many types of equipment at end-of-life. But most A2 governments have failed to fully implement their existing requirements. MOP-20 should agree a Decision that requires A2 parties to fully implement their existing legislation relating to ODS banks, to prevent venting, leakage and emission of ODS.
- A2 parties should be required (not just encouraged as stated in the EC proposal) to submit a strategy and timetable describing bank quantities and sectors, and the steps they are taking to collect and destroy ODS banks. Strategies should be submitted before the OWEG in 2009. Strategies should ideally cover HFC banks as well as ODS, because the technical issues and solutions are often the same (e.g. systems for collecting and extracting gases from MAC, refrigeration equipment, and foam in refrigerators)
- A5 parties that have significant ODS banks should also be required to provide proposed strategies and action plans on what they can do to tackle ODS banks (strategies to be funded by MLF). The proposed strategies should identify all potential funding sources for incremental costs, including revenue from recovery of metals and other components in end-of-life equipment, potential efficiencies of recovering both ODS and HFCs, and related economic/financing proposals
- As suggested in the EC proposal, the MOP Decision should ask TEAP to summarise (and where necessary update) technically feasible actions to eliminate ODS banks in each sector,

<sup>13</sup> As stated in the EC proposal on ODS banks, the other major emissions area identified by the Scientific Assessment was an earlier phase-out of HCFCs. The parties took action on HCFCs at MOP-19, but have not yet addressed the area of ODS banks.

<sup>14</sup> Report of MOP 19, UNEP/OzL.Pro.19/7 paragraph 21

<sup>15</sup> TEAP Response to Decision XVIII/12, August 2007, available at [http://ozone.unep.org/Assessment\\_Panels/TEAP/Reports/TEAP\\_Reports/TEAP-TaskForce-HCFC-Aug2007.pdf](http://ozone.unep.org/Assessment_Panels/TEAP/Reports/TEAP_Reports/TEAP-TaskForce-HCFC-Aug2007.pdf)

<sup>16</sup> TEAP (2005) Supplement to the IPCC/TEAP Report estimated that ODS banks were around 3.7 million ODP-tonnes in 2002 and will be around 2.1 million in 2015. This indicates emissions of about 1.6 million ODP-tonnes in the period 2002-2015.

taking into account both ozone and climate benefits, and provide more examples of actual incremental costs from existing practice.

- The Decision should allocate MLF funds for several demonstration projects tackling ODS banks, as ‘models’ (as described above)
- Immediately before OEWG-29, the Parties should hold a workshop on practical steps to tackle ODS banks, with the goal of identifying concrete steps for A2 and A5 parties for an Amendment or Adjustment in 2009.

##### **5. Zero tolerance for new ODS substances:**

**N-Propyl Bromide:** The toxicity and the ozone depleting contribution of n-propyl bromide was first considered by the Parties in 1998, at the 18<sup>th</sup> OEWG in Cairo. The 2007 TEAP Report noted that “it was not possible to obtain highly accurate production and emission data [of n-propyl bromide], owing to the absence of required yearly reporting, but ...the estimated annual global production capacity exceeded 20,000 metric tons”. The 2007 TEAP also reports that n-propyl bromide has a high level of toxicity for animals and humans.

Given the above factors regarding n-propyl bromide, as well as concerns regarding other new ozone depleting substances, Greenpeace recommends that (a) the Parties mandate the annual reporting regarding the production and consumption levels of n-propyl bromide and all other ODSs that are currently not within the regulatory regime of the Montreal Protocol ; and (b) that the Parties consider incorporating an umbrella clause into the Montreal Protocol that automatically places all new substances with ozone depleting potentials (ODPs) on a fast track phase-out schedule.

##### **6. Methyl Bromide :**

###### **6.a MB Critical Use Exemptions (CUEs) : Item 4(d)(i)**

In 2005/6 a total of 20 parties requested CUEs. 15 Parties have eliminated CUEs and are not submitting further requests – ¾ of Parties have eliminated CUEs. 5 Parties continue to ask for unjustified CUEs, although other parties have amply demonstrated that chemical and non-chemical alternatives are technically and economically feasible.

Lack of registration is not an acceptable excuse since parties have known the MB phase-out date since 1997, and non-chemical alternatives are available in cases where registration has not been achieved. The remaining CUEs do not fully meet the criteria in Decision IX/6 and should not be approved by MBTOC or MOP.<sup>17</sup>

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<sup>17</sup> The total quantity nominated in this round is 4,585 tonnes and MBTOC has recommended 4,182 tonnes (91%). If this is accepted by MOP, CUEs as percent of baseline would be

- Canada – 19.6 % of baseline in 2009, 15.2% in 2010 (expected to request additional CUEs next round)
- Israel – 17.1% of baseline in 2009
- USA – 16.7% of baseline in 2009, 12.7% in 2010
- Australia – 5.3% of baseline in 2009, 5.2% in 2010
- Japan – 5% of base in 2009, 4.4% in 2010
- EC (13 countries), New Zealand and Switzerland – 0% of baseline in 2009 and 2010

By tonnage, the US alone accounts for 74% of the requested total in this round. It is worth noting that the countries that nominated the largest tonnage of CUNs (US, Israel, Japan) are countries that still have MB manufacturers. A large tonnage of CUNs is strongly correlated with the presence of MB manufacturers in a country.

**US stocks.** Large MB stocks remain in the US (6,503 tonnes at the end of 2007)<sup>18</sup>. In contrast the EC prevented stocks being accumulated because they allowed stocks to be used ONLY for CUEs, and deducted stocks before authorizing new production/imports.

#### **6.b MB production for Basic Domestic Needs: Item 4(d)(ii)**

Kenya and Mauritius have submitted a draft Adjustment to reduce the maximum allowance of MB production in A2 countries for so-called Basic Domestic Needs (BDN) in A5 countries. At present the allowed production is up to 80% of the BDN baseline, and the proposal suggests 40% from 2010. A lower BDN is appropriate. A5 countries have substantially reduced MB consumption ahead of the scheduled date – A5 consumption was only 39% of the A5 baseline in 2007, and will be much lower by 2010. If MB production is allowed to continue at a higher level than consumption, there is a strong risk of dumping in A5 countries, and falling MB prices (leading to backsliding). It is therefore necessary to restrict the permitted level of BDN production to match the falling consumption.

**Surplus MB production:** An examination of the Ozone Secretariat database on production/consumption shows that the global production of MB (for uses controlled by the Protocol) exceeded consumption in 2006 and 2007. The excess production was more than 3,190 tonnes in 2006 and an estimated 740 tonnes in 2007.

#### **6.c MB Quarantine and Pre-shipment (QPS) proposal : Item 4(d)(iii)**

QPS is the major remaining uncontrolled emissive use of ODS. It is time for the Parties to address this uncontrolled use. A survey in 2004 found that 42 countries considered that 65% of their QPS consumption could be replaced with commercially-available alternatives if they could overcome impediments. There is an approved alternative for ISPM-15 wood/packaging, and more than 5500 alternative treatment facilities have been certified in the US, EC and other countries. TEAP in 2007 also noted many approved alternatives for QPS.

The EC, Mexico and Switzerland have submitted a draft Decision which proposes some initial steps on QPS. Greenpeace supports the proposed update by TEAP on the status of QPS alternatives before OEWG-29. In the past TEAP experts have experienced difficulty in compiling information about QPS. So its essential that the Decision should also ask governments, experts, companies, NGOs and others to submit technical and cost information about QPS-alternatives to the Ozone Secretariat, and this information should be summarised by TEAP and made available as an annex to the TEAP report.

In the interests of transparency, Article 7 reports on QPS should be published on the Ozone Secretariat database, like other data on ODS production and consumption. There is no legitimate reason for QPS data to remain hidden.

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<sup>18</sup> TEAP Report on Critical Use Nominations October 2008, table 3.3 on page 7

