

# Greenpeace Position Paper

Prepared for 23<sup>rd</sup> Meeting of the Parties to the Montreal Protocol

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## Introduction

The activities of the Montreal Protocol must be placed within the larger context of the rapidly changing global climate. The World Meteorological Organisation (WMO) ranked 2010, along with 1998 and 2005, as one of the warmest years on record.<sup>i</sup> At the same time, the International Energy Agency reported that CO<sub>2</sub> emissions in 2010 reached a record high of 30.6 Gt. 2010 was punctuated with extreme weather events around the world.

As we head towards the UN climate conference taking place in Africa, a continent where the impacts of climate change are already strongly undermining social and economical development, threatening food security and biological diversity, and costing the lives of many people, nobody should dare to argue that they cannot afford to cut emissions. Allowing climate disaster to unfold will serve nobody's economic, social or environmental interests.

## HFCs: The low-hanging fruit in tackling climate change

If we are to keep temperature rise below 2°C, let alone the 1.5°C recommended by scientists and supported by a majority of countries, we must take action on all fronts. Hydrofluorocarbons (HFCs) are a 'low-hanging fruit' in the effort to prevent dangerous climate change. As extremely potent and short-lived greenhouse gases, their elimination will have an immediate and positive effect on the global climate, yet their growing emissions make them a rapidly increasing threat.

Since HFCs are primarily used as replacements for ozone-depleting substances (ODSs) controlled by the Montreal Protocol, the Protocol is largely responsible for their massive global uptake. Hydrochlorofluorocarbon (HCFC) consumption in developing countries is expected to peak in 2013<sup>ii</sup> at approximately 566 kilotonnes (kt) a year (or 3.14 times the peak CFC consumption).

Should HFCs replace HCFCs in developing countries, consumption of HFCs in developing countries is projected to be four to eight times greater than in developed countries by 2050. HFCs could, by 2050, represent 19% to 45% of total greenhouse gas emissions. That level of HFC emissions will negate the climate co-benefits of the Montreal Protocol's CFC and HCFC phase-out.<sup>iii</sup>

The good news is that HFC-free alternatives for most applications are tried, tested and ready to go.<sup>iv,v</sup>

## Greenpeace Recommendations

### **1. Greenpeace supports the intent of the proposed Amendments by Federated States of Micronesia and North America to bring HFCs into the regulatory regime of the Montreal Protocol in cooperation with the UNFCCC.**

An international agreement to bring HFCs into the regulatory regime of the Montreal Protocol would be an important step towards a total phase-out of these dangerous substances. The Montreal Protocol should be the key facilitating body for phasing out production and consumption of HFCs around the world. The Protocol has the relevant expertise and global infrastructure to provide necessary funding, technology development and capacity building.

## 2. HFC phase-out by 2020

Phasing out HFCs in both developed and developing countries is a crucial step in saving the planet from climate catastrophe. There is now a growing consensus that HFCs must not become the prime replacement for HCFCs. Therefore, the HFC phase-out needs to be synchronised with the 2020 developed country HCFC phase-out schedule. Such an environmentally ambitious target date will:

- compel developed countries to phase out HFCs; and
- encourage developing countries to leapfrog HFCs altogether and move directly to sustainable alternatives.

### International ban on HFC-23 offsets

HFC-23, with a Global Warming Potential (GWP) of 11,700 and atmospheric life of 250 years, is a by-product of HCFC-22 production. As such, it is a by-product of the Montreal Protocol. High GWP has provided a CDM cash cow for the producers of HCFC-22 in developing countries. Perversely, CDM offsets make the production of HCFC-22 more profitable than the product itself.

A combination of measures is needed to minimise this perverse incentive:

- An international ban on any new HFC-23 offsets following the example of the EU's ban on using HFC-23 credits as of May, 2013.
- Revising the base cap on HCFC-22 production to average historic levels, instead of allowing the cap to reach maximum 2013 levels.
- Providing Multilateral Funds for abating HFC-23 emissions from HCFC-22 production facilities that have not received CDM funding.
- A ban on the import, export and use of HCFC-22 produced in plants that do not have HFC-23 destruction technologies in place.

## 3. Include the short-term 20-year GWP<sup>vi</sup> of HFCs in policy making

An important aspect of Global Warming Potential is the timescale used: there are 20 year, 100 year and 500 year GWP values for the majority of greenhouse gases.

The average lifetime of the HFCs in use today is 21.7 years and therefore better suited to the 20-year GWP metric. Indeed, the average GWP<sub>20</sub> for HFCs (at 4,582) is 94% greater than the GWP<sub>100</sub> average (at 2,362). Their short-term climate impact is thus diluted when measured using GWP<sub>100</sub> and not adequately accounted for in climate policies.<sup>vii</sup> The GWP<sub>20</sub> metric better reflects the true potency of HFCs during their actual time in the atmosphere. The Montreal Protocol should, as a matter of procedure, consider the 20-year GWP of substitutes to HCFCs when formulating policies and making funding decisions.

## 4. Support the uptake of natural refrigerants and foaming agents

Greenpeace has, since 2000, conducted an annual global survey of the producers and users of HFC-free cooling technologies.<sup>viii</sup> The Greenpeace survey, along with other reports, documents that it is already possible to meet nearly all cooling needs with climate-friendly, technologically proven, safe and cost-effective technologies that use natural refrigerants (such as hydrocarbons, carbon dioxide, ammonia and water), which in most applications are more efficient than their fluorocarbon counterparts.<sup>ix</sup>

The main obstacles in the way of the uptake of natural substances are not technological, but commercial, political/regulatory and financial. To overcome these obstacles Greenpeace calls on the Parties to develop a comprehensive strategy to promote the use of natural refrigerants and foam blowing agents. Such strategy will include:

- annual updating of the 2009 'TEAP Report on alternatives to HCFCs and HFCs';
- enhancement of UNEP confidence building measures in the form of information and capacity building workshops in developing countries;
- upgrading of international regulatory measures to reflect the current state of natural refrigeration technologies; and
- provision of additional financial incentives through the Multilateral Fund to enable natural refrigerants and foam blowing agents to be the primary technology of choice in developing countries.

## 5. Uphold the Precautionary Principle: Do not support the uptake of HFC-32 or HFOs

Greenpeace does not consider either HFC-32 or HFOs as sustainable refrigerants for the future.

### HFC-32:

Given that HFC-32 has a GWP100 of 716 and GWP20 of 2,470 it cannot be considered a low-GWP substance.<sup>x</sup> In fact, the large uptake of HFC-32 could undermine the intent of the proposed HFC phase-down amendments, which aim to level off at about 10% of the GWP-weighted consumption of today. An additional consideration for developing countries is that HFC-32 represents patented technology so that, even with licences, it will reduce the capacity of developing countries to be technologically self-reliant.

### HFOs:

While HFOs have low GWP, their large-scale uptake potentially poses other environmental dangers. A key concern, requiring further investigation, is their contribution to long-term accumulation of trifluoroacetic acid (TFA) in fresh water ecosystems. TFA is a persistent toxin, and is a by-product of the break down of most HFCs. HFC-1234yf produces four to five times more TFA than the same amount of HFC-134a. The concentration of TFA in fresh water bodies around the world could have dramatic effects on plants and animals and human health. The full environmental impacts and toxicity characteristics of HFOs will not be known for some years. It is therefore premature and risky to consider them as reliable alternatives to HCFCs.

Additional concerns regarding HFOs include:

- efficiency loss of up to 10%;
- the increased cost of HFC-1234yf, at an expected 10 to 20 times more than HFC-134a, causing service technicians to revert back to HFC-134a; and
- toxic flammability risking human safety.

Ultimately, they are not necessary, since natural refrigerants can be used in all the proposed applications of HFOs.<sup>xi</sup>

## 6. Replenishment of the Multilateral Fund

A successful HCFC phase-out that avoids the unintended uptake of HFCs and facilitates the uptake of natural refrigerants and foam blowing agents will require adequate funding.

Since HCFC consumption is projected to peak in developing countries in 2013 at a level that is more than three times the peak CFC consumption then, based on these consumption levels and given that approximately \$2 billion US dollars of the total Multilateral Fund to date was spent on CFC phase-out, it is realistic to assume that HCFC phase-out will cost between \$5 bn and \$6 bn over the next 20 years. There will be additional costs to facilitate the uptake of natural refrigerants and foam blowing agents.

Taking all these factors into consideration, we call on donor countries to be prepared to provide a minimum of \$1 bn for each of the upcoming replenishment periods.

## 7. Action to prevent emissions from banked F-gases

There are currently no mandatory obligations under the Montreal or Kyoto Protocols for the recapturing and destruction of CFCs or HCFCs, even though a significant amount of HCFC/CFC emissions come from their respective banks<sup>xii</sup>.

Greenpeace calls on the Parties to the Montreal Protocol to **create the necessary regulatory instruments and mandatory obligations to recapture and safely destroy banked CFCs, HCFCs and HFCs in old equipment.**

Greenpeace also calls for **financial resources** to be secured by the international community for the **establishment of a global network for recapturing and safe destruction of ozone-depleting substances and HFCs stored in products and equipment.** Otherwise, many billions of tonnes of CO<sub>2</sub>e will inevitably be released into the atmosphere.

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- i The World Meteorological Organisation (2011). Weather Extremes in a Changing Climate: Hindsight on Foresight
- ii Fredonia group, Inc (2009). Industry study 2528/World Fluorchemicals Cleveland, Ohio
- iii Velders et al. (2009). The large contribution of projected HFC emissions to future climate forcing
- iv Greenpeace International (2011). Cool Technologies: Working Without HFCs
- v Federal Environment Agency of Germany (2011). Avoiding Fluorinated Greenhouse Gases
- vi Global warming potential (GWP) measures the potency of a greenhouse gas over a specific period of time, relative to carbon dioxide (CO<sub>2</sub>), which has a GWP of 1. An important aspect of GWP is the timescale used: there are 20-year, 100-year and 500-year GWP values for the majority of greenhouse gases.
- vii Greenpeace International (2011). Benefits of Basing Policies on the 20 Year GWP of HFCs. With research by Öko-Recherche GmbH in cooperation with HEAT GmbH (Germany)
- viii Ibid.
- ix Federal Environment Agency of Germany (2011), op cit.
- x WMO (2011). 1.59, 5.47-5.48.
- xi Greenpeace International (2011). HFOs: the new generation of F-gases: Greenpeace Position Paper
- xii 2006 TEAP/IPCC special report notes

For more information, contact:  
[enquiries@greenpeace.org](mailto:enquiries@greenpeace.org)

Greenpeace International  
Ottho Heldringstraat 5,  
1066 AZ Amsterdam,  
The Netherlands

**greenpeace.org**