

Greenpeace Position Paper

24th Meeting of the Parties to the Montreal Protocol

Geneva, November 2012

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 as one of the warmest years on record, and 2011 and 2012 have continued this trend.ⁱ At the same time, the International Energy Agency reported that CO₂ emissions in 2010 reached a record high of 30.6 Gt. Catastrophes due to extreme weather events are now routine around the world.

As we acknowledge the 25th Anniversary of the Montreal Protocol, Greenpeace calls on the Parties to make full use of the capacity of the Montreal Protocol to further protect the ozone layer and the global climate.

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. We must immediately reverse the current trajectory of ever-increasing emissions of greenhouse gases.ⁱ

The question then becomes: What are the most available and effective steps to reduce the flow of greenhouse gas emissions in the short term while we tackle the overall challenge of weaning the world from dependence on fossil fuels? One answer is to eliminate the use of HFCs by 2020.

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 2013ⁱⁱ 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.ⁱⁱⁱ

The good news is that HFC-free alternatives for most applications are tried, tested and ready to go.^{iv,v}

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.

Should the Parties fail to act boldly on opportunities to further protect the climate by incorporating HFCs into the Montreal Protocol, it may be prudent for them to reconsider the need for annual meetings, given that the implementation of HCFC phase-out is fully under way. The Parties limited funds may be better used by convening the Meeting of Parties and the Open Ended Working Group every two years. This would also reduce the overall carbon footprint of the Montreal Protocol.

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-

ⁱ In 2011, the Executive Director of UNEP, Achim Steiner, stated the following: "To ensure that by 2020 temperature levels do not exceed the 1.5° to 2° centigrade threshold, global greenhouse gas emissions must be limited to around 44 gigatonnes (Gt) of CO₂ equivalent. However, under a business as usual scenario, emissions are projected to rise to around 56 gigatonnes, and even if all the highest climate protection ambitions of all countries are implemented and supported the global emissions are still expected to reach 49 gigatonnes of CO₂ equivalent by 2020". (Steiner, 2011).

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.

3. Stop HFC-23 emissions

- The Parties agree that HFC-23 emissions must end. A key measure is an 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 January, 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.

4. Include the short-term 20-year GWP^{vi} 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 GWP₂₀ for HFCs (at 4,582) is 94% greater than the GWP₁₀₀ average (at 2,362). Their short-term climate impact is thus diluted when measured using GWP₁₀₀ and not adequately accounted for in climate policies.^{vii} The GWP₂₀ 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.

The GWP₂₀ metric also provides a more accurate tool for defining "low GWP and high GWP substances". While GWP₁₀₀ values of some substances may seem deceptively attractive to some policy makers, the same substances measured using GWP₂₀ become much less appealing. A prime example is HFC-32, with a GWP of 675 over 100 years and 2,330 over 20 years.

5. Support the uptake of natural refrigerants and foaming agents

Greenpeace, since 2000, has conducted an annual global survey of the producers and users of HFC-free cooling technologies.^{viii} 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.^{ix}

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.

6. 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.^x 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.
- production of HFOs will require the continued production of HCFCs in perpetuity.
- the chemical industry creating HFO blends which include HFCs, that upon atmospheric dissolution will revert to their basic compounds and will make their global warming contributions accordingly.
- Ultimately, they are not necessary, since natural refrigerants can be used in all the proposed applications of HFOs.^{xi}

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^{xii}.

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 CO₂e will inevitably be released into the atmosphere.

Greenpeace recommends that governments act vigorously to compel the chemical companies, whose fluorocarbon products caused the ozone crisis and have contributed greatly to global warming, to substantially contribute funds towards the safe recapture and destruction of all banked CFCs, HCFCs and HFCs.

8. Zero ODS tolerance policy required.

The fragile state of the ozone layer requires that the elimination of all human made ozone depleting substances. Each ODS molecule produced is one too many.

Greenpeace calls on the Parties to develop a zero-tolerance policy towards all new substances with ozone depleting capability. Governments must give industry a clear and simple message. No new products with ozone depleting potential will be tolerated. Only then will industry understand that it is a waste of time and money to develop new ODS products.

As an initial step, the Parties should consider compulsory reporting on production and consumption of new ODSs.

9. Controlling the use of feedstocks

Feedstock use is increasing. Originally feedstock was exempted from the regulatory regime on the assumption that they would amount to nearly zero emissions. However, the actual emissions in some facilities could be much higher than assumed. Furthermore, some Parties may use feedstocks as a loophole for the continued production of HCFCs.

Greenpeace calls on the Parties to prevent the use of feedstocks as a loophole for the continued production of HCFCs, and to take immediate action to reverse the trend of increased use of feedstocks by regulating them under the Montreal Protocol.

References

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 (CO₂), 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} Greenpeace International (2012). Cool Technologies: Working Without HFCs. INTERIM REPORT

-
- ix Federal Environment Agency of Germany (2011), op cit.
x WMO (2011), 1.59, 5.47-5.48.
xi Greenpeace International (2012), HFOs: the new generation of F-gases. Greenpeace Position Paper
xii 2006 TEAP/IPCC special report notes

For more information, contact:
enquiries@greenpeace.org

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

greenpeace.org