**Q&A on Ozone-Climate Protection and Energy Efficiency**

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**1. What is the Montreal Protocol?**

The Montreal Protocol on Substances that Deplete the Ozone Layer was negotiated in 1987 to regulate production and consumption of chemicals that damage the ozone layer, referred to as ozone-depleting substances (ODS).

The Montreal Protocol is considered the world’s best international environmental agreement.  It has successfully phased-out the production of 95% of ozone-damaging chemicals in developed countries and 50-75% in developing countries.

As a result, the ozone layer is expected to recover later this century.  But scientists recently reported a five year delay in recovery, partly due to increases in HCFC use.

Because many ODSs also are powerful greenhouse gases (GHGs) responsible for climate change, the Montreal Protocol’s past success in phasing-out CFCs is reducing GHG emissions by 135 billion tons of carbon dioxide-equivalent (GtCO2-eq.) by the end of the decade.  This is delaying climate change by up to 12 years.  Eliminating HCFCs will provide additional emissions reductions and delay climate change further.

**2. What are HCFCs and how can they be eliminated?**

Hydrochlorofluorocarbons (HCFCs) are a group of chemicals used mainly as coolants in refrigerators and air conditioners and to make insulating foams and other products. They are being used as temporary substitutes for chlorofluorocarbons (CFCs) and other ODSs that are even more dangerous to the ozone and climate, and were intended to be replaced once superior substitutes became available.

In addition to warming the planet, HCFCs damage the ozone layer. As a result, they are regulated by the Montreal Protocol. Under the Montreal Protocol, HCFCs are scheduled for phase-out by 2020 in developed countries and 2030 in developing countries (with HCFC use frozen in 2009 at 2010 levels).

**3. What are the climate and ozone benefits of accelerating the HCFC phase-out?**

Accelerating the HCFC phase-out could reduce GHG emissions by more than 25 GtCO2-eq., starting almost immediately and continuing until mid-century. This is roughly five times the climate reductions expected under the climate treaty, the Kyoto Protocol.

This can delay further warming and can help the climate system from passing the tipping point for abrupt and irreversible climate change.  This will buy some much needed time to make the steep emissions cuts necessary to avoid catastrophic climate impacts.

This is important for developing countries, who face the greatest risk from climate change and will be hardest hit by rising sea levels, increased storms, droughts, and floods, decreased agricultural production and freshwater supply, among other impacts.

The accelerated HCFC phase-out also will speed the recovery of the ozone layer, which is on track to return to pre-1980 levels sometime later this century, since scientists recently reported a five year delay in recovery, partly due to increases in HCFC use.

**4.** **Is energy efficiency related to the HCFCs phase-out under Montreal Protocol?**

HCFCs need to be replaced by substitute chemicals that are more climate-friendly, and the refrigeration and air conditioning equipment in which they are used needs to be redesigned to improve energy efficiency. Substitute chemicals with lower Global Warming Potentials (GWPs) than HCFCs exist and are expected to be available to replace most uses of HCFCs. Further regulation will help create incentives for continued development of these climate-friendly substitutes.

Improving energy efficiency is the fastest, cheapest, and most effective way to fight climate change, because it means fewer GHG emissions from power generation. Refrigeration and air conditioning equipment has grown more and more energy efficient over the last 30 years, in some cases using 65% less energy than equipment manufactured in the 1970s.

The accelerated HCFC phase-out could help spur a similar jump in energy efficiency as part of the transition out of HCFC-based equipment.

The Montreal Protocol emphasizes the need to use low GWP substitutes as well as the most energy efficient equipment available.  This is critical for maximizing the climate benefits of the accelerated HCFC phase-out.

**5. What are funded by the Multilateral Fund under the Montreal Protocol?**

The Multilateral Fund for the Implementation of the Montreal Protocol provides funds to help developing countries comply with their obligations under the Protocol to phase out the use of ozone-depleting substances (ODS) at an agreed schedule. ODS are used in refrigeration, foam extrusion, industrial cleaning, fire extinguishing and fumigation. Countries eligible for this assistance are those with an annual per capita consumption of ODS of less than 0.3 kg a year, as defined in Article 5 of the Protocol. They are referred to as [Article 5 countries](http://ozone.unep.org/Ratification_status/list_of_article_5_parties.shtml).

The Fund was the first financial mechanism to be borne from an international treaty. It embodies the principle agreed at the United Nations Conference on Environment and Development in 1992 that countries have a common but differentiated responsibility to protect and manage the global commons.

In 1986, industrialized countries consumed 86 per cent of the most important ODS, the chlorofluorocarbons (CFCs). They agreed to contribute to the Fund in order to help Article 5 countries achieve the Protocol's goals. Article 5 countries committed themselves to joining the global effort to restore the depleted ozone layer. This global consensus forms the basis of the operation of the Multilateral Fund that confines the liability of the Fund to costs essential to the elimination of the use and production of ODSs.

*An important aspect of the Fund is that it funds only the additional (the so-called 'incremental') costs incurred in converting to non-ODS technologies.*

Financial and technical assistance is provided in the form of grants or concessional loans and is delivered primarily through four 'implementing agencies': United Nation Environment Programme (UNEP), United Nations Development Programme (UNDP), United Nations Industrial Development Organization (UNIDO) and World Bank.

Up to 20 per cent of the contributions of contributing Parties can also be delivered through their bilateral agencies in the form of eligible projects and activities.

The Fund is replenished on a three-year basis by the donors. Pledges amount to US$ 2.7 billion for the period 1991 to 2010. The Fund provides finance for activities including the closure of ODS production plants and industrial conversion, technical assistance, information dissemination, training and capacity building aimed at phasing out the ODS used in a broad range of sectors*.*

The Fund Secretariat is based in Montreal, Canada, and comprises a small number of professional and support staff.

An example of funding criteria of the Multilateral Fund under Montreal Protocol:

HCFC phase-out in the refrigeration and air-conditioning manufacturing sector

* Incremental operating costs for projects in the air conditioning sub-sector will be considered at US $6.30/metric kg of HCFC consumption to be phased out at the manufacturing enterprise;
* Incremental operating costs for projects in the commercial refrigeration sub sector will be considered at US $3.80/metric kg of HCFC consumption to be phased out at the manufacturing enterprise;
* Consistent with decision 31/45 of the Executive Committee, incremental operating costs will not be considered for enterprises categorized under the refrigeration equipment assembly, installation and charging sub-sector;

**6. What is the opportunity for co-financing beyond the Multilateral Fund?**

The Multilateral Fund provides financial and technical assistance to the phase out of ODS which include CFCs and HCFCs that are both Ozone Depleting Substances and Greenhouse Gases. The funding level, however, is not enough to cover the part of activities for the purpose of energy efficiency improvement which has a closed relation with HCFC phase out as refrigerants or foams.

There are great opportunities for investment from other sources, either public or private, as co-funding for the purpose to improve the energy efficiency of refrigerators, air conditioners and chillers when non-ODS and low-GWP refrigerants will be used to substitute the HCFCs.

The co-funding investment will have good return in terms of the multiple benefits to the global ozone protection, climate change mitigation and energy saving in the relevant sectors.