

Considerations of leakage in:
AM0001 "Incineration of HFC 23 waste streams"
MGM International
7 de octubre de 2004

With a view to understanding leakage associated with CDM projects involving the destruction of HFC 23, the CDM EB has asked for input on:

- Possible impacts of such project activities on the supply and demand of HCFC 22.

There is concern that CDM projects involving the destruction of HFC 23 would generate revenues through the sale of CERs to the point that the production of HCFC 22 would be increased.

The Montreal Protocol to protect the ozone layer calls for a rapid elimination of CFCs which have high Ozone Depletion Potential (ODP), permitting a longer time frame for the elimination of HCFCs (including HCFC 22) since these gases contain relatively little chlorine and have low ODP. HFCs contain no chlorine and have zero ODP.

The time frame for phasing out CFCs and HCFCs is longer for less developed countries, denominated Article 5(1) countries in the Montreal Protocol.¹

HCFC 22 is used in packaged air-conditioning units where size of equipment and economy are important. It is suitable for air conditioning, and for low and medium temperature refrigeration.

It should be noted that (UNEP, 2003, p. 9):

“HCFCs are, and are likely to remain, important as “transitional substances” in the replacement of CFCs in refrigeration and air conditioning, insulating and integral skin foams, cleaning, and in specialty uses. They are also substitutes for halons in some fire protection applications.”

“HCFC-22 and HCFC-141b are, and will remain, the most significant HCFCs in use globally and particularly in Article 5(1) countries. The dominant uses for HCFCs in non-Article 5(1) countries have been in the refrigeration and insulation foam sectors. These have adopted HCFC-22 and HCFC-141b as primary refrigerants and blowing agents, respectively.”

These changes are reflected in the figure below.

¹ Article 5(1) states: “Any Party that is a developing country and whose annual calculated level of consumption of the controlled substances in Annex A is less than 0.3 kilograms per capita on the date of the entry into force of the Protocol for it ...”

Figure ES-1
HCFC Consumption Trends

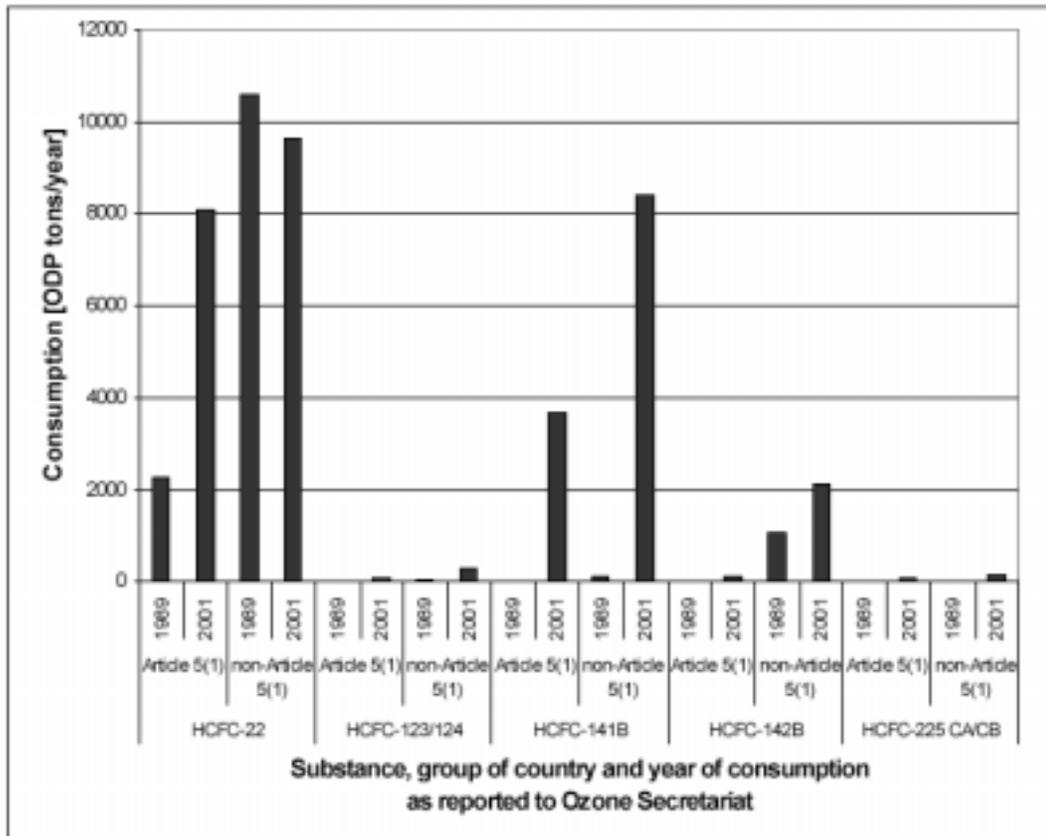


Figure showing changes in HCFC consumption from 1989 to 2001. (Source: UNEP, 2003).

Moreover (UNEP, 2003, p. 11):

“Future HCFC-22 consumption is linked heavily with the growth of the refrigeration and air conditioning industry in Article 5(1) countries – most notably in China.”

MGM concludes that increased consumption of HCFC 22 is a consequence of replacement of CFCs (with benefits in terms of reduced ozone depleting and global warming, since CFCs have also very high GWP).

CERs from the destruction of HFC 23 will slightly reduce production costs of HCFC 22, making those plants who participate in the CDM more competitive compared to those who do not. Investment and operating costs for HCFC 22 clearly demonstrate that CER benefits are not big enough to provide incentives to manufacturers to produce HCFC 22 and vent it, just for the CER revenues from HFC 23 incineration. This notion should be discarded from the outset.

Thus CER revenues would only provide a reduction in the cost of producing HCFC 22. This will probably mean that the market share of HCFC 22 manufacturers participating in CDM will increase at the expense of those that do not participate.

Thus, the competitive advantage of the CDM-participant manufacturers will mean that not only less HCFC 22 is being manufactured elsewhere, but indeed less HFC 23 is being released into the atmosphere elsewhere. Thus, rather than increasing GHG emissions elsewhere, the CDM project implementation will indeed *reduce* GHG emissions elsewhere.

A fundamental assumption here is that the CER revenues will not induce manufacturers to increase HCFC 22 production to such a point as to reduce its price leading to an increase in demand.

To validate this assumption, let us consider the case of CFC replacement following the implementation of the Montreal Protocol. This replacement required the use of more expensive refrigerants and foam blowing agents. Despite initial resistance from some sectors, this did not lead to a sharp decline in the demand for refrigerators and air conditioners. This is because refrigerant cost makes up a small part of total production costs, and demand is determined by purchasing power and other economic conditions of the market.

Thus, we should not expect the demand for package air conditioners and small heat pumps to shoot up just because there is possibility that HCFC 22 costs may fall. Thus, we believe it is reasonable to conclude that global demand for HCFC 22 will go up as a result of the CERs.

And, as we have argued, the CER incentive will mean that more of the HCFC demand will be met by plants that are incinerating HFC 23, thus contributing to climate change mitigation.

Finally, we strongly consider that placing an already approved methodology on hold while important business decisions are made, impacts the reliability of CDM as a market tool to curve the negative effects of global warming.

Reference (*provides a market study of HCFCs*)

- UNEP, 2003. HCFC Task Force Report, Report of the UNEP Technology and Economic Assessment Panel, May 2003.