

HCFCs are viewed by industry and by most policy-makers as valuable in an orderly transition from CFCs to a time when non-halogenated substances would dominate most end uses. A few HCFCs are already in use (as in producing rigid foams) and several HCFCs are undergoing accelerated toxicity testing. Results of the long-term toxicity tests are expected by 1992 or 1993. Anticipating favourable results, several companies are converting or constructing plants to produce these HCFCs. Du Pont is constructing a plant in Maitland, Ontario, to produce an HCFC with foam-blowing applications. HCFCs are needed to allow the present and prospective deadlines of the Montreal Protocol to be met while not disrupting industrial processes or incurring overly large economic burdens. It is essential, however, to view HCFCs as bridging chemicals only while industry eliminates CFCs and moves towards the use of substances that have even less potential for damage.

HCFCs have ODPs ranging from 0.02 to 0.10 and GWPs from 0.0064 to 0.11, with most GWPs between 0.02 and 0.10. Given these ranges, every effort should be made to ensure that the HCFC chosen for a specific purpose is the least harmful available. Additionally, there should be an appropriate incentive to ensure continued research and development of harmless substitutes for HCFCs.

B. Technical Feasibility of CFC Elimination and Substitution

A Technology Review Panel under the auspices of the United Nations Environment Program (UNEP) has determined that it is possible to reduce the use of the five controlled CFCs by 95% by the year 2000. This projection is based on current technology, but prospective technological advances should facilitate the complete elimination of the five controlled CFCs before 2000. The use of CFCs as a refrigerant is expected to persist, due to the continuing use of equipment that employs CFCs and/or those that will be produced before alternatives are available, and which cannot use "drop-in" substitutes. Automotive air conditioning systems will be the principal use, with their substantial release of CFCs at present due to insufficiently sealed systems and inadequate recovery/recycle technologies for maintenance.

Changes in products and practices, such as using hot water instead of CFCs to wash microchips, will account for a large reduction in CFC use. HCFCs are projected to account for 30% of CFC demand by 2000, and HFCs for another 9% (Figure 5), resulting in an anticipated overall reduction in ODP of 90%. There is potential for further reduction in ODP and GWP by carefully selecting which HCFC or HFC should replace a CFC for a specific use. According to the Technology Review Panel, which relies on data from industry, the World Meteorological Organization (WMO) and the United States Environmental