Adjustments to the Montreal Protocol

with regard to Annex C, Group I Substances (Hydrochlorofluorocarbons)

Decision XIX/6 of the 19th Meeting of Parties to the Montreal Protocol

Background

At the 19th Meeting of the Parties (MOP) to the Montreal Protocol (September 17-21, 2007), the Parties agreed to adjust their commitments related to the phase out of HCFCs. The HCFC control commitments of non-Article 5 (developed country) Parties and Article 5 (developing country) Parties agreed at the 19th Meeting are as follows :

Adjustment to the Montreal Protocol with regard to Annex C Group 1 substances (Hydrochlorofluorocarbons)

" The Parties agree to accelarate the phase out of production and consumption of Hydrochlorofluorocarbons of (HCFCs), by way of an adjustment in accordance with para 9 of Article 2 of the protocol Montreal and as contained in annex III to the report of the Nineteenth Meeting of the Parties, on the basis of the following:

1. For Parties under paragraph 1 of Article 5 of the Protocol (Article 5 Parties), to choose as the average of the 2009 and 2010 levels of, respectively, consumption and productions; and

2. To freeze, at that baseline level, consumption and production in 2013;

3. For Parties operating Article 2 of the Protocol (Article 2 Parties), to have completed the accelerated phase-out of production and consumption in 2020, on the basis of the following reduction steps:

(a) By 2010 of 75 per cent;
(b) By 2015 of 90 per cent;
(c) While allowing 0.5 per cent for servicing the period 2020-2030;

4. For Article 5 Parties to have completed the accelerated phase-out of production and consumption in 2030, on the basis of the following reduction steps:

(a) By 2015 of 10 per cent;
(b) By 2020 of 35 per cent;
(c) By 2025 of 67.5 per cent;
(d) While allowing for servicing an annual average of 2.5 per cent during the period 2030-2040;

5. To agree that the funding available through the Multilateral Fund for the Implementation of the Montreal Protocol in the upcoming replenishment shall be stable and sufficient to meet all agreed incremental costs to enable Article 5 Parties to comply with the accelerated phase-out schedule both for production and consumption sectors as set out above, and based on that understanding, to also direct the Executive Commitee of the Multilateral Fund to make the necessary changes to the eligibility criteria related to the post-1995 facilities and second conversions;

6. To direct the Executive committee, in providing technical and financial assistance, to pay particular attention to Article 5 Parties with low volume and very low volume consumption of HCFCs;

7. To direct the Executive Committee to assist Parties in preparing their phase-out management plans for an accelerated HCFC phase-out;

8. To direct Executive Committee, as a matter of priority, to assist Article 5 Parties in conducting surveys to improve reliability in establishing their baseline data on HCFCs;

9. To encourage Parties to promote the selection of alternatives to HCFCs that minimize environmental impacts, in particular impacts on climate, as well as meeting other health, safety and economic considerations;

10. To request Parties to report regularly on their implementation of paragraph 7 of Article 2F of the Protocol;

11. To agree that the Executive Committee, when developing and applying funding criteria for projects and programmes, and taking into account paragraph 6, give priority to cost-effective projects and programme which focus on, inter alia

(a) Phase-out first those HCFCs with higher ozone-depleting potential, taking into account national circumstances;
(b) Substitutes and alternatives that minimize other impacts on the environment, including on the climate, taking into account global-warming potential, energy use and other relevant factors;
(c) Small and medium-size enterprises;

12. To agree to address the possibilities or need for essential use exemptions, no later than 2015 where this relates to Article 2 Parties, and no later than 2020 where this relates to Article 5 Parties;

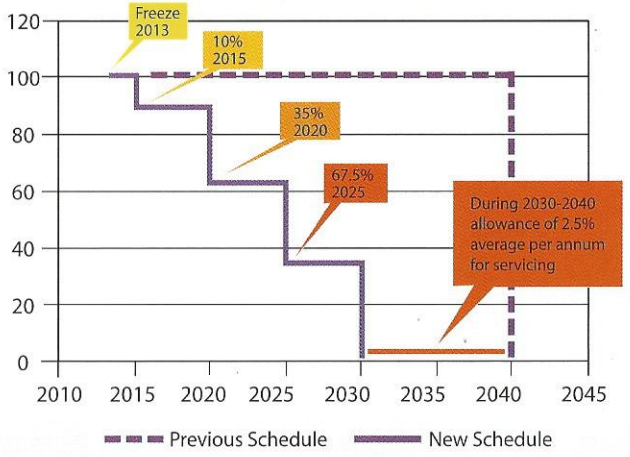
13. To agree to review in 2015 the need for the 0.5 per cent for servicing provided for in paragraph 3, and to review in 2025 the need for the annual average of 2.5 per cent for servicing provided for in paragraph 4 (d);

14. In order to satisfy basic domestic needs, to agree to allow for up to 10% of baseline levels until 2020, and, for the period after that, to consider no later than 2015 further reductions of production for basic domestic needs;

15. In accelerating the HCFC phase-out, to agree that Parties are to take every practicable step consistent with Multilateral Fund programmes, to ensure that the best available and environmentally-safe substitutes and related technologies are transferred from Article 2 Parties to Article 5 Parties under fair and most favourable conditions"

DEPARTMENT OF ENVIRONMENT
MINISTRY OF NATURAL RESOURCES & ENVIRONMENT
Level 1-4, Podium 2 & 3, Wisma Sumber Asli
No. 25, Persiaran Perdana, Presint 4
Pusat Pentadbiran Kerajaan Persekutuan
62574 Putrajaya, Malaysia
Tel : +603 8871 2000 Fax : +603 8888 9987 / 4800
Website : www.doe.gov.my

The new schedule of targets of phase-out of HCFCs to be achieved by Article 5 Parties is as follow:



HCFCs not only deplete ozone layer but also contribute to global warming. This accelerated phase-out of HCFCs will therefore provide dual benefits for the ozone layer and climate system. The Ozone Depleting Potential (ODP) and the Global Warming Potential (GWP) of HCFCs that are significantly used in today's markets are given below in Table 1.

Table 1 ODP and GWP values of commonly used HCFCs

HCFC	International Union of Pure and Applied Chemistry (IUPAC) name	ODP	GWP
HCFC-22 (R-22)	Chlorodifluoromethane ($CHClF_2$)	0.055	1810
HCFC-123 (R-123)	2,2-Dichloro-1,1,1-trifluoroethane ($CHCl_2CF_3$)	0.02	77
HCFC-124 (R-124)	2-Chloro-1,1,1,2-tetrafluoroethane ($CHClF-CF_3$)	0.02	609
HCFC-141b (R-141b)	1,1-Dichloro-1-fluoroethane (CCl_2FCH_3)	0.11	630
HCFC-142b (R-142b)	1-Chloro-1,1-difluoroethane ($CClF_2CH_3$)	0.065	2270
HCFC-225ca (R-225ca)	Dichloropentafluoropropane ($CF_3CF_2CHCl_2$)	0.025	120
HCFC-225cb (R-225cb)	Dichloropentafluoropropane (CF_2ClCF_2CHClF)	0.033	586

Applications of Hydrochlorofluorocarbons (HCFCs) and blends containing HCFCs

The main products and applications of HCFCs and blends containing HCFCs used in foam, refrigeration and air conditioning, fire fighthing and solvent applications are as follows :

Foam

Rigid polyurethane foams


Sandwich panels

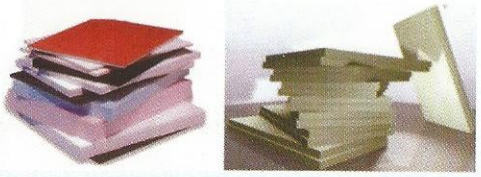

Boards and Blocks


Spray foam


Pipe insulation

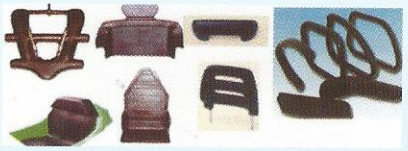

Pipe support

Extruded polystyrene or XPS foams


Boards for building insulation

Integral skin polyurethane foams


Automative components


Furniture components

Microcellular foams


Engineering components


Shoe soles

Domestic and commercial refrigeration

Domestic appliance


House-hold refrigerators and freezers (in insulation foam)

Commercial appliance


Display cabinet


Vending Machine

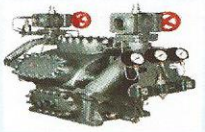

Visi-cooler


Chest Cooler

Industrial refrigeration


Hermetic compressors


Air handling units

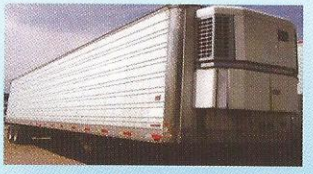

Open compressors


Cold storages


Industry process chilling


Process chilling

Transport refrigeration


Refrigerated trucks and trailers


Reefer containers

Air conditioning

Residential air conditioning

Wall mounted split air conditioners

Window air conditioners

Ceiling floor air conditioners

Air conditioning compressors

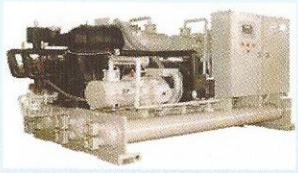
Commercial air conditioning

Heat pump

Unitary air conditioners

Packaged air conditioning units for medium sized commercial establishments such as shops and offices

Industrial air conditioning

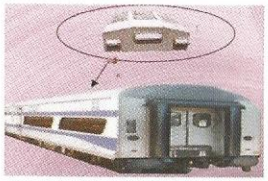


Screw chillers

Reciprocating chillers

Central air conditioning chillers

Transport air conditioning



Air conditioning systems for buses / coaches, railway coaches, truck cabs etc

Firefighting

Portable fire-extinguishers

Central fire-extinguishing systems

Solvents

Precision cleaners

Batch cleaners

Source : **Fact Sheet No. 25 Applications of Hydrochlorofluorocarbons (HCFCs) and blends containing HCFCs, UNEP**