



## Interactions with Other Policy Measures

**Background:** The Kigali Amendment to the Montreal Protocol specifically targets the use of high GWP HFC refrigerants and will lead to an 85% reduction in the production and consumption of HFCs. This new policy interacts with a number of other existing policy measures. In this Fact Sheet the most important interactions are described; in particular interactions with:

- 1) The phase-out of HCFCs
- 2) Climate change policies
- 3) Energy efficiency policies
- 4) Safety legislation.

During the development of a national HFC phase-down strategy (see [Kigali Fact Sheet 6](#) for further details), National Ozone Officers and other government officials responsible for the Kigali Amendment need to ensure that they engage with the government and private sector stakeholders who are involved in the implementation of these other policies.

**HCFC phase-out:** During the development of a national HFC phase-down strategy, it is very important to understand the interaction of the Kigali Amendment with the plans for the ongoing phase-out of HCFCs under the Montreal Protocol.

All Parties already have legally binding commitments to phase-out consumption of HCFCs. In the case of non-Article 5 countries the HCFC phase-out is already virtually complete. However, Article 5 (A5) countries have only recently begun the phase-out of HCFCs. The phase-out schedule for HCFCs in A5 countries is illustrated in the chart. In the period 2015 to 2019 there is a 10% cut from the HCFC baseline, followed by a 35% cut between 2020 and 2024. In most A5 countries HCFC consumption is currently still high and is not scheduled to fall substantially until after 2024.



Almost all A5 countries have an HCFC phase-out management plan (HPMP) which provides a strategy for switching end user markets away from using HCFCs. In many markets, the non-ODS alternative identified in the HPMP is a high GWP HFC. There is potential for conflict between the existing plans to phase-out HCFCs and the new plans to phase-down the use of high GWP HFCs. It is strongly recommended that the new planning process includes a re-assessment of the timing of HCFC phase-out initiatives to ensure that costs are minimised and that the environmental benefits of both policies are maximised.

As discussed in [Kigali Fact Sheet 13](#), most non-A5 countries have undertaken a 2-step process, first moving from HCFCs to high GWP HFCs and now doing a second conversion to lower GWP alternatives. This was not the best way forward in terms of costs and environmental benefits, but it was logical given the much earlier timetable for phase-out of HCFCs<sup>1</sup> and the availability of non-ODS alternatives at that time. This situation has changed significantly and Article 5 countries can “leap-frog” the high GWP stage and move directly from HCFCs to lower GWP alternatives. In some situations this may require a short delay in the phase-out of HCFCs (see Box 1).

<sup>1</sup> Non-Article 5 countries had their first big cut in HCFC consumption in 2004. At that time the most cost effective HCFC alternatives in many end-use markets were high GWP HFCs.

### Box 1: Extract from Montreal Protocol Decision XXVIII/2 (Kigali Amendment)

The importance of the interaction between these policies is recognised in the following extracts from the Decision made in Kigali. This indicates that revisions to HPMP schedules for HCFC phase-out may be acceptable if they allow leap-frogging of the high GWP HFC stage:

*To acknowledge the linkage between the HFC and HCFC reduction schedules .... and the preference to avoid transitions from HCFCs to high-GWP HFCs ....;*

*To also acknowledge these linkages with respect to certain sectors, in particular industrial process refrigeration, ... and to be willing to provide flexibility, if no other alternatives are available, in cases where:*

- a) *HCFC supply may be unavailable from existing allowable consumption...*
- b) *it would allow for a direct transition at a later date from HCFCs to low-GWP or zero-GWP alternatives;*

**Climate Change Policies:** The Kigali Amendment has been put in place to achieve cost-effective greenhouse gas (GHG) reductions. The HFC emission reductions will make a small but useful contribution to each country's target to reduce GHG emissions under the 2015 Paris Agreement of the UN Framework Convention on climate change. It has been estimated that the Kigali Amendment could result in as much as 0.5 degrees centigrade reduction in global temperatures compared to business-as-usual. The National Ozone Units should coordinate closely with the broader climate change policy unit and ensure that there is recognition of any HFC emission reductions in the country's target for GHG emission reductions, via the Intended Nationally Determined Contribution (INDC).

**Energy Efficiency Policies:** It is very important to recognise the interaction between measures under the Kigali Amendment and national energy efficiency policies. The largest user of HFCs are the wide range of different appliances used for refrigeration, air-conditioning and heat pumps (RACHP). These appliances are also significant users of electricity. The electricity used is a dominant part of the lifecycle cost of all RACHP systems. It is also a significant source of GHG emissions. RACHP systems have two distinct types of GHG emission:

- **Direct GHG emissions** created by leakage of refrigerants with a high GWP, during normal operation, maintenance and servicing and at equipment end-of-life.
- **Indirect GHG emissions** created at the power stations supplying the electricity.

It is the indirect emission that is dominant for most RACHP equipment – even if high GWP refrigerants are used, providing leakage rates are not excessively high. When HCFCs and high GWP HFCs are replaced by lower GWP alternatives it is essential to have energy efficiency policies in place that ensure equal or, preferably, improved energy efficiency. If this does not happen there is a risk that the reduction in HFC usage could lead to an “environmentally perverse” result where the total GHG emissions actually go up. Using high GWP HFCs such as R-404A in supermarket refrigeration systems and R-410A in small air-conditioning systems is no longer the optimum choice in terms of energy efficiency. Lower GWP alternatives that are already used in some non-Article 5 countries will deliver improved efficiency, resulting in lower electricity costs and lower GHG emissions.

**Safety Legislation:** Some of the low GWP alternatives to HCFCs and HFCs are flammable. The issue of flammability is discussed in [Kigali Fact Sheet 10](#). Some international safety codes and national safety legislation create barriers to the widespread uptake of flammable refrigerants. These barriers are discussed in [Kigali Fact Sheet 11](#). A significant effort is being made at international level to update international safety codes to allow more widespread use of flammable refrigerants whilst also maintaining a high level of safety. It will be important for each party to identify whether any barriers exist at national level e.g. national safety legislation or regional / municipal fire safety standards. National Ozone Officers need to engage with the government department responsible for such legislation to try and ensure rapid harmonisation of national legislation with updated international safety codes.