

HFC Baselines and Phase-down Timetable

Background: The Kigali Amendment specifies how to calculate the baseline for HFC consumption and production and the timetable of HFC¹ phase-down steps. There are four different country groupings, each with a different baseline and phase-down timetable. This Fact Sheet provides a summary of the timetables and explains how to calculate the HFC baseline.

Country Groups: The Montreal Protocol Parties are split into four Kigali Amendment groups:

Non-A5, earlier start	Most non-Article 5 countries
Non-A5, later start	Russia, Belarus, Kazakhstan, Tajikistan, Uzbekistan
A5, Group 1	Most Article 5 countries
A5, Group 2	Bahrain, India, Iran, Iraq, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia, UAE

HFC Baseline: The baseline for each country group is summarised below. The same baselines apply to consumption and production. All data is measured in tonnes CO₂e (see [Kigali Fact Sheet 3](#) for details of how to calculate tonnes CO₂e for different HFCs and HCFCs). The baseline is made up of two components:

- the average annual HFC quantity consumed (or produced) during a 3-year baseline period
- a proportion of the baseline for the control of HCFCs under the Montreal Protocol

Two components are required because A5 countries are only in the early stages of HCFC phase-out.

	Non-A5, earlier start	Non-A5, later start	A5 Group 1	A5 Group 2
HFC component Average HFCs in period	2011 to 2013		2020 to 2022	2024 to 2026
HCFC component % of HCFC baseline	15%	25%	65%	

The HCFC baselines referred to above are defined in the Montreal Protocol as:

- 1) For all Article 5 countries: average HCFC consumption in 2009 and 2010
- 2) For all non-Article 5 countries: HCFC consumption in 1989 plus 2.8% of CFC consumption in 1989

To calculate the baseline, consumption and production data is required for each individual type of HFC and HCFC fluid used in the appropriate base years. In the example at right, the baseline is calculated to be 33.7 million tonnes CO₂e

Example Baseline Calculation for a fictional Country in A5 Group 1

Fluid	Average annual tonnes	GWP	Tonnes CO ₂ e (000s)
	2020 to 2022		
HFC-134a	5 000	1 430	7 150
R-404A	2 500	3 922	9 805
R-410A	3 300	2 088	6 890
	2009 to 2010		
HCFC-22	8 000	1 810	14 480
HCFC-141b	1 000	725	725
Total Baseline, thousand tonnes CO₂e HFC component + 65% HCFC component			33 730

¹ See [Kigali Fact Sheet 14](#) for a glossary of all acronyms used

HFC Phase-down Timetables:

The HFC phase-down steps for each country group are summarised in the table and graph below. The same steps apply to both consumption and production of HFCs. All data is measured in tonnes.

	Non-A5 Countries		A5 Countries	
	Earlier start	Later start	Group 1	Group 2
Freeze	-	-	2024	2028
5% reduction	-	2020	-	-
10% reduction	2019	-	2029	2032
20% reduction	-	-	-	2037
30% reduction	-	-	2035	2042
35% reduction	-	2025	-	-
40% reduction	2024	-	-	-
50% reduction	-		2040	-
70% reduction	2029		-	-
80% reduction	2034		2045	-
85% reduction	2036		-	2047

