



Draft Fact Sheet April 20, 2015

India Proposes HFC Phase-Down Amendment Proposal to the Montreal Protocol

The Indian government recently took a leading role in global efforts to address climate change by proposing a hydrofluorocarbon (HFC) phase-down amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol). The proposed amendment, put forward on 16th April, 2015, would phase down *production and consumption* of these powerful heat-trapping gases.

The Indian proposal joins HFC phase-down proposals put forward by the North American countries, the European Union, Micronesia, and the African Group. Issues related to an HFC phase-down will be discussed at the 35th Session of the Open-Ended Working Group (OEWG) of the Parties to the Montreal Protocol, starting on 22nd April 2015 in Bangkok. An HFC amendment could be agreed at the November 2015 Meeting of the Parties in Dubai.

The Indian proposal is available here: <http://conf.montreal-protocol.org/meeting/oewg/oewg-35/presession/default.aspx>

Key features of India's proposed amendment are:

- A list of 19 HFC substances divided into four groups.
- Controls on HFCs starting in 2016 for developed countries (Non-Article 5 Parties) and 2031 for developing countries (Article 5 Parties), allowing a 15-year grace period.
- Multilateral Fund support for full conversion costs for Article 5 Parties.
- Maintaining the authority under the UNFCCC/Kyoto Protocol to account for and report on HFC emissions.
- Licensing of HFC production, import and export, reporting requirements, and limitations on HFC imports and exports to non-Parties.

India's proposal with regard to the Multilateral Fund (MLF) differs from other amendment proposals. Where other proposals call for covering agreed incremental costs (the approach currently used under the Protocol), India proposes including MLF payment for full conversion costs. These are defined to include civil, electrical, and mechanical aspects of the facility; lost profits and full conversion costs for HFC production plants, manufacturing equipment, and operating costs for 5 years; training, technicians, awareness, tools, and payment for premature retirement of equipment; and double conversion costs wherever transitional technologies are to be deployed.

HFCs were introduced to replace ozone-depleting substances (ODSs) in applications including refrigeration, air conditioning, fire protection and technical and medical aerosol products, but they are no longer necessary in most applications. The Indian proposal exempts

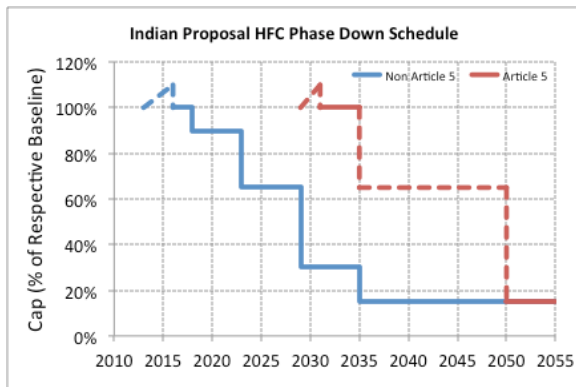
HFC production and consumption for metered dose inhalers (MDIs) and other medical applications, and for feedstock applications.

As the global consensus builds towards phasing down HFCs through an amendment to the Montreal Protocol, this week’s Montreal Protocol meeting is an important opportunity to identify the key issues that need to be resolved through negotiation. These include:

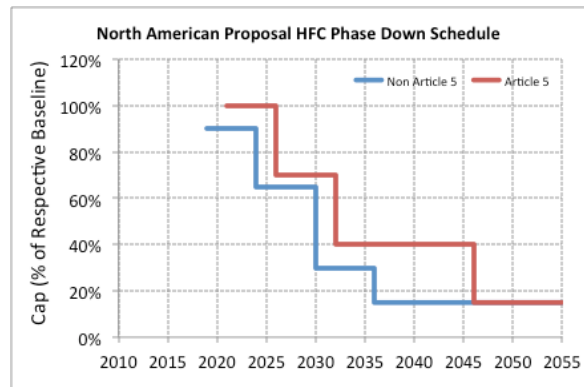
- List of chemicals and possible chemical groupings for HFCs
- Calculation of baseline for Article 5 and Non-Article 5 Parties
- Timetable for freeze and reduction of production and consumption of HFCs
- Basis of financing: agreed incremental costs or full conversion costs; and the start date for funding

The following charts and table summarize key aspects of the amendment proposals put forward for the Montreal Protocol.

PHASE DOWN SCHEDULES COMPARISON



Source: UNEP (2015) (India)



Source: UNEP (2015) (North American)

PROPOSAL ELEMENT COMPARISON

KEY ELEMENTS	INDIA PROPOSAL	NORTH AMERICAN PROPOSAL	MICRONESIA PROPOSAL (2014)	EU DISCUSSION PAPER (2014)	AFRICAN GROUP
Listing of HFCs	19 HFCs divided into four groups	19 HFC substances	21 HFC substances, including some HFOs	HFCs generally	All HFCs
Grace Period for Article 5 Parties	15 years	Up to 10 years	To be determined by the Parties	Up to 15 years	Yes, with availability confirmed by TEAP, addressing common but differentiated responsibilities
Non-Article 5 Parties Baseline	GWP weighted average of 2013-15 HFCs plus 25% of the Annex C Group I (HCFCs) baseline for Non-Article 5 Parties	100% average HFC and 75% HCFC consumption and production for 2011-13	2014-2016 average HFC and HCFC production and consumption	2009-2012 HFC production and consumption + 15% 1989 HCFC baseline	Yes, appropriate baseline
Non-Article 5 Parties Control Measures for Consumption and Production of HFCs	2016 – 100% 2018 – 90% 2023 – 65% 2029 – 30% 2035 – 15%	2019 – 90% 2024 – 65% 2030 – 30% 2036 – 15%	2017 – 85% 2020 – 70% 2023 – 55% 2026 – 45% 2029 – 30% 2032 – 15% 2035 – 10%	2017 – 85% 2018 – 65% 2021 – 45% 2024 – 30% 2027 – 25% 2030 – 15%	Yes, with a freeze date and availability confirmed by TEAP
Article 5 Parties Baseline	GWP weighted average of 2028-30 HFCs + 32.5% of Annex C Group I (HCFCs) baseline for Article 5 Parties	100% average HFC and 50% HCFC consumption and production for 2011-13	To be determined by the Parties	<i>Consumption:</i> 100% average HFC and HCFC in 2015-2016 <i>Production:</i> 100% HFC production in 2009-2012 + 70% of HCFC in 2009-2010	An appropriate baseline to be determined by Parties
Article 5 Parties Control Measures for Consumption and Production of HFCs	<ul style="list-style-type: none"> • 2031 – 100% • 2050 – 15% • Phase down steps are to be decided 5 years in advance for the next 5-year period 	<ul style="list-style-type: none"> • 2021 – 100% • 2026 – 70% • 2032 – 40% • 2046 – 15% 	To be determined by the Parties	<ul style="list-style-type: none"> • 2019 freeze in consumption and production of HCFC/HFC combined • 2045 – 85% reduction in production 	Yes, with availability confirmed by TEAP, addressing common but differentiated responsibilities. Exceptional measures for countries with high ambient temperatures
Multilateral Fund Financing	Yes Full conversion costs	Yes Incremental costs	Yes Incremental costs	Yes Incremental costs	Yes, sufficient and unconditional support
HFC Emissions Reduction by 2050	Unspecified	84 billion tonnes CO ₂ eq.	100 billion tonnes CO ₂ eq.	Unspecified	Unspecified
Impact on UNFCCC/KP	No impact: Complementary	No impact: Complementary	No impact: Complementary	No impact: Complementary	No impact: Complementary
Emissions Reporting	Yes	Yes	Yes	Data collection	
Import/Export Licensing	Yes	Yes	Yes	Unspecified	Yes
Relationship to HCFC Phase Out	Does not alter HCFC schedule; continued use of HFCs where no low-GWP alternatives exist	Recognizes HCFC use is ongoing, but does not alter phase out schedule	Recognizes HCFC use is ongoing	Factors HCFC into calculation and does not alter HCFC phase out schedule	
Limits HFC-23 By-product Emissions	Comprehensive R&D efforts for conversion products, but no limits	Yes	Yes	Unspecified	
Bans on Trade in HFCs with Non-Parties	Yes	Yes	Yes	Unspecified	

CHEMICAL SUBSTANCE GROUPINGS UNDER VARIOUS PROPOSALS

	HFC-134	HFC-134a	HFC-143	HFC-245fa	HFC-365mfc	HFC-227ea	HFC-236cb	HFC-236ea	HFC-236fa	HFC-245ca	HFC-43-10mee	HFC-32	HFC-125	HFC-143a	HFC-41	HFC-152	HFC-152a	HFC-161	HFC-1234yf (HFO-1234yf)	HFC-1234ze (HFO-1234ze)	HFC-23 (Group or Annex)
India	1	1	1	1	1	2	2	2	2	2	2	3	3	3	4	4	4	4	-	-	G
North America	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	2
Micronesia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
European Union	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

India's proposal signals that the pace of international engagement on HFCs is quickening. An amendment to phase down HFCs under the Montreal Protocol will give Article 5 Parties access to technology and financial support under a treaty with a proven track record and a functioning framework. An amendment can and should be agreed this year, at the Conference of the Parties in November in Dubai.

Fact sheet Prepared by Natural Resources Defense Council (NRDC), Council on Energy, Environment and Water (CEEW) and Institute for Governance and Sustainable Development (IGSD), with contributions from Stephen Seidel

Publications For Further Reading

The full Indian proposal is available here:

<http://conf.montreal-protocol.org/meeting/oewg/oewg-35/pre-session/default.aspx>

Primer on Hydrofluorocarbons, March 2015,

<http://www.igsd.org/documents/HFCPrimer20March25.pdf>

Reducing Stress on India's Energy Grid: The Power Sector Benefits of Transitioning to Lower Global Warming Potential and Energy Efficient Refrigerants in Room Air Conditioners, March 2015

<http://www.nrdc.org/international/india/files/india-energy-grid-alternative-refrigerants-IB.pdf>

Energy Efficiency Gains with Lower Global Warming Impact: A Profile of Air Conditioners Using R-290, November 2014

<http://ceew.in/pdf/ceew-nrdc-a-profile-of-air-conditioners-using-r290-30nov14.pdf>

Energy Efficiency Gains with Lower Global Warming Impact: A Profile of Air Conditioners Using R-32, November 2014

<http://ceew.in/pdf/ceew-nrdc-a-profile-of-air-conditioners-using-r32-30nov14.pdf>

Frequently Asked Questions on HFCs, October 2014

<http://www.nrdc.org/international/india/files/air-conditioner-efficiency-FS.pdf>

Modelling Long Term HFC Emissions from India's Residential Air-Conditioning Sector, July 2014

<http://ceew.in/pdf/CEEW-Final-Room-AC-Paper%2014Jul14.pdf>

Update on the HFC Phase-Down in Mobile Air Conditioning: Global Automakers Moving to HFO-1234yf, Except Some German Automakers Waiting for CO2 Systems, March 2014

http://www.igsd.org/documents/India_MAC_Draft_Final11MarchCEEWIGSDNRDClogos_002.pdf

Cooling India with Less Warming: The Business Case for Phasing Down HFCs in Room and Vehicle Air Conditioners, December 2013

<http://www.nrdc.org/international/india/air-conditioner-efficiency.asp>