21st Conference of the Parties (CoP21) to the United Nations Framework Convention on Climate Change (UNFCCC)

30 November - 11 December 2015

BRIDGING THE EMISSIONS GAP

With an HFC amendment under Montreal Protocol

In the build-up to 21st Conference of the Parties (CoP21) to the United Nations Framework Convention on Climate Change (UNFCCC), the Parties to the Montreal Protocol launched formal negotiations on one of the largest, fastest and most cost-effective global climate mitigation measures available – the phase down of hydrofluorocarbons (HFCs).

In a landmark decision in November, the 27th Meeting of the Parties (MoP) to the Montreal Protocol concluded with consensus on the 'Dubai Pathway on HFCs' in which Parties agreed to "work within the Montreal Protocol to an HFC amendment in 2016." [1]

With production and consumption of HFCs rapidly increasing, the hard-earned climate benefits of eliminating ozone-depleting substances (ODS) under the Montreal Protocol – estimated to be up to 135 billion tonnes (Gt) of carbon-dioxide equivalent (CO_2e) from 1990-2010 – are being reversed.[2] A global deal to phase down HFCs would prevent 100 Gt CO_2e HFC emissions by 2050[3] with up to an additional 100 Gt CO_2 emissions through potential energy efficiency improvements,[4] offering much-needed near-term climate protection.

Around the world, the vision of a future without HFCs is becoming a reality as governments and major corporations move ahead with plans to eliminate their use. Industrial sectors once heavily reliant on HFCs are now embracing natural refrigerants and other technologies with low global warming potential (GWP).

What are hydrofluorocarbons and how are they being addressed?

HFCs are primarily used in refrigeration, air conditioning and foams in sectors where their precursors, ODS, have been regulated by the Montreal Protocol. HFCs are not potent ODS but powerful greenhouse gases with GWPs hundreds to thousands of times greater than CO_2 and are included in the basket of greenhouse gases under the Kyoto Protocol. As HFCs have shown the fastest emissions growth of any class of greenhouse gas over the past two decades – a trend projected to accelerate – the Montreal Protocol has decided it is time for them to be subject to a global phase-down agreement.[5]

HFCs first came under the scrutiny of the Montreal Protocol in 2009 when the Federated States of Micronesia and Mauritius submitted an amendment proposal to regulate HFC production and consumption under the Montreal Protocol. Since then, additional Parties have submitted amendment proposals, including the United States, Canada and Mexico; the European Union; and India, while almost 100 other countries signed declarations offering support for the regulation of HFCs under the Montreal Protocol.[6]

Numerous national and regional regulations to control HFC use already exist, most significantly the EU HFC phase-down adopted in April 2014.[7] Since then, other major consuming nations have pushed forward with plans to reduce their HFC consumption; most notably, in May 2014, China announced it would eliminate emissions of 280 million CO_2e tonnes of HFC emissions by the end of 2020 under its 12th Five-Year Plan.[8] In addition, the US has also taken regulatory action through its Significant New Alternatives Program (SNAP).[9] Canada, Australia and California have outlined plans to phase down their HFC consumption.[10] Japan has proposed legislation to reduce domestic HFC emissions and is providing ¥5 billion (about €36.4 million) in subsidies for incentivising natural refrigerants.[11] These measures laid the foundation for consensus in 2015 to regulate HFCs under the Montreal Protocol.



environmental investigation agency

ABOUT EIA

The Environmental Investigation Agency (EIA) is an independent charity founded in 1984 to fight environmental crime. We have developed innovative and effective investigative methods for defending the environment, and seek lasting solutions to the problems we uncover. In three decades of work, EIA has amassed an impressive series of exposés and victories, from its key role in securing the 1989 international ivory trade ban and helping to bring in legislation to protect the world's precious forests to pushing whale meat off the menu in Japan. We have been involved in investigating and combatting illegal trade in ODS since the mid 1990s.

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GLOBAL CALL TO ACTION ON HFCs UNDER THE MONTREAL PROTOCOL

In the global movement to regulate HFCs under the Montreal Protocol, 2015 has been a watershed year. It began with four different amendment proposals submitted to the Parties for their consideration; on behalf of the North American countries; from a coalition of eight Island States; from the EU on behalf of its 28 Member States; and from India.[12] These formal amendments were supported by a Conference Room Paper (CRP) submitted by the 54 countries of the African Group proposing a process for moving the amendments forward.[13] In total, these submissions reflected the concrete support for an amendment to regulate HFCs under the Montreal Protocol from 93 governments representing around 3.5 billion people – roughly half the world's population – heading into the meetings of the Open-Ended Working Group (OEWG) to the Montreal Protocol earlier this year.

Over the course of several meetings the Parties agreed to a mandate and the establishment of a Contact Group to address HFC management and the proposed amendments, a critical first step in formally negotiating and agreeing to an amendment that will phase down HFCs under the Montreal Protocol.

Within the Contact Group, at MoP27 in Dubai in November, Parties devoted significant time to identifying the challenges and formulating solutions to the management of HFCs under the Montreal Protocol. Among other things, the Parties voiced general agreement on ways forward, including additional financial resources for HFC management to developing countries through the Multilateral Fund (MLF). Specifically, the Parties voiced agreement on the need to develop new guidelines for MLF financial support to developing countries, tackling such issues as second and third conversions of manufacturing enterprises, capacity building in developing countries and energy efficiency. Agreement was also reached on the need to provide flexibility to Parties in the implementation of an HFC phase-down as well as the need for an exemption process for countries where high-ambient temperature conditions prevail.[14]

This candid and constructive dialogue paved the way for the Parties to agree on the Dubai Pathway on HFCs, which sets out a series of additional meetings to lead to the adoption of an HFC amendment under the Montreal Protocol in 2016. This confidence and spirit of cooperation gives positive momentum to the climate negotiations at CoP21 in Paris, supporting multilateral action to deliver a climate change agreement.

HFC-FREE SYSTEMS AND ENERGY EFFICIENCY: A WIN-WIN SOLUTION FOR THE CLIMATE

A variety of climate-friendly, low-GWP HFC-free solutions are currently available, including carbon dioxide, air, water, ammonia, hydrocarbons and some 'not-in-kind' technologies such as solar, evaporative cooling and district cooling.[15] Transitioning to no- and low-GWP refrigerants immediately reduces direct emissions of HFCs and is therefore critical to mitigating climate change in the short term as HFCs stay in the atmosphere for less than 15 years on average. However, the benefits of HFC-free equipment and products extend beyond direct emissions reductions; energy efficiency gains from the use of alternative systems also enable end-users to use less energy and to cut their indirect CO_2 emissions, a crucial co-benefit of



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eliminating HFCs. The large reductions in energy use associated with the phase-out of ODS under the Montreal Protocol are well-documented.[16] With soaring demand for cooling in the emerging economies, aggregate energy efficiency gains from an HFC phase-out are likely to be far higher with current estimates suggesting energy efficiency gains from the transition away from HFCs could be upwards of 100 Gt CO_2.[17]

Retail chains that have made the switch from HFCs to climate-friendly natural refrigerants invariably report greater-than-anticipated efficiency gains. For example, Coop Schweiz in Switzerland has reported energy efficiency gains of 25-30 per cent from its new natural refrigerant systems, while UK supermarket chain Waitrose reports energy efficiency gains of 34.2 per cent since 2012 with its hydrocarbon-based systems.[18] In the air-conditioning sector, similar energy efficiency gains are being documented with the use of HFC-free technologies. In India, Godrej & Boyce has now sold over 100,000 high efficiency propane room air-conditioners and studies indicate that a switch from HFC-410A to propane air conditioners in the residential sector in India could reduce greenhouse gas emissions by 38 per cent by 2050, with 15 per cent of the reduction attributed to energy savings.[19]

COMMON BUT DIFFERENTIATED RESPONSIBILITIES UNDER THE MONTREAL PROTOCOL

Parties to the Montreal Protocol have differentiated responsibilities and obligations reflecting their respective financial and technological capabilities. During the phase-out of ODS, developed nations were required to implement regulations years in advance of the schedule which applied to developing nations and a similar grace period has been included within each of the four HFC amendment proposals.[20] This two-tier approach reduces the risk of adverse economic and fiscal impacts by creating extended and gentler transition schedules for developing countries. Developed nations are also obligated to contribute to financing the transitions by developing nations and to assist with technology transfer. Current proposals to phase down HFCs under the Montreal Protocol follow this successful pattern.[21]

Technology Transfer and Financial Support

The Montreal Protocol carries with it an obligation safeguarding developing nations' rights to benefit from technology transfer. This is enshrined in Article 10A of the Vienna Convention, which states: "Each Party shall take every practicable step, consistent with the programmes supported by the financial mechanism, to ensure:

a. *that the best available, environmentally safe substitutes and related technologies are expeditiously transferred to [developing country] Parties; and*

b. *that the transfers referred to in subparagraph (a) occur under fair and most favourable conditions.*[22]

The Montreal Protocol's Multilateral Fund (MLF) finances incremental costs incurred as a result of efforts to eradicate consumption and production of ODS. Developed countries have pledged that MLF funding would similarly be available to aid developing countries in financing a phase down of HFCs, and negotiations got underway at MoP27 in Dubai on more flexible MLF guidelines that would provide "additional financial resources" to assist developing countries to reduce HFC use following the adoption of an amendment. Since the first meeting of the MLF, the Executive Committee has approved and provided over $3 billion for the implementation of projects including industrial conversion, technical assistance, training and capacity building.[23] The Technology and Economic Assessment Panel (TEAP) of the Montreal Protocol estimates that MLF funding of at least $2.5-3.72 billion will be required to phase down HFCs.[24]

"Retail chains that have made the switch from HFCs to climate-friendly natural refrigerants invariably report greater-than-anticipated efficiency gains."

INDCs: NOT ENOUGH TO LIMIT GLOBAL WARMING TO 2º C

To date, more than 150 countries have submitted their national pledges, formally known as Intended Nationally Determined Contributions (INDCs) to the UNFCCC.[25]

However, the INDCs submitted so far do not reduce emissions sufficiently to limit warming to below 2ºC leaving the world on track for 2.7-3.7ºC warming (median chance, depending on modelling assumptions).[26]

Meanwhile, a global phase-down of HFCs under the Montreal Protocol would mean the avoidance of 0.5ºC warming by 2100.[27] This is a crucial and much-needed contribution to current global mitigation efforts.

CONCLUSION

With an ever-widening gap between what is required to limit global temperature rise to less than 2°C and existing mitigation pledges under the UNFCCC,[28] countries must seize every opportunity to curb greenhouse gas emissions. Enacting a global phase-down of HFCs under the Montreal Protocol would yield around 100 Gt CO_2e HFC emission reductions by 2050[29] with a doubling of emission reductions through potential energy efficiency improvements.[30]

Measures to eliminate HFCs are underway in many countries around the world while energy efficient, HFC-free technologies are expanding to meet market demands. What is now required is an ambitious international agreement to accelerate the pace of change and empower developing countries to leapfrog outdated and costly HFC technologies.

The Montreal Protocol, with its decades of success in phasing out the precursors to HFCs, is clearly the most appropriate and effective body to address the growing production and consumption of HFCs. The Parties to the Montreal Protocol have taken a critical first step toward this ambitious target by adopting the Dubai Pathway on HFCs and committing themselves to "work within the Montreal Protocol to an HFC amendment in 2016."

EIA urges all Parties to the UNFCCC to support these formal negotiations in 2016 under the Montreal Protocol in order to bring about a swift global agreement to address the consumption and production of HFCs.

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ENVIRONMENTAL INVESTIGATION AGENCY (EIA)

EIA - LONDON

62/63 Upper Street
London N1 ONY, UK
Tel: +44 (0) 20 7354 7960
Fax: +44 (0) 20 7354 7961
email: ukinfo@eia-international.org

www.eia-international.org

EIA - WASHINGTON, DC

PO Box 53343
Washington, DC 20009 USA
Tel: +1 202 483-6621
Fax: +1 202 986-8626
email: info@eia-global.org

www.eia-global.org

