Geneva Climate Change Conference

8-13 February 2015

SOLVING CLIMATE CHANGE:
Towards a global deal on HFCs in 2015

As the international community heads towards a landmark climate change agreement at CoP 21 in Paris, 2015 must also mark the year Parties to the Montreal Protocol launch formal negotiations on one of the largest, fastest and most cost-effective global mitigation measures to address short-term climate change available – the phase-out of hydrofluorocarbons (HFCs).

With production and consumption of HFCs rapidly increasing, the hard-earned climate benefits of eliminating high-GWP ozone-depleting substances (ODS) under the Montreal Protocol are being wiped out. A global deal to eliminate HFCs, which are among the most powerful global warming agents known to man, could prevent emissions of up to 200 billion tonnes of carbon dioxide-equivalent (CO_2e) by mid-century and prevent up to 0.5°C of planetary warming by 2100.

Around the world, the vision for 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 fluorinated gases are now embracing new HFC-free technologies which, in addition to their reduced direct (greenhouse gas) emissions, offer significant indirect mitigation benefits through energy efficiency improvements.

WHAT ARE HFCs AND HOW ARE THEY BEING ADDRESSED WORLDWIDE?

HFCs are refrigerants with global warming potentials (GWP) many hundreds to thousands of times higher than carbon dioxide.

For example, HFC-404A, an HFC commonly used in supermarket refrigeration, is almost 4,000 times more potent than CO_2.[1] This means that just 1kg of HFC-404A leaking into the atmosphere has an equivalent warming impact to four tonnes of CO_2.

2014 saw the introduction of landmark new regulations limiting the use of HFCs and encouraging the use of alternatives around the world. In April, the European Union (EU) adopted an ambitious Regulation to control fluorinated gases which entered into force in January this year.[2] In May China announced a new target to eliminate emissions of 280 million tonnes CO_2e of HFC emissions by the end of 2015 under the Twelfth Five-Year Plan.[3] The United States is also taking regulatory action under the Clean Air Act through its Significant New Alternatives Program (SNAP) and two proposed rules.[4] Canada has outlined plans to follow suit with regulation in line with the US approach,[5] while Japan has also proposed legislation to reduce domestic HFC emissions and is providing five billion yen in subsidies for incentivising natural refrigerants.[6] These measures all send a clear regulatory signal to businesses requiring them to rethink how they currently use HFCs and helping to open up a multi-billion dollar global market for HFC-free alternatives.

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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.

ACKNOWLEDGEMENTS

Report design by:
www.designsolutions.me.uk

February 2015

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INDIA AND CHINA SUPPORT ACTION ON HFCs

India and China, two of the fastest growing producers and consumers of HFCs, have acknowledged the urgency of the situation and the need for proactive measures to avoid locking their economies in to dead-end HFC technologies which are highly damaging to the climate system.

During the US Presidential visit to India in January 2015, President Barack Obama and Prime Minister Narendra Modi announced that their two countries had agreed to *"work together to make concrete progress this year towards phasing out HFCs under the Montreal Protocol".*[7] This agreement followed a speech[8] from India's Environment Minister, Prakash Javadekar, at the 26th Meeting of the Parties to the Montreal Protocol (MOP 26) in November 2014 calling for a "revolution on climate change" at the Paris Climate Conference and clearly acknowledging the problem posed by the proliferation of HFCs.

China has also taken significant domestic steps to reign in domestic HFC emissions (see Page 1) and has expressed support for multilateral action on HFCs. In 2013, President Xi Jinping signed two high-level agreements with the United States, one of which called for the establishment of a contact group to consider all relevant issues to a global phase down of the production and consumption of HFCs under the Montreal Protocol.[9]

Progress at last year's Montreal Protocol talks has resulted in the scheduling of an additional "Open Ended Working Group" (OEWG) meeting in Bangkok in April 2015 to focus on issues related to HFCs, as well as a technical workshop on alternatives to HFCs, including solutions for high-ambient climates.



India's Environment Minister Prakash Javadekar has called for a for a "revolution on climate change" and acknowledges the need to act on HFCs. Picture shows Mr Javadekar and Beatriz Domingorena of Argentina at the 26th Meeting of the Parties to the Montreal Protocol in November 2014.

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

A variety of climate friendly, low-GWP HFC-free solutions are currently available, including carbon dioxide, air, water, ammonia, hydrocarbons,[10] and some "not-in-kind" technologies such as solar technologies, evaporative cooling and district cooling. Transitioning to low-GWP refrigerants slashes 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.[11] However, the benefits of HFC-free equipment and products extend beyond direct emissions reductions; energy efficiency gains from the use of alternative systems are also enabling end-users to cut their indirect emissions, a crucial co-benefit of eliminating HFCs. The large reductions in energy use associated with the phase-out of ODS under the Montreal Protocol are well-documented.[12] With soaring demand for cooling in the emerging economies, aggregate energy efficiency gains from an HFC phase-out are likely to be far higher.

Retail chains that have made the switch from HFCs to climate-friendly natural refrigerants invariably report greater

than anticipated efficiency gains from the installation of HFC-free systems. For example, Coop Schweiz in Switzerland has reported energy efficiency gains of 25-30 per cent from its new natural refrigerant systems,[13] while UK supermarket chain Waitrose reports energy efficiency gains of 34.2 per cent since 2012 with its hydrocarbon based systems.[14] In the air-conditioning sector similar energy efficiency improvements 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.[15] A switch from HFC-410A to propane air conditioners in the residential sector in India could reduce greenhouse gas emissions by 38% by 2050, with 15% of the reduction attributed to energy savings.[16]

COMMON BUT DIFFERENTIATED RESPONSIBILITIES (CBDR) UNDER THE MONTREAL PROTOCOL

Parties to the Montreal Protocol have differentiated responsibilities and obligations reflecting their respective financial and technological capacity. In the case of the phase-out of ODS, developed nations were required to implement regulations years in advance of the schedule which applies to developing nations. This two-tier approach reduces the risk of adverse 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 out HFCs under the Montreal Protocol follow this successful pattern.[17]

TECHNOLOGY TRANSFER AND FINANCIAL SUPPORT

The Montreal Protocol carries an obligation safeguarding developing nations' right 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.*[18]

The Montreal Protocol's Multilateral Fund (MLF) covers 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-out of HFCs. Contributions to the MLF are provided by developed countries and distributed by four implementing agencies (UNIDO, UNEP, UNDP, World Bank) in the form of grants or concessional loans. Since the first meeting of the MLF, the Executive Committee has approved and provided over US$3 billion for the implementation of projects including industrial conversion, technical assistance, training and capacity building.[19]

The MLF also funds a network of Ozone Officers at 146 national offices organized into nine regional hubs throughout the developing world. These specialists are the "boots on the ground" responsible for implementing the phase-out schedules at national level. It is in large part thanks to their efforts that the finance supplied by the MLF has been deployed to such efficient and transformative effect. The funding is designed to ensure that in even the smallest countries at least one full time staff member is employed and basic office and communication costs for ozone units are covered.[20]

"Parties to the Montreal Protocol have differentiated responsibilities and obligations reflecting their respective financial and technological capacity. Current proposals to phase out HFCs under the Montreal Protocol follow this successful pattern."

BELOW:
The use of air conditioning is projected to soar over the coming decades, making the transition to climate-friendly coolants an increasingly urgent imperative.



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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,[21] countries must urgently seize every opportunity to curb greenhouse gas emissions.

Enacting a global phase-out of HFCs under the Montreal Protocol would yield up to 200 billion tonnes of emissions reductions by mid-century. With the international community in agreement on the imperative to decarbonise the global economy, eliminating HFCs must be an integral element of the strategy to get to 'net-zero' greenhouse gas emissions.

Measures to eliminate HFCs are underway in many countries around the world while energy efficient, HFC-free technologies are expanding to meet market demand. What is now required is an international agreement to accelerate the pace of change and empower developing countries to leapfrog outdated and costly 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 extraordinary meeting in 2015 dedicated to the discussion of HFCs is a clear sign that Parties to the Montreal Protocol stand ready to take this step.

EIA urges all Parties to the UNFCCC to support formal negotiations under the Montreal Protocol throughout 2015 to bring about a swift global agreement to address the consumption and production of HFCs.

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