

Why to Use the Montreal Protocol to Phase Down HFCs



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Background

As the previous presentation illustrated, HFCs are growing rapidly, largely because of actions under the Montreal Protocol to protect the ozone layer.

HFCs are growing because they're being used to replace the CFCs and HCFCs that the MP has addressed.

Background

This rapid HFC growth has been highlighted not only by scientists, but also by political leaders, including in the Rio + 20 Outcome: *The Future We Want*:

“We recognize that the phase-out of ozone-depleting substances is resulting in a rapid increase in the use and release of high global warming potential hydrofluorocarbons to the environment. We support a gradual phase-down in the consumption and production of hydrofluorocarbons.” (para. 222)

Obligations: Moral and Legal

The rapid growth of HFCs gives rise to two obligations for the Montreal Protocol:

- A basic moral obligation to address a problem it has contributed to creating
- A more specific, legal obligation arising from Article 2 of the Vienna Convention for the Protection of the Ozone Layer, to which the Montreal Protocol is a protocol

Vienna Convention Obligation

Article 2 (1):

The Parties shall take appropriate measures in accordance with the provisions of this Convention and of those protocols in force to which they are party to protect human health and the environment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer.

Vienna Convention Obligation

Article 1 (2)

“Adverse effects” means changes in the physical environment or biota, including changes in climate, which have significant deleterious effects on human health or on the composition, resilience and productivity of natural and managed ecosystems, or on materials useful to mankind.

Vienna Convention Obligation

In short:

Parties need to take appropriate measures to protect the environment, including the climate, from the adverse effects of actions they take to protect the ozone layer.

A rapid global increase in HFCs is precisely such an adverse effect on the climate.

Practical Considerations

In addition to the legal obligation, why from a practical perspective is the Montreal Protocol the ideal venue from implement the phase down of HFCs called for in the Rio + 20?

Practical Considerations:
*Phase Downs are Ideal for Manmade
Chemicals*

Phase downs are how the world has always successfully addressed manmade chemicals with environmental harms, including both greenhouse gases (e.g., CFCs and HCFCs) and other chemicals (DDT and PCBs).

If we want there to be less of something that we make, the solution is to make less of it.

Practical Considerations:
*Phase Downs are Ideal for Manmade
Chemicals*

Even before the scheduling of a phase down, the beginning of discussions about implementing a phase down sends a signal to manufacturers and engineers that the harmful chemicals are on their way out and that safer alternatives will be required in the future.

Practical Considerations:
*Phase Downs Can Avoid Perverse
Incentives*

A phase down approach will avoid the perverse incentives that can arise when manmade gases are controlled by an emissions-based approach.

With limits on how much can be produced, there is less of a concern that extra chemicals will be produced just to get credits or payments for destroying them or limiting their emissions.

Montreal Protocol's Specific Benefits

In addition to these more general practical considerations about the benefits of a phase down approach for manmade gases, the Montreal Protocol offers very specific benefits for addressing HFCs in particular.

Montreal Protocol's Specific Benefits

The MP is a treaty that was developed for phasing down chemicals use not only in the same sectors as HFCs (refrigeration, air conditioning, foams, solvents, fire suppressants), but for the same exact purposes

Particularly valuable are the MP's "expertise and institutions" which were highlighted in the U.S. and China's agreement on Saturday

Montreal Protocol's Specific Benefits:

Expertise and Institutions

Expert committees:

- A balance of developed and developing country members, which generates trust among parties
- Frequent and timely reports on issues such as:
 - the availability of alternatives in various sectors
 - the alternatives functionality in various environments and equipment systems
 - the projected costs of alternatives
- Parties can request specific reports or answers to questions

Montreal Protocol's Specific Benefits:

Expertise and Institutions

Scientific Assessment Panel

Environmental Effects Assessment Panel

Technological and Economic Assessment Panel

- Chemicals Technical Options Committee (CTOC)
- Flexible and Rigid Foams Technical Options Committee (FTOC)
- Halons Technical Options Committee (HTOC)
- Medical Technical Options Committee (MTOC)
- Methyl Bromide Technical Options Committee (MBTOC)
- ***Refrigeration, Air-Conditioning and Heat Pumps Technical Options Committee (RTOC)***

Montreal Protocol's Specific Benefits: *Expertise and Institutions*

The Multilateral Fund (MLF)

The MLF covers “agreed incremental costs” of actions by developing country parties

These costs are agreed via a double majority decision-making structure of the MLF board, requiring a majority of both developing and developed country members

Montreal Protocol's Specific Benefits:

Expertise and Institutions

Existing National Ozone Units (NOUs) can be utilized to support and implement an HFC phase down

147 NOUs, supported with MLF institutional funding, ensuring expertise on the ground in every developing country, and most developed countries, to:

- Coordinate choice with national companies

- Train for service

- Build capacity for safety standards authorities

- Remove barriers to technology

Montreal Protocol's Specific Benefits:

Use of a Staggered Phase Down

Developed countries take the lead by implementing their phase downs first

Before developing countries implement their own phase downs they will have clear information about best alternatives for each sector

Montreal Protocol's Specific Benefits: *Ability to Adjust Phase Down Schedule*

The MP allows for adjustments to phase down schedules as new information and alternatives become available.

To date, the only adjustments have been to accelerate the phase outs because compliance was easier than predicted.

Other adjustment have been made to allow for critical use exemptions (e.g. process agents, feedstocks)

Relationship of HFCs in MP to HFCs in UNFCCC and KP

The FSM and Morocco's amendment proposal ***does not*** remove HFCs from the ambit of the KP or UNFCCC.

Emissions of HFCs would remain within the KP basket.

Would only phase down ***production and consumption*** of HFCs under the MP. But this would complement efforts to achieve the ultimate objective of the UNFCCC, since it would lead to fewer emissions in the long run.

Would do so in a manner consistent with UNFCCC Articles 3.1 and 4.3—developed countries would take the lead and provide agreed incremental costs for doing country action.

Key Additional Benefit: Energy Efficiency Gains

According to the TEAP, MP phase downs have led to up to 60% improvement in Life-Cycle Climate Performance

80% or more of the climate impacts of air conditioning and refrigeration equipment are from the electricity, not the refrigerants themselves.

An HFC phase down is expected to deliver similar energy efficiency improvements—manufacturers tend to greatly improve efficiency during systems redesign for new refrigerants

Conclusion

The Montreal Protocol is not only the world's most successful environmental treaty.

The MP is also the world's most successful climate treaty, having prevented an average of approximately 11 Gt CO₂e emissions per year from 1991 through 2010 (about 220 Gt CO₂e so far).

We can build and expand on this success—preventing a ≈90 more Gt CO₂e by 2050 and 0.5° C temperature rise by 2100—by agreeing to continue to do what the MP has already done for 25 years: phase down a high-GWP GHG (HFCs) from the refrigeration and air conditioning sectors