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Extending ozone treaty would support GHG reduction goals

Extending the Montreal Protocol on ozone-depleting substances to include hydrofluorocarbons (HFCs) could have important benefits for climate change action, say scientists in a recent analysis. HFCs are currently part of the Kyoto Protocol as greenhouse gases, but this protection will end with the expiry of Kyoto commitments this year.

The Montreal Protocol, which came into force in 1989, was a global agreement to stop using ozone-depleting chemicals, primarily chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs). Along with the Vienna Convention for the Protection of the Ozone Layer, of 1985, it became the first treaty in the history of the United Nations to be universally ratified.

Most ozone-depleting substances are also potent greenhouse gases. Therefore, reductions in the use of ozone-depleting substances have not only protected the ozone layer, but also provided some climate protection. The benefit of the Montreal Protocol for climate, expressed as a reduction in CO_2-equivalent emissions, is about five times greater than the annual emissions reduction target for the first commitment period (2008–2012) of the Kyoto Protocol.

By 2010, CFCs had been phased out completely, and HCFCs are due to be phased out by 2030. As substitutes, hydrofluorocarbons (HFCs) are increasingly being used as they do not affect the ozone layer, in applications such as refrigeration, air conditioning, insulation foams, aerosol sprays, solvents and fire protection. Although HFCs are not ozone-depleting, they are potent greenhouse gases (GHGs), some of which will stay in the atmosphere for up to half a century. Their contribution to climate change is currently equivalent to just 1% of the effect of long-lived GHGs (such as carbon) on climate forcing, but this figure is growing and has the potential to substantially influence climate in the future if no action is taken.

Provisions for controlling HFCs are included in the Kyoto Protocol, but will cease to exist when Kyoto commitments end this year. At the 2011 Durban climate negotiations, it was agreed that new commitments on GHG emissions will not come into effect until 2020. This leaves a gap of at least eight years in which the positive, protective effects of the Montreal Protocol could begin to be balanced out by the warming effects of HFCs. The researchers explain that extending the Montreal Protocol to cover HFCs could preserve its climate benefits.

Proposals for amendments that would cover HFCs have already been submitted and more than 100 nations, including the EU[1], have signed a declaration of intent 'to pursue further action under the Montreal Protocol aimed at transitioning the world to environmentally sound alternatives to HCFCs'. The challenge for policymakers, say the researchers, is to establish how this could be accomplished.

Under the Montreal Protocol, the Multilateral Fund provides financial assistance to support developing countries replace ozone-depleting substances with alternatives. Currently, however, these alternatives may include HFCs. Businesses decide which chemicals to use based on a number of different factors, such as cost and health, safety and environmental considerations. The researchers say that regulations to replace HFCs would provide a clear signal for industry. The Multilateral Fund could also provide a mechanism to support the phasing out of HFCs. The Montreal Protocol also provides other useful policy infrastructure and experience, including expert panels and regional networks, which could help speed up the implementation of any future amendment of the Protocol to cover HFCs.

1. UNEP. (2012). Decision XXII/Anx III: Annex III - Declaration on the global transition away from hydrochlorofluorocarbons (HCFCs) and chlorofluorocarbons (CFCs). United Nations Environmental Programme. [Online]: http://ozone.unep.org/new_site/en/Treaties/decisions_text.php?dec_id=1070

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