



## Brief primer on the Montreal Protocol

Many elements of the Montreal Protocol have contributed to its success to date

- In 2009, the Montreal Protocol and the Vienna Convention became the first treaties in history to achieve universal ratification when Timor-Leste became the 196th country to ratify them. The Protocol

briefly lost its claim to universal ratification with the birth of the world's newest country, South Sudan, in July 2011, but it quickly regained it when that country ratified the Protocol in January 2012. The entire global community has thus legally committed itself to meeting specific time-bound targets for the virtual phase-out of nearly 100 ozone depleting substances;

- The Montreal Protocol was one of the first environmental agreements to recognize the precautionary principle explicitly. A major achievement based on the principle was a preemptive decision by the parties to ban identified ozone depleting compounds before they were ever commercially produced;
- The Protocol also represents one of the first and most extensive applications of the concept of common but differentiated responsibilities. Under the Protocol developing countries enjoy a 10-15 year grace period beyond the initial phase-out dates for developed countries; furthermore, once their phase-out obligations are initiated they receive substantial financial and technical assistance to help them to meet them;
- A major source of such financial assistance is the Multilateral Fund for the Implementation of the Montreal Protocol, which was established by the Meeting of the Parties to the Protocol with the goal of enabling developing countries to comply in a timely manner with the targets set out in the Protocol for the reduction and elimination of the production and consumption of the chemicals controlled by the Protocol. The assets of the Fund are provided by the developed country parties to the Protocol and are replenished every three years. The Fund is overseen by its Executive Committee, which comprises seven developed country members and seven developing country members. As of the beginning of 2012, the Multilateral Fund had approved over US\$2.8 billion to support over 6,800 projects and activities in 145 developing countries, including the closure or conversion of plants that produced or used ozone depleting substances. The latest replenishment of the Multilateral Fund took place during the Twenty-third Meeting of the Parties to the Montreal Protocol, in November 2011, when the parties adopted a budget of US\$450 million for the years 2012–2014;
- The parties to the Protocol are aided in their decision making by three special assessment panels: the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the Technology and Economic Assessment Panel. The panels produce comprehensive and policy relevant assessment reports at least every four years to enable the parties to adjust and amend the control measures under the Protocol and make informed decisions regarding the future of stratospheric ozone recovery and protection. The panel members are recognized by those working to protect the ozone layer as leading authorities from around the world on topics relevant to the Protocol, and the analyses of ozone-related issues that they produce are recognized as the most authoritative in existence. The latest quadrennial assessment reports and related question and answer documents produced by the panels were their 2010 reports, and the Technology and Economic Assessment Panel has produced several progress and topic-specific reports since then;
- The Protocol may be unique in its success in tackling the difficult issues of reporting and compliance. The Protocol has evolved a robust and supportive reporting and compliance procedure. Each party is required to report data annually on its production, import and export of each of the substances it has committed to reducing and eliminating under the Protocol. The data reported by the parties are reviewed by an implementation committee, known formally as the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol, which is made up of 10 parties representing the five geographic regions of the United Nations. Based on its review of the reported data the Committee assesses the compliance status of each party and makes recommendations to the Meeting of the Parties on how to deal with cases of non-compliance. The non-compliance procedure, which has been widely praised, is meant to be supportive rather than confrontational or punitive; non-compliant parties accordingly participate in the development of plans of action that contain time specific benchmarks for ensuring their prompt return to compliance and in the case of developing country parties, receive assistance from the Multilateral Fund to enable them to do so;



- The Protocol includes trade provisions that preclude parties from trading in controlled ozone depleting substances with non-parties. These provisions help to ensure that countries that have not agreed to be bound by the Protocol's controls do not have access to these chemicals. In addition, related provisions have encouraged ratification and helped the Protocol to achieve universal participation;
- The Protocol includes an adjustment provision that enables the parties to respond to evolving science and accelerate the phase-out of agreed ozone depleting substances without going through the lengthy formal process of national ratification required to amend a treaty. It also includes an amendment provision that has facilitated the addition of new chemicals and the establishment of new institutions under the Protocol. The Protocol has been adjusted six times and amended four times since its initial adoption in 1987.

## Chemicals controlled by the Montreal Protocol

### The Protocol requires parties to control nearly 100 chemicals, which are dealt in several categories:

**CFCs:** Chlorofluorocarbons (CFCs) were the most commonly used of the chemicals controlled by the Protocol. These chemicals were widely used in a large variety of activities and products including refrigeration, foams and metals cleaning. Since the end of 2009 they have been virtually phased out, with remaining uses limited to medical inhalers in a very small number of countries;

**Halons:** Halons were probably the second most commonly used chemicals covered by the Protocol. They were used as firefighting agents in everything from extinguishers to total flooding systems in computer rooms. The global community has phased out new production of these chemicals but the use of stockpiled and recycled halons continues for such uses as aircraft and military applications;

**Carbon tetrachloride:** Another commonly used ozone depleting substance was carbon tetrachloride, which was used primarily as an industrial cleaning solvent. Developed countries phased out the use of this chemical in 1996, while developing countries achieved a total phase-out of controlled uses in 2010. Carbon tetrachloride is also widely used as feedstock in the production of other chemicals; as this use results in the emission of very small quantities it is not controlled by the Montreal Protocol;

**HCFCs:** Another commonly used class of ozone depleting substances is hydrochlorofluorocarbons (HCFCs). HCFCs constitute the largest group of chemicals controlled under the Protocol and currently represent the largest remaining use of ozone depleting substances. These chemicals were, since 1990, viewed as transitional substances: while their relatively low ozone impact resulted in their use as an early replacement for CFCs in many refrigeration and foams uses, the parties always knew that they needed to be phased out. Given that once in use (for example in refrigeration equipment) they may remain in place for a long time, the parties originally agreed to an extended phase-out period, calling for total phase-out in developed countries by 2030 and in developing countries by 2040. In view of their contribution to both ozone depletion and global warming, however, the parties agreed in 2007 to adjust the Protocol's HCFC control schedule to accelerate their phase-out. This effort is in keeping with the work of the parties to ensure that their efforts to protect the ozone layer also protect the environment as a whole;

**Methyl chloroform:** Methyl chloroform was used as an industrial cleaning solvent. This use was phased out in developed countries in January 1996 and developing countries had achieved a virtual phase-out by 2007, more than seven years ahead of the deadline under the Protocol;

**Methyl bromide:** Another widely used ozone depleting substance is methyl bromide, an agricultural fumigant. This chemical, which was added to the Protocol in 1992, has a wide variety of agricultural uses. Developed countries were to have phased out the controlled use of this substance in 2005, but the lack of efficacious alternatives for all uses led the Parties to agree time limited "critical use exemptions" for some specific uses and countries. Since 2005, those exemptions have been reduced by over 90 per cent. By 2010, developing countries had phased out almost 75 per cent of their historic methyl bromide consumption and were well on their way to achieving the Protocol's goal of complete phase-out by 2015. Methyl bromide is also used by a large number of countries and for a large number of commodities for so-called quarantine and pre-shipment applications designed to prevent the spread of pests in connection with the import and export of goods. While the Parties are striving to reduce or eliminate these uses of methyl bromide, they are currently exempt from the Protocol's phase-out requirements;

**Other chemicals:** The final categories of ozone depleting substances, hydrobromofluorocarbons (HBFCs), bromochloromethane (BCM) and other fully halogenated CFCs, were niche chemicals with very small markets. They were included in the Protocol largely as a precaution, to eliminate the possibility that their use would increase.

