



## **Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol on Substances that Deplete the Ozone Layer's contribution towards the 2030 Agenda for Sustainable Development and the Sustainable Development Goals**

### **Introduction**

The Executive Secretary of the Secretariat for the Vienna Convention for the Protection of the Ozone Layer (Vienna Convention) and for the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol) submits this report to the 2019 High Level Political Forum on Sustainable Development (HLPF), in response to the invitation from the President of the United Nations Economic and Social Council, H.E. Ms. Inga Rhonda King.

The report is structured around the template provided in the letter of invitation and deals with the theme of the 2019 HLPF: *Empowering people and ensuring inclusiveness and equality*. It describes the contribution of the Vienna Convention and its Montreal Protocol (the ozone treaties) towards those Sustainable Development Goals under review in 2019 that are most relevant to the work of the two treaties.

In the 2019 HLPF, the sustainable development goals to be examined from the perspective of the given theme are SDG 4 (Quality education), 8 (Decent work and economic growth), 10 (Reduced inequalities), 13 (Climate change), and 16 (Peaceful societies, justice and strong institutions) as well as SDG 17 (Partnerships for the goals). Goals 4 and 16 are not of direct relevance to the work of the ozone treaties and so will not be mentioned in this report.

#### **a. The identification of progress, gaps, areas requiring urgent attention, risks and challenges in achieving the SDGs; and, or in relation to the theme within the area under the purview of your intergovernmental body**

Now entering its fourth decade, the Montreal Protocol is credited with the successful phase-out 99% of controlled ozone-depleting substances. The 2018 quadrennial report of the Protocol's Scientific Assessment Panel<sup>1</sup> indicates that at projected rates, the ozone layer depletion in the Northern Hemisphere and mid-latitude will return to pre-1980 levels by the 2030s, while those in the Southern Hemisphere mid-latitudes and the Antarctic will do so in the 2050s and by 2060, respectively. Estimated resultant benefits range from prevention of millions of cases of skin cancers and cataracts<sup>2 3 4</sup>, to savings of billions of dollars by avoiding damages to fisheries, agriculture and materials<sup>5</sup>. In

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<sup>1</sup> World Meteorological Organization (WMO), Executive Summary: Scientific Assessment of Ozone Depletion: 2018, World Meteorological Organization, Global Ozone Research and Monitoring Project – Report No. 58, 67 pp., Geneva, Switzerland, 2018. Page 27

<sup>2</sup> The Montreal Protocol's Environmental Effects Assessment Panel reported to the 29th Meeting of the Parties in November 2017 that estimates are that by the end of the century, in the USA alone, between 275 million and 300 million cases of skin cancer would be prevented for people born between 1980 and 2100.

<sup>3</sup> van Dijk, A., Slaper, H., den Outer, P.N., Morgenstern, O., Braesicke, P., Pyle, J.A., Garny, H., Stenke, A., Dameris, M., Kazantzidis, A., Tourpali, K., and Bais, A.F. (2013): Skin Cancer Risks Avoided by the Montreal Protocol—Worldwide Modeling Integrating Coupled Climate-Chemistry Models with a Risk Model for UV: <https://www.ncbi.nlm.nih.gov/pubmed/22924540>.

<sup>4</sup> US EPA report (27 Feb 2015): Updating ozone calculations and emissions profiles for use in the atmospheric and health effects framework model: [https://www.epa.gov/sites/production/files/2015-11/documents/ahcf\\_2015\\_update\\_report-final\\_508.pdf](https://www.epa.gov/sites/production/files/2015-11/documents/ahcf_2015_update_report-final_508.pdf)



addition, since the phased-out ozone depleting substances were also powerful greenhouse gases, this achievement has avoided an estimated 135 billion tonnes of CO<sub>2</sub> equivalent emissions between 1990 and 2010<sup>6</sup>. [SDG 8 (economic growth), SDG 10 (reduced inequality), SDG 13 (climate change), SDG 17 (partnerships for the goals)].

With effect from 1 January 2019, the Protocol's Kigali Amendment entered into force. Its implementation is expected to avoid up to 0.4° Celsius warming by 2100, making a significant contribution to climate change mitigation. The Amendment will ensure that the consumption and production of 18 controlled hydrofluorocarbons (HFCs) and their isomers, which are not ozone-depleting but are highly global warming, are phased down by more than 80 per cent over the next 30 years. Developed countries that have ratified the Amendment will implement their first phasedown step this year, while developing countries will begin with a freeze on consumption and production from 2024. As was the case for phasing out ozone-depleting substances, the HFC phasedown in developing countries will receive support from the Protocol's financial mechanism, the Multilateral Fund for the Implementation of the Montreal Protocol (the Multilateral Fund). Building on the success of the universally ratified Protocol so far, it is important to maintain the push for universal ratification and implementation of the Amendment in order to maximise the benefits to be achieved. [SDG 8 (economic growth), SDG 10 (reduced inequality), SDG 13 (climate change), SDG 17 (partnerships for the goals)].

In a 2018 report, members of the Protocol's Scientific Assessment Panel identified an unexpected increase in global emissions of trichlorofluoromethane (CFC-11), an ozone-depleting substance with high global warming potential that had been phased out in 2010. The parties were informed of this anomaly and, after in depth discussion among themselves and with interested stakeholders, immediately took a decision at the Thirtieth Meeting of the Parties to request the Protocol's assessment panels to look into the matter. They also requested the Ozone Secretariat to provide an overview of monitoring, reporting and verification under the Protocol and the funding agreements for developing countries. In addition, they requested all parties to take measures to ensure that the phase-out of CFC-11 is sustained and enforced. The issue is currently under review by the parties. [SDG 13 (climate change), SDG 17 (partnerships for the goals)].

Another issue currently under consideration by the parties, which has important implications for the airline and shipping industries, is the limited availability of halons. These are ozone-depleting substances whose consumption and production were phased out in 2010. Stocks of recovered, reclaimed and recycled halons are still used for fire suppression on ships and in civil aviation, specifically in cargo compartments and engines, while suitable alternatives are being developed. The parties have requested the Protocol's Technology and Economic Assessment Panel to continue working to identify needs for halons and possible sources of recoverable halons, in consultation with the International Maritime Organization and the International Civil Aviation Organization. [SDG 8

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<sup>5</sup> Markandya, A. and Dale, N. (2012): "The Montreal Protocol and the Green Economy: Assessing the Contributions and Co-Benefits of a Multilateral Environmental Agreement," Contribution to the Green Economy Initiative, United Nations Environment Programme, OzoneAction Branch and Economics and Trade Branch, accessible at <http://www.unep.org/ozonaction/Portals/105/documents/publications/green-economy-report.pdf>, Pages 45 & 50

<sup>6</sup> Molina, M., Zaelke, D., Sarma, K.M., Andersen, S.O., Ramanathan, V., and Kaniaru, D. (2009): Reducing abrupt climate change risk using the Montreal Protocol and other regulatory actions to complement cuts in CO<sub>2</sub> emissions, P. Natl. Acad. Sci. USA, 106(49), 20616–20621, doi: [10.1073/pnas.0902568106](https://doi.org/10.1073/pnas.0902568106).



(economic growth), SDG 10 (reduced inequality), SDG 13 (climate change), SDG 17 (partnerships for the goals)].

At its thirtieth meeting, in 2018, the Meeting of the Parties through decision XXX/2 adopted an adjustment to the control measures for hydrochlorofluorocarbons (HCFCs). This adjustment allows for essential use exemptions to be made to the control measures upon phase-out of HCFCs by developed countries and developing countries respectively. Exemptions are granted where necessary for health or safety or where critical for the functioning of society, and where there no technically and economically feasible alternatives are available<sup>7</sup>. The parties also decided to expand the 'servicing tail', which provides for a small percentage of HCFCs to be used for specified purposes for a period of ten years after the phaseout, to cover specific and necessary uses within the maximum allowance stipulated in the Protocol. These uses are permitted equally for developed and developing countries, and are intended to prevent financial loss and protect human health and safety. [SDG 8 (economic growth), SDG 10 (reduced inequality), SDG 17 (partnerships for the goals)].

#### **b. Valuable successful experiences and lessons learned on empowering people and ensuring inclusiveness and equality**

Both the 2017 and the 2018 submissions to the HLPF highlighted the key aspects of the ozone treaties' framework and implementation that have underpinned their success. These can be briefly summarised as follows:

Partnership is a fundamental strength of the ozone treaties, not only among countries (and between developed and developing countries) but through the engagement with all stakeholders, industry, science, civil societies, government, intergovernmental organizations and the media. [SDG 10 (reduced inequality), SDG 17 (partnerships for the goals)].

Financial and technical support for implementation by developing countries are provided through the financial mechanism, the Multilateral Fund. [SDG 8 (economic growth), SDG 10 (reduced inequality), SDG 17 (partnerships for the goals)]. (See section d below).

Controls on trade with parties and a ban on trade with non-parties<sup>8</sup> create an incentive for non-parties to ratify the Amendment, while allowing flexibility where this is needed and justified, and provide a good foundation for data collection for monitoring implementation. [SDG 8 (economic growth), SDG 10 (reduced inequality)].

The Protocol's compliance mechanism, the Implementation Committee, facilitates compliance by parties rather than punishing non-compliance. Its membership reflects a balance between developed and developing countries. [SDG 10 (reduced inequality), SDG 13 (climate change), SDG 17 (partnerships for the goals)].

The three Assessment Panels bring together experts from government, private sector and academia to provide regular and updated information to all parties on relevant scientific, technical, economic and environmental issues in a manner that is understandable to policymakers. The Ozone Research Managers periodically highlight gaps and needs in research and systematic observations pertaining to

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<sup>7</sup> Decision IV/25 of the Meeting of the Parties

<sup>8</sup> For HFCs the restriction on trade with non-parties will enter into force on 1 January 2033 provided that 70 parties have ratified the Kigali Amendment by that date. At the time of writing 69 parties had ratified the Amendment.



the ozone layer, including interactions between ozone and climate. The reports and recommendations of these institutions enable the parties to make informed decisions on complex matters, based on sound science. [SDG10 (*reduced inequality*), SDG17 (*partnerships for the goals*)].

### **c. Emerging issues likely to affect inclusiveness and equality at various levels**

The phase-down of HFCs under the Kigali Amendment has now begun, in parallel with the ongoing phase-out of HCFCs (to be completed in developed countries by 2020 and in developing countries by 2030). The Kigali Amendment recognises that different countries face different challenges and allows different phase-down schedules for four defined groups of parties. Since HFCs have been used as alternatives to HCFCs, the parties have acknowledged that the two are interlinked and may require some additional measures for flexibility in implementation, particularly for developing countries and countries with high-ambient temperature conditions. Parties will continue to discuss these issues at their upcoming meetings in 2019. [SDG 8 (*economic growth*), SDG 10 (*reduced inequality*), SDG 13 (*climate change*), SDG 17 (*partnerships for the goals*)].

One of the key sectors in which HFCs are used is cooling. As the effects of climate change continue to be felt, the demand for refrigeration and air conditioning is growing, with a corresponding growth in energy demand to power these appliances. The Scientific Assessment Panel's 2018 Executive Summary indicates enhanced energy efficiency of refrigeration and air conditioning equipment could "potentially double the climate benefits of the HFC phasedown"<sup>9</sup>. The parties to the Montreal Protocol are continuing to explore opportunities to enhance the energy efficiency of appliances, equipment and systems in the move away from HFCs to greener alternatives, and are exploring ways to promote access to these technologies for developing countries. [SDG 8 (*economic growth*), SDG 10 (*reduced inequality*), SDG 13 (*climate change*), SDG 17 (*partnerships for the goals*)].

### **d. An assessment of the situation regarding the principle of "ensuring that no one is left behind" at the global, regional and national levels**

As reported in the 2018 and 2017 submissions to the HLPF, the Montreal Protocol contributes to 13 out of the 17 sustainable development goals. Through universal ratification and the proven commitment of the 197 parties to the ozone treaties, the ozone layer has started to heal, with benefits for all life on Earth. There is still a considerable amount of work ahead, by all parties individually and collectively, to ensure that the job is completed and to resolve the practical problems of implementation as they arise. In doing so, and in the implementation of the HFC phasedown, the parties will continue to depend on the well-established infrastructure that has served them so well to date.

The Protocol's unique model engages all stakeholders, provides strong support for developing countries' implementation, adopts a facilitative rather than a punitive approach to compliance and relies heavily on up-to-date and relevant scientific and technical information and a frank and open approach to international diplomacy. [SDG 8 (*economic growth*), SDG 10 (*reduced inequality*), SDG13 (*climate change*), SDG 17 (*partnerships for the goals*)].

The international principle of special and differential treatment for developing countries is embodied in a deferred implementation schedule for developing countries and a well-established funding

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<sup>9</sup> Op cit page 31.



mechanism. The Multilateral Fund works with its four Implementing Agencies<sup>10</sup> and a number of bilateral agencies to provide financial and technical support to developing countries in complying with their obligations under the Montreal Protocol (with expenditures in the amount of more than US\$3.77 billion approved to date). Funding decisions are taken by its Executive Committee, the membership of which is balanced between Article 5 (developing) and non-Article 5 (developed) countries. Support is provided for institutional strengthening, capacity building and technology transfer. The potentially negative impacts on the enterprises involved - and their workers - of the transitioning to greener alternatives are mitigated, leading to more competitive industry and to economic benefits. *[SDG 8 (economic growth), SDG 10 (reduced inequality), SDG 17 (partnerships for the goals)]*.

Exemptions to control measures ensure flexibility in implementation where critical or essential uses of controlled substances are identified, to ensure that societal functioning is not disrupted. For the HFC phasedown the particular needs of countries with high ambient temperatures have been recognised in the provision for a specific high-ambient-temperature exemption. *[SDG8 (economic growth), SDG10 (reduced inequality)]*.

**e. Areas where political guidance by the high-level political forum is required**

Continued support from the HLPF to promote ratification of the Kigali Amendment can help to achieve the goal of universal ratification and global implementation. This is essential to achieving maximum projected benefits of the HFC phase-down for the climate, the environment, the economy, and society as a whole.

**f. Policy recommendations on ways to accelerate progress in empowering people, ensuring inclusiveness and equality, and achieving SDGs.**

The Montreal Protocol continues to stand as an example of successful partnership and international cooperation in addressing global challenges. Its emphasis on engagement with all stakeholders, empowerment of developing countries, the balance between developed and developing countries, providing the means of implementation as well as the mechanism to monitor compliance and constant recourse to ever-evolving scientific and technical knowledge form a solid framework for committed and effective action by its parties. As the Montreal Protocol moves to phase down HFCs, even closer coordination with other entities working in the field of climate protection and the closely related field of cooling and energy efficiency may be required. The safety aspects of alternatives to HFCs are also a concern, requiring strengthened collaboration with standardization bodies. The annual global review undertaken by the HLPF provides a valuable overview of progress towards the goals and can identify possible gaps or opportunities for greater synergy among the various actors.

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<sup>10</sup> United Nations Development Programme, United Nations Environment Programme, United Nations Industrial Development Organization, World Bank