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**Thirty-First Meeting of the Parties to
the Montreal Protocol on Substances that
Deplete the Ozone Layer**

Rome, 4–8 November 2019

Item 6 of the provisional agenda for the preparatory segment*

**Unexpected emissions of trichlorofluoromethane
(CFC-11)**

**Unexpected emissions of CFC-11: update to the overview
provided at the forty-first meeting of the Open-ended Working
Group**

Report by the Secretariat

I. Introduction

1. In 2018, following a study published in *Nature*¹ showing that global emissions of trichlorofluoromethane (CFC-11) had been increasing unexpectedly since 2012, after the consumption and production phase-out date for that substance established under the Montreal Protocol on Substances that Deplete the Ozone Layer, the Thirtieth Meeting of the Parties adopted decision XXX/3, by which it sought to mobilize Montreal Protocol parties and institutions as well as related entities to take action to identify and address the unexpected emissions.
2. In paragraph 6 of that decision, the parties requested the Secretariat, in consultation with the secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol, to provide the parties with an overview outlining the procedures under the Montreal Protocol and the Multilateral Fund with reference to controlled substances, by which parties review and ensure continuing compliance with Protocol obligations and with the terms of agreements under the Fund, including with regard to monitoring, reporting and verification. In the same decision, the parties also requested the Secretariat to provide a report to the Open-ended Working Group at its forty-first meeting on those issues and a final report to the Thirty-First Meeting of the Parties.
3. In response to that decision, the Secretariat provided a report to the forty-first meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/41/3) and an addendum thereto (UNEP/OzL.Pro.WG.1/41/3/Add.1), which included input received from the secretariat of the Multilateral Fund. The Fund later issued a related document for the eighty-third meeting of its Executive Committee (UNEP/OzL.Pro/ExCom/83/38), which was annexed to the input provided previously by the Fund and issued under a cover note by the Secretariat as a background document to

* UNEP/OzL.Pro.31/1.

¹ S. A. Montzka and others, "An unexpected and persistent increase in global emissions of ozone-depleting CFC-11", *Nature*, vol. 557, pp. 413–417 (17 May 2018).

the forty-first meeting of the Open-ended Working Group.² For ease of reference, an extract from document UNEP/OzL.Pro/ExCom/83/38, setting out a summary of observations for consideration by the Committee, is annexed to the present document. The members of the Executive Committee, while considering document UNEP/OzL.Pro/ExCom/83/38, had expressed the view that some of the suggestions in that document would be better addressed by the Meeting of the Parties to the Montreal Protocol, and, in the case of atmospheric monitoring, by the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer.³

4. During the forty-first meeting of the Open-ended Working Group, the parties considered the issue of unexpected emissions of CFC-11, in part through presentations by the Scientific Assessment Panel and the Technology and Economic Assessment Panel. The parties established a contact group to discuss the issue in greater depth with a mandate to consider further: (a) technical and scientific issues related to the unexpected emissions of CFC-11, with a view to identifying the information that needed to be enhanced; and (b) institutional matters and processes under the Vienna Convention and the Montreal Protocol, including monitoring, reporting and verification, compliance, licensing and illegal trade. The parties had, at the time of the contact group’s establishment, agreed that additional matters could be added to its mandate if necessary.

5. The contact group met four times, and its report was presented by the co-chairs of the contact group to the Open-ended Working Group and annexed to the report of the forty-first meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/41/5, annex II). The report of the contact group was also referred to in a note by the Secretariat prepared for the Thirty-First Meeting of the Parties (UNEP/OzL.Pro/31/2). During its discussions, the contact group identified a number of issues for further discussion at the Thirty-First Meeting of the Parties (UNEP/OzL.Pro.WG.1/41/5, annex II, paras. 4 and 5). The parties were urged to consider those issues intersessionally and come to the Thirty-First Meeting of the Parties prepared to decide on the way forward.

6. The present report provides a brief recapitulation of the issues listed by the contact group along with background information relevant to a number of those issues, for consideration by the parties in their discussions under item 6 of the provisional agenda for the preparatory segment.

II. Information related to issues identified by the contact group

7. The following table provides an overview of the issues identified by the contact group during its discussions, as recorded in the report of the contact group. Individual issues that relate to the same subject matter have been grouped together.

<i>Broad topic</i>	<i>Individual issues identified by the contact group</i>
(a) Background to the problem	<ul style="list-style-type: none"> • Very broadly, the need to understand the past: what happened, how and why, and its implications: <ul style="list-style-type: none"> - Parties noted that it was important not to be complacent and to ensure that licensing and domestic enforcement systems were comprehensive and effective; - There was disappointment with the situation that had occurred and openness to considering actions and suggestions for next steps in relation to the specific situation and in relation to considering institutional changes.
(b) Atmospheric monitoring, research and systematic observation	<ul style="list-style-type: none"> • Atmospheric monitoring and observation, and actions that had been proposed in the report of the international symposium⁴ on the unexpected increase in emissions of CFC-11, held in Vienna in March 2019: <ul style="list-style-type: none"> - There was broad interest in looking at additional monitoring to detect regional emissions. However, this needed to be in the context of a strategic plan and prioritization; - However, it was noted that monitoring was not a substitute for national-level implementation of obligations.
	<ul style="list-style-type: none"> • General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention:

² See the background document entitled “Overview of the procedures under the Multilateral Fund by which the parties review and ensure continuing compliance with the terms of agreements under the Fund: reissued”. Available at <http://conf.montreal-protocol.org/meeting/oweg/oweg-41/presession/SitePages/Home.aspx>.

³ UNEP/OzL.Pro/ExCom/83/48, para. 216.

⁴ The report of the symposium is available at <http://conf.montreal-protocol.org/meeting/oweg/oweg-41/presession/SitePages/Home.aspx>.

<i>Broad topic</i>	<i>Individual issues identified by the contact group</i>
	<ul style="list-style-type: none"> - It was noted that the Trust Fund, being primarily targeted at capacity-building for parties operating under paragraph 1 of Article 5 of the Montreal Protocol (Article 5 parties), was not necessarily the right mechanism for building monitoring capability.
	<ul style="list-style-type: none"> • The role of the Ozone Research Managers and its connection to the Scientific Assessment Panel: <ul style="list-style-type: none"> - There was interest in seeking advice from the Ozone Research Managers and the Scientific Assessment Panel on potentially useful sites for additional monitoring.
(c) Montreal Protocol provisions and actions by parties	<ul style="list-style-type: none"> • The need for equal treatment of all parties in respect of obligations: <ul style="list-style-type: none"> - Parties acknowledged that all parties had Article 7 and licensing obligations to meet but that there were additional financial obligations under the Multilateral Fund, which meant that there was transparent verification of the country programme data reported by Article 5 parties.
	<ul style="list-style-type: none"> • Strengthening monitoring, reporting and verification more generally: <ul style="list-style-type: none"> - All parties were open to the concept of transparency in their licensing systems, with the opportunity to learn from the systems of other countries.
	<ul style="list-style-type: none"> • The need for any measures adopted to be proportional to the financial resources available, especially in Article 5 countries.
	<ul style="list-style-type: none"> • Preventing illegal trade and reporting thereon under decision XIV/7, and the related issues of informal prior-informed consent, licensing systems and domestic compliance and enforcement: <ul style="list-style-type: none"> - Licensing systems were fundamental to ensuring overall compliance with obligations. It was important ensure that they were fulfilling that role and would continue to do so in the future, especially in relation to new substances; - There was interest in additional action to address illegal trade and in the reporting of illegal trade to the Ozone Secretariat.
(d) Compliance mechanism	<ul style="list-style-type: none"> • Monitoring and testing of CFC-11 in blends and polyols: <ul style="list-style-type: none"> - Some parties drew attention to their different control systems for polyols. It was acknowledged that differences among control systems might be confusing, but that there might be room to better understand those differences.
	<ul style="list-style-type: none"> • The role of the Montreal Protocol compliance mechanism in dealing with such issues: <ul style="list-style-type: none"> - It was acknowledged that the existing compliance mechanism had worked well to date but was not well suited to addressing the specific situation of CFC-11; - The President of the Implementation Committee said that the Committee had asked the Secretariat to prepare a discussion paper on the compliance mechanism for its next meeting, noting that the paper needed to be within the Committee's mandate.

8. Sections A to D below set out information relevant to several of the broad topics discussed by the contact group, including background information on the unexpected CFC-11 emissions; atmospheric monitoring, research and systematic observation; related Montreal Protocol provisions and actions by parties; and the compliance mechanism. In each section, emphasis is placed on the particular issues highlighted by the contact group. The present document refers to information presented in the report on unexpected emissions of CFC-11 prepared by the Secretariat for the forty-first meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/41/3), which has been posted on the meeting portal of the Thirty-First Meeting of the Parties as a background document,⁵ and to the background document prepared by the secretariat of the Multilateral Fund for the meeting of the Open-ended Working Group (see footnote 2).

⁵ <http://conf.montreal-protocol.org/meeting/mop/mop-31/SitePages/Home.aspx>.

A. Background information on CFC-11 emissions

9. At the forty-first meeting of the Open-ended Working Group, the co-chairs of the Scientific Assessment Panel and the Technology and Economic Assessment Panel provided an overview of what was known about the unexpected emissions of CFC-11. The main messages of their presentations are summarized in sections 1 and 2 below.⁶

1. Scientific Assessment Panel

10. The co-chairs of the Scientific Assessment Panel outlined the main findings set out in *Scientific Assessment of Ozone Depletion: 2018*;⁷ the outcomes of the International Symposium on the Unexpected Increase in Emissions of Ozone-Depleting CFC-11,⁸ held from 25 to 27 March 2019 in Vienna; and the conclusions of Rigby and others in a paper published in *Nature* in May 2019, entitled “Increase in CFC-11 emissions from eastern China based on atmospheric observations”.⁹

11. In brief, the 2018 assessment showed that global CFC-11 emissions derived from measurements by two independent networks had increased after 2012, thereby slowing the steady decrease in atmospheric concentrations that had been reported in previous Panel assessments. The decline in global concentrations over the period 2014–2016 was only two thirds as fast as it was over the period 2002–2012. While emissions of CFC-11 from East Asia had increased since 2012, the contribution of that region to the rise in global emissions was not well known. The country or countries in which emissions had increased was not identified in the 2018 assessment.

12. The International Symposium on the Unexpected Increase in Emissions of Ozone-Depleting CFC-11 brought together international experts who exchanged information on various issues related to CFC-11, including feedstocks, production, observations, emissions and their impact. Atmospheric modelling studies of the impact of continued new emissions of CFC-11 concluded that they would have a large impact on the ozone layer if the emissions were sustained at a high level. However, if the new emissions were to abate quickly over the next few years, the impact would be quite minor. The symposium also generated a set of research directions and recommendations for improving the monitoring of ozone-depleting substances and understanding the CFC-11 issues. The report of the symposium was published in the July 2019 newsletter of Stratospheric Processes and their Role in Climate (SPARC)¹⁰ and is also available on the web portal of the Thirty-First Meeting of the Parties.

13. With regard to recent research indicating that 40–60 per cent of the recent increase in emissions originated in eastern China, it was noted that there were not enough monitoring stations to clearly identify other regional sources, although several regions could be excluded. The application of an inter-hemisphere gradient had shown that the increase in emissions was concentrated in the northern hemisphere. In short, while knowledge about the matter was available on a global scale, by hemisphere and for a few regions, more monitoring stations were needed to fill in the gaps, and a study was needed to indicate the best locations for those stations to achieve effective regional monitoring.

2. Technology and Economic Assessment Panel

14. The co-chairs of the task force on unexpected emissions of CFC-11, established under the Technology and Economic Assessment Panel, presented an overview of the preliminary report prepared in response to decision XXX/3.¹¹ The task force analysed, at the global level, the likelihood of potential sources of emissions, eliminated the unlikely sources, identified the remaining potential sources for further consideration in the final report, and also identified information gaps that needed to be bridged in order to clarify assumptions.

15. CFC-11 formerly had been used as a foam-blowing agent for open- and closed-cell foams, an aerosol propellant, a refrigerant for centrifugal chillers, and in smaller amounts in asthma inhalers and tobacco expansion. Alternatives have since replaced CFC-11 for those uses. After the global production and consumption phase-out of CFC-11 (by 1996 in non-Article 5 parties and by 2010 in Article 5 parties), the bank of CFC-11 consisted primarily of closed-cell foams and centrifugal chillers, from which CFC-11 was slowly released into the atmosphere over time.

⁶ For more detailed summaries of the presentations, see UNEP/OzL.Pro.WG.1/41/5, annex III, sect. I.

⁷ Available at <http://conf.montreal-protocol.org/meeting/oewg/oewg-41/presession/SitePages/Home.aspx>.

⁸ Available at <http://conf.montreal-protocol.org/meeting/mop/mop-31/presession/default.aspx>.

⁹ <https://www.nature.com/articles/s41586-019-1193-4>.

¹⁰ Available at <https://www.sparc-climate.org/publications/newsletter/>.

¹¹ Available at <http://conf.montreal-protocol.org/meeting/oewg/oewg-41/presession/>.

16. The task force considered the technical and economic feasibility of 20 potential CFC-11 production routes, noting that the main manufacturing process routes to CFC-11 uses carbon tetrachloride (CTC) as feedstock. The most likely CFC-11 production routes were reported to be CTC to CFC-11, produced in micro-scale plants and using minimal equipment, to make low-grade CFC-11 for use in foam blowing; and/or CTC to CFC-11/12, produced on a large scale in an existing liquid-phase plant, such as an HCFC-22 plant.

17. Based on updated modelling and analysis of CFC-11 emissions and banks, the task force found it unlikely that past production, historical usage and the resulting banks could account for the unexpected increase in CFC-11 emissions observed in the atmosphere.

18. The evaluation of a number of scenarios led to the elimination of most of them either because they did not explain the unexpected emissions or they were not technically or economically feasible, with the remaining plausible scenario being the use of newly produced CFC-11 in closed-cell polyurethane foams. It was also noted that CFC-11 production would also require CTC production. The co-chairs indicated that the task force would continue to refine its analysis for its final report to the Thirty-First Meeting of the Parties.

B. Atmospheric monitoring, research and systematic observation

19. The existing infrastructure for research and systematic monitoring of the ozone layer under the ozone treaties falls primarily under the Vienna Convention, with the main components being the Conference of the Parties, the Ozone Research Managers and the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention for the Protection of the Ozone Layer along with its Advisory Committee. The work of those bodies on the issue at hand and related information are summarized below. The contact group's discussions emphasized in particular the possibility of additional monitoring, the role of the Ozone Research Managers and its connection to the Scientific Assessment Panel and the role of the Trust Fund.

1. Conference of the Parties

20. Pursuant to Article 6 of the Vienna Convention, the functions of the Conference of the Parties include the following:

- (a) To review scientific information on the ozone layer, its possible modification and on possible effects of any such modification;
- (b) To adopt programmes for research, systematic observations, scientific and technological cooperation, the exchange of information and the transfer of technology and knowledge;
- (c) To establish relevant subsidiary bodies necessary to implement the Convention;
- (d) To seek, where appropriate, the services of competent international bodies and scientific committees such as the World Meteorological Organization (WMO) and the World Health Organization, in scientific research and systematic observations and to make use as appropriate of information from those bodies and committees.

21. Pursuant to paragraph 3 of annex I to the Vienna Convention, parties are also required to cooperate, "taking into account the particular needs of the developing countries, in promoting the appropriate scientific and technical training required to participate in the research and systematic observations", with particular emphasis on "the intercalibration of observational instrumentation and methods with a view to generating comparable or standardized scientific data sets".

2. Ozone Research Managers

22. By decision VC I/6, on subsidiary bodies, the Conference of the Parties established the meeting of the Ozone Research Managers, who are either government atmospheric research managers or government research managers dealing with the health and environmental effects of ozone modifications. Their role is to review ongoing national and international research and monitoring programmes to ensure proper coordination and to identify gaps that need to be addressed. In accordance with decision VC III/8, the Ozone Research Managers meet every three years and produce a report, that includes recommendations for future research and expanded cooperation between researchers in developed and developing countries, for presentation to the Conference of the Parties. The Ozone Research Managers have recognized the need for the scientific community to remain vigilant by continuing to monitor the ozone layer closely and by increasing the community's understanding of existing and new threats (see UNEP/OzL.Conv.11/5). They usually adopt

recommendations in the following four areas relating to ozone monitoring: research needs,¹² systematic observations,¹³ data archiving and stewardship,¹⁴ and capacity-building.¹⁵ The next meeting of the Ozone Research Managers is scheduled to be held from 1 to 3 April 2020, in time for the report of the meeting to be considered by the Conference of the Parties at its twelfth meeting, in November 2020.

23. With respect to interactions between the Ozone Research Managers and Montreal Protocol institutions, in decision VC II/4, the Conference of the Parties requested the United Nations Environment Programme (UNEP) and WMO to ensure that the assessment panels of the Montreal Protocol cooperate closely with the Ozone Research Managers, to which end the panel co-chairs should be invited to participate in the meetings of the Ozone Research Managers. The Conference of the Parties has taken note of the reports of the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the Technology and Economic Assessment Panel in a number of its decisions.¹⁶ In addition, in paragraph 4 of decision VC VI/2, the Conference of the Parties specifically anticipated interaction between the Ozone Research Managers, the Scientific Assessment Panel and the Environmental Effects Assessment Panel in particular, in order to support activities other than monitoring column ozone, ozone profiles and ultra-violet (UV) radiation in developing countries and in countries with economies in transition, with a view to improving the observation network and relevant research (see also para. 27 below).

24. To date, the Conference of the Parties has adopted a number of decisions¹⁷ in which it noted or endorsed the recommendations of the Ozone Research Managers and encouraged parties to implement them, as appropriate. Several of those recommendations related to improving observational capacities, including through the development and implementation of new observational capabilities such as aircraft and satellite-based measurements, the expansion of ground-based ozone stations, especially in specific regions, and the prioritization of new measurement locations to optimize the co-location of ozone measurement with the observation of other atmospheric species and parameters. The decisions also dealt with the investigation of stratospheric and tropospheric processes and the investigation of the interactions between ozone and climate, UV-B measurements and research, data acquisition and archiving, and communications between national ozone focal points and meteorological agencies.

3. Global atmospheric monitoring systems

25. Several decisions of the Conference of the Parties included references to global ozone monitoring systems, in particular those established under WMO. A short description of those systems and other existing systems is provided below.

26. The Global Atmosphere Watch programme, established under WMO in 1989,¹⁸ focuses primarily on the systematic global observation of the chemical composition and related physical characteristics of the atmosphere¹⁹ through a network of global ozone observing stations. In its early decisions, the Conference of the Parties²⁰ encouraged voluntary contributions to the WMO Special Fund for Environment Monitoring for the Global Ozone Observing System in order to expand the

¹² There is a need in particular for research on chemistry-climate interactions and monitoring of the effects of the Montreal Protocol; on processes influencing stratospheric evolution and links to climate; and on changes in ultra-violet (UV) radiation and the impact of changes in ozone-depleting substances.

¹³ Such systematic observations underline the importance of continued observation of key trace gases, UV radiation, and parameters characterizing the role of chemical, radiative and dynamic processes, in order to verify that the ozone layer is recovering as expected from the impact of ozone-depleting substances and to understand interactions with changing climate.

¹⁴ This reflects the need for improved processes in the submission and accessibility of data, enhanced coordination among data centres and the allocation of resources to long-term data archiving activities.

¹⁵ This involves identifying the needs of individual countries, supporting opportunities to provide training in developing countries in the monitoring of ozone, and making efforts to bridge gaps between different communities, such as those between national ozone officers and representatives of national meteorological agencies.

¹⁶ Decisions VC II/5, VC III/2, VC IV/2 and VC V/2.

¹⁷ Decisions VC II/4, VC III/5, VC IV/3, VC V/3, VC VI/2, VC VII/2, VC VIII/2, VC IX/2, VC X/2 and VC XI/1.

¹⁸ The Global Ozone Observing System was established in 1957 by WMO to measure total atmospheric ozone. In 1989, the system was merged with another monitoring system, the Background Air Pollution Monitoring Network, to form the Global Atmosphere Watch programme.

¹⁹ See <https://public.wmo.int/en/programmes/global-atmosphere-watch-programme>.

²⁰ Decisions VC II/9, VC III/5 and VC IV/3.

network in developing countries. At the same time, the Global Environment Facility also took a decision to fund a number of global ozone observation stations.²¹ The Conference of the Parties has adopted a number of decisions relating to the expansion or maintenance of the network²² in different regions (including continental Asia, the tropics, the southern hemisphere and polar regions), the maintenance and calibration of existing stations, and the need to ensure that experts from developing countries are trained in the technology deployed for that purpose.

27. In addition to Global Atmosphere Watch, other systems exist for atmospheric monitoring, some of which are already used to monitor the stratospheric ozone and/or chemical compounds and atmospheric conditions affecting ozone concentrations. These include the monitoring system of the United States National Oceanic and Atmospheric Administration,²³ the Advanced Global Atmospheric Gases Experiment,²⁴ the Network for the Detection of Atmospheric Composition Change,²⁵ and the Reference Upper-Air Network of the Global Climate Observing System.²⁶ Other existing monitoring systems that do not currently monitor ozone may also offer possibilities for global ozone monitoring.

4. General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention

28. The Conference of the Parties, in decision VC VI/2 (adopted in 2002), requested UNEP in consultation with WMO to establish an extrabudgetary fund for receiving voluntary contributions from parties and international organizations. The primary aim of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention for the Protection of the Ozone Layer is to provide complementary support for the continued maintenance and calibration of the Global Atmosphere Watch ground-based stations for monitoring column ozone, ozone profiles and UV radiation in developing countries and in countries with economies in transition, to address the need for balanced global coverage. In addition, consideration is given to supporting other activities identified by the Ozone Research Managers, in consultation with the co-chairs of the Scientific Assessment Panel and the Environmental Effects Assessment Panel, for the improvement of the observation network and relevant research.

29. In the same decision, parties were also invited to make voluntary contributions in kind for the purpose of financing activities on research and systematic observations relevant to the Vienna Convention, in developing countries and countries with economies in transition.

30. The Trust Fund was established in February 2003 and is administered jointly by UNEP and WMO.²⁷ As at 31 August 2019, a total of \$535,311 had been provided voluntarily by parties to support the activities of the Trust Fund since its inception.²⁸ Of that amount, \$516,877 had been disbursed or allocated for ongoing, completed or planned activities. The amount of funds currently available for

²¹ As indicated in decision VC III/5 of the Conference of the Parties. According to the website of the Global Environment Facility (GEF), a global project entitled “Global monitoring of greenhouse gases including ozone” was approved in 1991 with GEF funding of \$4.8 million. The objective of the project was to establish six new surface-based atmospheric monitoring stations for the Global Atmosphere Watch programme in strategically located places in order to provide more complete global coverage to monitor and assess the environmental health of the atmosphere and to determine how greenhouse gases and atmospheric ozone could change climate. Under the project, which was implemented by WMO in cooperation with the United Nations Development Programme (UNDP), six new stations (in Algeria, Argentina, Brazil, China, Indonesia and Kenya) were built, instrumented and staffed. A second project entitled “Monitoring and research network for ozone and greenhouse gases in the southern cone”, again implemented by WMO in cooperation with UNDP, was approved in 1993 with GEF funding of \$1.9 million. Both projects were completed in 2003.

²² Decisions VC I/4, VC II/4, VC II/9 and VC IX/2.

²³ <https://www.esrl.noaa.gov/gmd/ozwv/>.

²⁴ <https://agage.mit.edu>.

²⁵ <http://www.ndaccdemo.org/about>.

²⁶ <https://www.gruan.org/>.

²⁷ The terms of a memorandum of understanding signed between the organizations in 2005 set out the institutional arrangements for making decisions on the allocation of funds from the Trust Fund. The Conference of the Parties requested UNEP and WMO to continue their cooperation with regard to the Trust Fund pursuant to the terms set out in that memorandum and on the understanding that the agreement could be changed as necessary to meet evolving needs and conditions.

²⁸ This amount includes direct financial contributions to the Trust Fund from 14 parties and a contribution by one party to WMO on the condition that the funds be used for activities under the Trust Fund.

future activities is \$18,434. The parties have recognized the important role of the Trust Fund, notwithstanding the limited resources that it has deployed.²⁹

5. Advisory Committee

31. By decision VC X/3, the Conference of the Parties requested the Ozone Secretariat and WMO to establish a small advisory committee for the Trust Fund, consisting of not more than 10 members. The membership would comprise the two co-chairs of the Scientific Assessment Panel, the two co-chairs of the meeting of the Ozone Research Managers, one representative of the Ozone Secretariat, up to five scientists and experts in ozone observation, and one representative of WMO as an observer, striving for equitable geographical and gender representation. The mandate of the Advisory Committee is described in detail in decision VC X/3, and comprises three key tasks: development of a long-term strategy and implementation objectives and priorities; development of a short-term action plan to take into account the most urgent needs of the Global Ozone Observing System; and ensuring quality control of individual project proposals developed under the Trust Fund, taking into account regional balance and the possibility of complementary funding.

32. Decision VC XI/2 (2017) requested the Advisory Committee of the Trust Fund, with the assistance of the WMO and the Secretariat, to implement its long-term strategy and short-term plan of action for the Trust Fund, paying particular attention to:

- (a) Identifying gaps and needs in research and monitoring of ozone and related climate variables and parameters;
- (b) Exploring the use of new and cost-effective instrumentation to replace ageing instruments with regard to the projects under consideration by the Advisory Committee;
- (c) Fostering stronger relationships with scientific institutions and related global networks to build capacity and the infusion of knowledge for the activities under its consideration;
- (d) Developing a strategic plan for mobilizing public and financial resources and in-kind contributions for the Trust Fund, to safeguard necessary research and observation activities.

33. The Advisory Committee is currently working on developing a brief document on a long-term strategy for the Trust Fund. A draft strategy is planned to be presented to the Ozone Research Managers at their eleventh meeting, in April 2020, for discussion and further recommendations, while a final version of the strategy will be presented to the Conference of the Parties at its twelfth meeting, in November 2020, for its consideration.

C. Montreal Protocol provisions and actions by parties

34. As outlined in section II of document UNEP/OzL.Pro.WG.1/41/3, all parties to the Montreal Protocol have committed to undertake the following measures provided for under the Protocol:

- (a) Compliance with the control measures for controlled substances, as specified in Articles 2, 2A to 2J and Article 5, for non-Article 5 and Article 5 parties, respectively. This is regularly reviewed by the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol and specific instances of possible non-compliance are dealt with in accordance with the non-compliance procedure established under Article 8 of the Protocol;
- (b) Controls on trade with non-parties and parties, as specified in Articles 4 and 4A, and the establishment of licensing systems, as required by Article 4B. Controls on trade with non-parties and the establishment of licensing systems have been under review by the Implementation Committee, resulting in recommendations and decisions relating to compliance with the provisions;
- (c) Reporting of baseline data and annual data under Article 7 and related decisions of the Meeting of the Parties. Reporting of data under Article 7 is regularly reviewed by the Implementation Committee, resulting in recommendations and decisions relating to compliance;
- (d) Biennial reporting on activities relating to research, development, public awareness and exchange of information under Article 9. This reporting is no longer strictly followed up on by the

²⁹ See, for example, decisions VC X/3 and VC XI/2.

Implementation Committee,³⁰ although in decision XVII/24 parties were urged to continue to submit such information;

(e) Taking steps to ensure the transfer of technology to Article 5 parties, under fair and favourable conditions, in accordance with Article 10A. This is not dealt with as a compliance issue under Article 8, but can be brought to the attention of the Meeting of the Parties by individual parties, pursuant to paragraph 6 of Article 5.

35. The use of the phrase “each party” in Articles 2A to 2J and Article 5 makes it clear that the control measures set out in those articles are applicable to all parties. In addition, Article 2 (9) (d) provides that decisions on any adjustments are binding on all parties, further emphasizing the equal treatment of all parties in respect of their obligations under the control measures.

36. With respect to the need for measures adopted to be proportional to the financial resources available, especially in Article 5 countries, paragraph 5 of Article 5 of the Protocol provides that developing the capacity of Article 5 parties to fulfil their obligations under the control measures depends on the effective implementation of a financial mechanism and the transfer of technology.

37. Non-Article 5 parties, under paragraph 6 of Article 10, are responsible for making contributions to finance the Multilateral Fund in order to provide financial and technical cooperation to Article 5 parties. This is not dealt with as a compliance issue but is dealt with separately by the Meeting of the Parties and the Executive Committee of the Multilateral Fund.

38. Article 5 parties, in turn, have certain additional obligations under the terms of their funding agreements concluded with the Executive Committee of the Multilateral Fund, as described in some detail in document UNEP/OzL.Pro.WG.1/41/3 and in the background document that was made available for that meeting. This is not a compliance issue falling under the responsibility of the Implementation Committee (unless it results in a situation of non-compliance with the data reporting requirements or control measures of the Protocol), but is rather to be followed up on through the institutions of the Multilateral Fund.

39. Sections 1–4 below address specific aspects of the above-mentioned commitments by the parties, outlining the underlying framework and how those commitments are implemented and enforced.

1. Control of trade, including licensing, and illegal trade

(a) Framework

40. Article 4, among other things, bans the trade in controlled substances with States not party to the Montreal Protocol, while paragraph 8 of the Article provides some flexibility where non-parties have been determined by a Meeting of the Parties to be in full compliance with the control measures of the Protocol and have submitted Article 7 data to that effect.

41. Under Article 4B of the Protocol, parties are required to establish and implement a system for licensing the import and export of new, used, recycled and reclaimed controlled substances in Annexes A, B, C, E and F within specified timeframes. Pursuant to paragraph 3 of that Article, a party is required to report to the Secretariat on the establishment and operation of its licensing system within three months of the date of its introduction.

42. The Protocol does not establish specific requirements for licensing systems. However, paragraph 3 of decision XVII/16 notes that licensing systems should provide for “the control of imports, exports, re-exports (i.e., exports of previously imported substances) and, if technically and administratively feasible, transit of all controlled ozone-depleting substances, including mixtures containing them, regardless of whether the party concerned is or is not recognized as the producer and/or importer, exporter or re-exporter of the particular substance or group of substances”. In addition, in decision IX/8, the parties decided that the licensing systems should provide sufficient information to facilitate reporting under Article 7, and should assist parties in the prevention of illegal trade in controlled substances, including through notifications by exporting countries to importing countries, and allowing for cross-checking of information. The parties have adopted decisions highlighting the need for disaggregated data to be provided on licensing systems, identifying annexes and groups of controlled substances (e.g., decision XXIII/31), and focusing on the need to establish

³⁰ In paragraph 39 of the report of the twenty-ninth meeting of the Implementation Committee (UNEP/OzL.Pro/ImpCom/29/3), it is noted that “the Implementation Committee had reached an informal understanding that the requirements of the Article were fulfilled by the regular reports from the Assessment Panels and WMO”.

licensing systems to monitor exports as well as imports of ozone-depleting substances (e.g., decision XXII/19).

43. The Secretariat does not have any role to play in verifying the establishment or operation of licensing systems, but simply receives and communicates information from parties on their progress in that regard. Paragraph 4 of Article 4B requires the Secretariat to periodically prepare and circulate to all parties a list of parties that have reported to it on their licensing systems.³¹ The Secretariat is also required to forward that information to the Implementation Committee for its consideration and so that it can make appropriate recommendations to the parties.

44. There is no explicit definition of illegal trade, either in the text of the Montreal Protocol itself or in the decisions of the Meeting of the Parties. While legal interpretation of the Protocol is the responsibility of the parties,³² in the light of specific Articles of the Protocol and decisions of the Meeting of the Parties, the following can be regarded as illegal trade:

(a) The import and export of controlled substances between parties and non-parties (with an exception for non-parties where the Meeting of the Parties has determined that they are in compliance with the control measures and they have reported data under Article 7 confirming this)³³ before the phase-out of a particular substance;

(b) The export of used, recycled and reclaimed substances other than for the purposes of destruction, after the phase-out date for those substances by a party that, despite its best efforts, is unable to cease production of that substance for domestic consumption other than for essential uses;³⁴

(c) The import or export of controlled substances without a licence;³⁵

(d) The import and export of controlled substances after the phase-out of a particular substance, other than for exempted uses approved by the Meeting on the Parties.

45. In accordance with decision XXII/10, illegal trade could involve ozone-depleting substances, mixtures or products containing ozone-depleting substances.

46. In addition, illegal trade could include any action that, in terms of a party's domestic legislation, is considered to be illegal trade in controlled substances, such as the import or export of a controlled substance in excess of an assigned quota.

(b) Implementation and enforcement

47. The Implementation Committee and the Meeting of the Parties have considered the issue of non-compliance with the controls on trade with non-parties under Article 4 in a number of cases.³⁶ The Implementation Committee has also looked into the question of situations where trade with non-parties may be allowed under paragraph 8 of Article 4.³⁷ Decisions on trade issues by the Meeting of the Parties include decisions relating to paragraph 8 of Article 4 that allow trade with non-parties;³⁸ decisions on avoiding the unwanted import of products and equipment relying on controlled substances;³⁹ decisions relating to free trade zones⁴⁰ and trans-shipment;⁴¹ and decisions relating to controlled substances used to services ships, including ships from other flag States.⁴²

48. Licensing systems have been established under Article 4B by all parties for all substances listed in Annexes A, B, C and E. The establishment of licensing systems for hydrofluorocarbons (HFCs) under the Kigali Amendment is in progress for those parties for which the amendment has entered into force.

³¹ See, for example, UNEP/OzL.Pro.31/INF/5.

³² Decision IV/5.

³³ See Article 4, para. 8.

³⁴ See Article 4A.

³⁵ See Article 4B.

³⁶ See recommendation 45/5 and decision XXII/16; recommendation 45/7 and decision XXII/13; recommendation 46/6 and decision XXIII/26; and recommendation 47/9 and decision XXIII/27.

³⁷ See, for example, recommendations 46/7 and 47/7.

³⁸ See, for example, decisions IV/17B, IV/17C, V/3, VI/4, XVII/3, XVII/4 and XXIV/2, as well as clarifications of the meaning of "State not party to this Protocol" in decisions XV/3 and XX/9.

³⁹ See, for example, decision XXVII/8.

⁴⁰ See, for example, decision III/9, para. 7.

⁴¹ Decisions IV/14 and IX/34.

⁴² Decisions XXIII/11 and XXIV/9.

49. There is no requirement for parties to share details regarding their licensing systems, either under the Protocol or under decisions of the Meeting of the Parties. However, in response to interest expressed by a number of parties and in the context of enhancing the data it makes available on its website, the Secretariat is working towards including links to licensing laws and regulations in the country profile pages of its website for those parties that wish to make that information available.

50. The Implementation Committee and the Meeting of the Parties have made recommendations and adopted decisions, respectively, concerning the establishment of licensing systems. These cover such aspects as the review of the status of establishment of licensing systems (e.g., recommendation 49/12 and decision XXIV/17) and cases of non-compliance with the requirement to establish licensing systems, including the request for plans of action to return to compliance with the provision (e.g., recommendation 39/39 and decision XIX/26). Other decisions urge parties to ensure that their licensing systems are implemented and enforced effectively (e.g., decisions XVI/32, XVII/23 and XVIII/35) and that they are structured in accordance with Article 4B (e.g., decisions XIX/26, XX/14, XXI/12 and XXII/19).

51. Where a party's plan of action to return to compliance includes more specific details on the licensing system (such as the establishment of a quota system as provided for in decision XV/36, or bans on imports of equipment containing ozone-depleting substances such as that specified in decision XXVII/11), the Implementation Committee will look beyond the mere fact of the establishment of the licensing system to assess the affected party's compliance with that additional commitment (see, for example, recommendations 36/2 and 62/3). Beyond this, the Implementation Committee and the Meeting of the Parties have not looked at the establishment and operation of individual licensing systems in greater detail.

52. Decision IX/8 tasked the Secretariat with maintaining an updated list of focal points for licensing systems to facilitate information-sharing among parties. That list is provided to the parties ahead of each Meeting of the Parties and is kept up to date on the country profile pages of the Secretariat's website. In the same decision, the Secretariat and the implementing agencies were requested to take steps to assist parties in the design and implementation of their licensing systems, and the Multilateral Fund was requested to provide appropriate funding. The Secretariat provides advice to individual parties upon request on the establishment and implementation of their licensing systems. In response to paragraph 7 of decision XIV/7, the Secretariat compiles and submits to each Meeting of the Parties a list of cases of illegal trade reported to it by parties since the previous meeting. That information is also made available on the Secretariat's website.

53. Under their funding agreements with the Executive Committee, Article 5 parties that receive support for the establishment and strengthening of their licensing systems may commit to specific actions in this regard, which may be subject to monitoring and verification provided for under the agreements. The monitoring and verification of implementation by parties under their funding agreements is addressed in some detail in document UNEP/OzL.Pro.WG.1/41/3 and in the background document provided by the secretariat of the Multilateral Fund for the forty-first meeting of the Open-ended Working Group. For example, the annual country programme data report submitted by the parties to the Multilateral Fund secretariat includes the status of licensing and quota systems. Moreover, approval of funding for tranche requests for hydrochlorofluorocarbon (HCFC) phase-out is conditional upon confirmation that an enforceable licensing system is in place that is capable of ensuring the country's compliance with the phase-out schedule. Verification activities include the review of legislation, policies and procedures on imports and exports of controlled substances; the provision of detailed information on licensing and quota systems; the comparison of licences issued and actual imports for each importer; the review of customs codes; and the identification of room for improvement in implementation. Evaluation reports produced for the Fund have repeatedly emphasized the efficacy of well-functioning licensing and quota systems in controlling trade and reducing illegal trade, thereby achieving compliance with control measures.⁴³

54. Beyond the establishment of the licensing system, the Montreal Protocol does not mandate any specific enforcement actions to be taken by parties in their implementation of the Protocol. Enforcement of the licensing system is the responsibility of each party. However, the decisions of the Meetings of the Parties⁴⁴ do make recommendations for actions that parties could take domestically on a voluntary basis to enforce the Protocol. Among them are decisions that recommend actions to strengthen licensing systems and prevent illegal trade, including decisions on labelling and

⁴³ For further information, see section III.B.5 of document UNEP/OzL.Pro.WG.1/41/3 and the background document provided for the forty-first meeting of the Open-ended Working Group.

⁴⁴ These decisions are described in section II.C of document UNEP/OzL.Pro.WG.1/41/3.

harmonized codes to facilitate the identification of controlled substances;⁴⁵ decisions that recommend particular actions by parties in an effort to curb illegal trade;⁴⁶ and decisions requesting that the parties report particular information on a voluntary basis. For example, most recently, decision XXX/12 urged exporting parties and encouraged importing parties to identify the sources and designations of their exports and imports, respectively.

55. In order to facilitate the exchange of information, in paragraph 7 of decision XIV/7 parties were invited to report to the Ozone Secretariat fully proved cases of illegal trade in ozone-depleting substances. It stated that the illegally traded quantities should not be counted against a party's consumption provided that the party does not place said quantities on its own market and requested the Secretariat to collect any information on illegal trade received from the parties and to disseminate it to all parties, which it does in the form of an information note for each Meeting of the Parties and in information made available on its website.

56. In addition, decision XXIV/12, on differences between data reported on imports and data reported on exports, made reference to the informal prior informed consent mechanism, that was established under the auspices of the UNEP Compliance Assistance Programme to support the enforcement of licensing systems for ozone-depleting substances, and invited parties to consider participating in it to improve the quality of information on their potential imports of controlled substances. That and other compliance assistance tools were described in annex II to the background document that was made available to the parties at the forty-first meeting of the Open-ended Working Group.

2. Data reporting

(a) Framework

57. Under paragraphs 1 and 2 of Article 7, parties are required to report statistical data on production, imports and exports of each controlled substance, or best possible estimates of such data where actual data are not available, for defined baseline periods and within specified time frames. Paragraph 3 of the Article requires parties to provide annual statistical data on production, amounts used for feedstocks, amounts destroyed by approved technologies and imports from and exports to both parties and non-parties, respectively, for each controlled substance. Data on amounts of methyl bromide used for quarantine and pre-shipment are also required, as well as data on imports and exports of recycled Annex A, group II substances; Annex C, group I substances; and emissions of Annex F, group II substances for each facility.

58. Additional reporting is provided for in a handful of decisions of the Meetings of the Parties, dealing with essential-use nominations for controlled substances other than halons for 1996 and beyond (decision VI/9), laboratory and analytical uses (see annex II to the report of the sixth Meeting of the Parties) and process agents (decisions X/14, XV/7, XVII/6 and XXI/3).

59. Parties are also required to report to the Secretariat on the establishment of their licensing systems under paragraph 3 of Article 4B and under Article 9 of the Protocol, which provides that parties should submit every two years a summary of their activities with respect to research, development and the exchange of information.

60. Each year, the Implementation Committee and the Meeting of the Parties have considered the status of compliance by parties with data-reporting provisions, which has resulted in recommendations and decisions in which they have noted levels of compliance and found individual parties to be in non-compliance with those provisions.⁴⁷

61. Document UNEP/OzL.Pro.WG.1/41/3 set out a summary of decisions that provide for voluntary reporting by parties on a number of issues, including those related to trade and the prevention of illegal trade in controlled substances as described above.

62. In addition to Article 7 data reporting, Article 5 parties that receive support through the Multilateral Fund submit annual country programme data to the Fund secretariat. The information provided is used to confirm their compliance with their legal obligations under the applicable funding agreements. As described in document UNEP/OzL.Pro.WG.1/41/3, that country programme data contains more detail than the Article 7 data, and is subject to verification as provided for under the agreements. Further details on reporting, monitoring and verification under the Multilateral Fund are

⁴⁵ See, for example, decision XIV/7, para. 3.

⁴⁶ See, for example, decision XIX/12.

⁴⁷ See, most recently, decision XXX/13.

provided in the background document made available to the forty-first meeting of the Open-ended Working Group.

(b) Implementation and enforcement

63. Compliance by parties with data-reporting provisions such as those under Article 7 clearly falls under the jurisdiction of the Implementation Committee and is the subject of regular decisions of the Meeting of the Parties.⁴⁸ The decisions typically take the approach of naming the parties concerning, noting that they are in non-compliance with the data-reporting provisions; urging them, where appropriate, to work closely with the relevant implementing agencies in order to report their data as a matter of urgency; and requesting the Implementation Committee to review the situation at its next meeting. In several decisions on non-compliance with provisions on the reporting of baseline data, the Meeting of the Parties has requested the Secretariat to offer assistance to the parties concerned in calculating estimates of their data.

64. For Article 5 parties, compliance with information-reporting provisions under the Multilateral Fund is linked with funding: in order to qualify for the next tranche of funding, a party must provide a report on its implementation that demonstrates that it is meeting its targets. Failure to demonstrate that targets have been met can result in funding being withheld.

3. Illegal production

(a) Framework

65. As with illegal trade, neither the Montreal Protocol nor the decisions of the Meeting of the Parties provide a formal definition of illegal production. Production is mentioned in the context of the control measures defined in Articles 2, 2A to 2J and Article 5. That would imply that illegal production consists of the production of a controlled substance in excess of the established limits during a phase-down or phase-out, or production of a substance that has already been phased out, without an exemption granted for a specified essential or critical use. In addition, illegal production could include any production that, in terms of a party's domestic legislation, is considered to be illegal.

66. However, production in excess of the allowed level of production of a substance for a given year does not automatically result in a non-compliance issue. Decisions XVIII/17 and XXII/20 provide for three scenarios in which reported excess consumption or production would not receive follow-up under the non-compliance procedure, even though parties are required to report such cases. The Secretariat maintains a record of those cases and provides reports thereon to the Implementation Committee for information only. The three scenarios involve excess consumption or production by a party in a given year:

- (a) For domestic destruction or export for destruction in a future year;
- (b) For domestic feedstock use or export for that use in a future year;
- (c) For export to meet the basic domestic needs of developing countries in a future year.

(b) Implementation and enforcement

67. Illegal production that results in a situation of non-compliance with the control measures under the Protocol may be considered by the Implementation Committee under the non-compliance procedure if one of the three existing triggers spelled out in the non-compliance procedure is activated, as described in paragraph 78 below. The Committee's consideration of a number of such cases has resulted in the adoption of related decisions by the Meeting of the Parties. Any national-level measures to control illegal production are purely a matter of national implementation and enforcement.

68. Decisions of the Meeting of the Parties relating to production deal with the following topics: non-compliance with production limits (e.g., decisions VIII/25, XIII/17, XIX/21, XIII/21, XXV/2 and XXVI/15); formulating guidelines for funding the phase-out in the production sector (decision X/17); minimizing production of CFCs by non-Article 5 parties to meet the basic domestic needs of Article 5 parties through written affirmations from the latter, and requesting the Implementation Committee to review the parties' implementation of those affirmations (decisions XVII/12 and XIX/28); non-compliance with regard to the transfer of CFC production rights (decisions XVIII/25 and XIX/21); and production for essential uses (e.g., decision XXVI/2 on metered-dose inhalers).

⁴⁸ See, for example, decision XXX/13 relating to annual reporting, and decisions XV/16 and XXIII/25 relating to baseline reporting.

69. Under Multilateral Fund agreements, Article 5 parties that have received assistance from the Fund are required to report data relating to their production of controlled substances as part of their country programme data. Verification in the production sector differs according to whether production for exempted uses may continue after phase-out. For example, where production may continue after phase-out, producer export records are cross-checked against customs records. Where production will not continue after phase-out, closures of production facilities are documented, including through photographic evidence that key equipment has been dismantled. Monitoring and reporting take place until the end of a project only, not thereafter. Evaluations produced for the Multilateral Fund have flagged the need for additional steps to ensure that CFC plants that were not dismantled but converted to HCFC production did not revert to CFC production, and identified the use of quotas for producers as an important policy measure.⁴⁹

4. Polyols

(a) Framework

70. Decision XXII/9 of the Meeting of the Parties dealt with HCFCs in pre-blended polyols, following discussions on the issue during the thirtieth meeting of the Open-ended Working Group. The decision simply noted with appreciation the cooperative manner in which the Executive Committee of the Multilateral Fund had addressed that issue in its decision 61/47, by agreeing on a framework for eligible incremental costs for parties operating under paragraph 1 of Article 5 in their transition from the use of HCFCs in pre-blended polyols, and affirmed that the issue had been addressed to the satisfaction of the parties.

71. Decision 61/47 of the Executive Committee confirmed that the phase-out of HCFC-141b contained in pre-blended polyol systems that were imported and/or manufactured domestically, and counted as consumption under Article 7, was eligible for assistance according to existing guidelines. It provided for funding to those parties for the import of HCFC-141b contained in pre-blended polyols, which had not been counted as consumption under Article 7, through the provision of a sector plan for the complete phase-out of the use of HCFC-141b in imported pre-blended polyol systems, and subject to a commitment from the country to put in place regulations or policies banning the import and/or the use of HCFC-141b in pre-blended polyol systems. Article 5 Parties with eligible enterprises manufacturing HCFC-141b pre-blended polyol systems would be provided assistance calculated on the basis of consumption of HCFC-141b sold domestically, on the understanding that the full consumption of HCFC-141b by those enterprises manufacturing pre-blended polyol systems would be deducted from the starting point.

(b) Implementation and enforcement

72. The treatment of polyols is not provided for under the Montreal Protocol or the decisions of the Meeting of the Parties, and the treatment varies depending on national legislation. The data reported by parties to the Multilateral Fund may include data on polyols.

73. The observations provided by the secretariat of the Multilateral Fund and included in the annex to the present document contain two suggested actions relating to the export of ozone-depleting substances contained in pre-blended polyols (requesting parties that received assistance from the Multilateral Fund to report exports and the destinations of those exports; and requesting the Fund secretariat to summarize those reported exports in its report on country programme data), but these relate only to Article 5 parties.

D. The compliance mechanism

74. The sixty-third meeting of the Implementation Committee, to be held on 2 November 2019, will consider a discussion paper prepared by the Secretariat in response to the Committee's request. As recorded in paragraph 49 of the report of the sixty-second meeting of the Implementation Committee (UNEP/OzL.Pro/ImpCom/62/4), the Secretariat was asked to prepare a document "that would help the Committee reflect on how to deal with illegal production and illegal trade, identifying possible gaps in the non-compliance procedure, challenges, tools, and ideas and suggestions for improvement, for consideration by the Committee at its sixty-third meeting."

75. Document UNEP/OzL.Pro.WG.1/41/3 provided a detailed description of the compliance mechanism, including the means by which matters could be brought to the attention of the Implementation Committee and an analysis of the types of issues considered by the Committee to date.

⁴⁹ See UNEP/OzL.Pro.WG.1/41/3, sect. III.B.5.

It also described the types of recommendations adopted by the Committee and relevant decisions adopted by the Meeting of the Parties. A summary of the key points is provided below.

76. The basis for the compliance mechanism is Article 8 of the Montreal Protocol, which allowed for the establishment of appropriate procedures and institutional mechanisms for determining non-compliance with the Protocol and for the treatment of parties found to be in non-compliance. The non-compliance procedure was adopted on an interim basis by decision II/5 of the Meeting of the Parties, established on a permanent basis in 1992 by decision IV/5, and amended in 1998 by decision X/10 and annex II to the report of the Tenth Meeting of the Parties (UNEP/OzL.Pro.10/9). As part of the non-compliance procedure, the Meeting of the Parties established the Implementation Committee and defined its mandate, the means by which matters could be brought to the attention of the Committee and the process for its consideration of compliance issues.

77. The Implementation Committee, composed of 10 members elected for two-year periods based on equitable geographical distribution, meets twice per year to consider matters related to compliance. The Committee's functions, defined in paragraph 7 of the non-compliance procedure, include considering reports on possible non-compliance, requesting further information where needed, identifying facts and possible causes of individual cases of non-compliance, and making appropriate recommendations to the Meeting of the Parties. The Committee may undertake information-gathering in the territory of a party at the invitation of the party concerned, and is also responsible for maintaining an exchange of information with the Executive Committee of the Multilateral Fund. Paragraph 8 of the procedure requires the Committee to consider information referred to it with a view to securing an amicable solution of the matters on the basis of respect for the provisions of the Montreal Protocol.

78. Matters may be brought to the attention of the Implementation Committee in three ways:

(a) By parties with reservations concerning another party's implementation of its obligations under the Montreal Protocol, following the process set out in paragraphs 1 and 2 of the non-compliance procedure;

(b) By the Secretariat where, in the course of preparing its report to the Implementation Committee and the Meeting of the Parties (in accordance with Article 12 (c) of the Protocol, concerning data reported under Articles 7 and 9), it becomes aware of possible non-compliance by any party with its obligations under the Protocol, following the process set out in paragraph 3 of the non-compliance procedure;

(c) By a party itself, where it concludes that it is unable to fully comply with its obligations under the Protocol, by means of a written submission to the Secretariat, following the process set out in paragraph 4 of the non-compliance procedure.

79. The non-compliance procedure ensures due process for parties that are subject to proceedings before the Committee, as described in paragraphs 10 and 11 of the procedure. The issue of confidentiality of information is dealt with in paragraphs 15 and 16 of the procedure.

80. The Committee makes recommendations on matters before it, including recommendations on decisions that the Meeting of the Parties may wish to adopt. The Meeting of the Parties may adopt one or more of the indicative measures specified in annex V to the report of the Fourth Meeting of the Parties (UNEP/OzL.Pro.4/15), including ensuring appropriate assistance to facilitate compliance by parties through technical assistance, technology transfer and financial assistance (measure A); issuing cautions (measure B); and suspending specific rights and privileges under the Protocol (measure C).

81. Section II.E of document UNEP/OzL.Pro.WG.1/41/3 sets out an analysis of the types of issues considered by the Implementation Committee, including non-compliance with data reporting requirements and control measures, compliance with the ban on trade with non-parties, the establishment of licensing systems, and the classification of parties as operating or not operating under Article 5, as well as a range of technical, procedural and formal issues, along with the approaches adopted thereto. Section II.F of that document describes the approaches adopted by the Meeting of the Parties to compliance-related issues. Those include decisions on control measures, decisions on trade (as outlined above), decisions on the reporting of data under Article 7, and decisions on institutional arrangements for the compliance mechanisms, among others. In the case of decisions on non-compliance with control measures, the majority of such decisions have made use of indicative measures A and B, typically recording detailed plans of action to return to compliance and urging

cooperation with implementing agencies, where applicable. Measure C, on the suspension of rights and privileges, was only resorted to in one case.⁵⁰

82. The Implementation Committee, and by extension the Meeting of the Parties, does not consider individual cases of illegal trade, apart from trade with non-parties. Each party is responsible for implementing and enforcing its own licensing system and controlling illegal trade. However, the Committee and the Meeting of the Parties have adopted recommendations on licensing systems that outline actions that the parties may wish to take, such as sharing information. Cases of excess production leading to non-compliance with the control measures have been dealt with under the non-compliance procedure, as has one case of non-compliance with the requirements for the transfer of production among parties.

⁵⁰ See decision VII/18, para. 8 (described in footnote 6 to document UNEP/OzL.Pro.WG.1/41/3).

Annex¹

Extract from the meeting document prepared by the secretariat of the Multilateral Fund for the eighty-third meeting of the Executive Committee, entitled “Overview of current monitoring, reporting, verification and enforceable licensing and quota systems”²

Summary

1. For ease of reference, a summary of the Secretariat’s observations that the Executive Committee may wish to consider are whether or not to:

Ensuring the continuity of PMUs across multi-year projects

- (a) Ensure that there is overlap between two concurrent MYAs to ensure the continuity of PMUs across MYAs, while reiterating the need for separate financial accounting and reporting of the MYAs;
- (b) Modify Appendix 5-A in the template for draft Agreements to include a request that the country and the lead implementing agency specify the role of the NOU and PMU, as relevant, in monitoring and reporting after the completion of the project;

Illegal trade

- (c) Encourage Article 5 countries to report seizures of illegal trade to the Secretariat through the relevant bilateral or implementing agency responsible for the IS project;
- (d) Clarify that the penalty clause stipulated in the Agreement with the country concerned would not be applied in those cases where an Article 5 country reports the seizure of illegally traded controlled substances that are subsequently handled in accordance with domestic legislation (e.g., confiscated, destroyed and/or exported);
- (e) Request the Secretariat to include in the document on CP data and prospects for compliance a section on reported seizures of illegally traded controlled substances;

FTZs

- (f) To request all Article 5 countries that receive IS funding, to report the movement of controlled substances to or from their FTZ to the Secretariat irrespective if the country concerned does not count such movement of controlled substances to/or from FTZ toward the country’s consumption;
- (g) To request the Secretariat to include in the document on CP data and prospects for compliance a section on the reported movement of controlled substances through FTZs;

Export of ODS contained in pre-blended polyols

- (h) Request all Article 5 countries that receive assistance from the Multilateral Fund and that produce or import controlled substances to blend them in pre-blended polyols for export, to report such exports, identifying the country or countries to which the pre-blended polyols are exported to, and the respective quantities of ODS contained therein;
- (i) To request the Secretariat to include in the document on CP data and prospects for compliance a section summarizing those reported exports of ODS contained in pre-blended polyols;

Continued monitoring and reporting of production under non-production Agreements

- (j) To request the Governments of Argentina, the Democratic People’s Republic of Korea, India, Mexico and Venezuela (Bolivarian Republic of), to include a request for funding for annual verification and monitoring of HCFC production until such production has been completely

¹ The present annex has not been formally edited.

² UNEP/OzL.Pro/ExCom/83/38 (paragraphs 67 to 75). This document was provided as an annex to the background document provided by the secretariat of the Multilateral Fund to the forty-first meeting of the Open-ended Working Group of the Parties

phased out either when submitting the following stage of their HPMPs, or when submitting a project to control HFC-23 by-product emissions, whichever comes first;

Clarification of continued reporting under the production sector

- (k) To request all Article 5 countries that received funding for IS and for the phase-out of production of ODS for controlled uses to continue to monitor their compliance with the targets specified in their Agreement with the Executive Committee after the completion of the project, and to report to the Secretariat any instances where the country did not meet those targets or had found cases of illegal production;
- (l) To request the Secretariat to notify the Executive Committee of such cases so that it could decide whether measures or actions would be appropriate;

Changes to the template for Agreements under the production sector

- (m) To make the following changes to the template of future production sector Agreements:
 - (i) To clarify that the lead agency is responsible for assisting the country in cases of possible non-compliance, if so requested by the country, even after the project has been completed;
 - (ii) That the country would continue to monitor its compliance with the targets specified in the Agreement after the completion of the project, and would report to the Secretariat any instances where it did not meet those targets or had found cases of illegal production;
 - (iii) To clarify that in years after the completion of the project, should the country not meet the final phase-out target for the phase-out of controlled substances under the Agreement, the funding associated with the penalty specified in that Agreement would be returned to the Multilateral Fund by the country through the lead agency;

Verification under MYAs

- (iv) To invite bilateral and implementing agencies to include information on all controlled substances found during the regular course of a verification, irrespective of whether the controlled substance is covered by the Agreement for which the verification is being undertaken;
- (v) To request the Secretariat to present an analysis to the 85th meeting of the feasibility for and additional costs of broadening the terms of reference of verifications to include previously phased out controlled substances.

Additional, novel mechanisms to ensure sustained compliance

2. In addition to the observations on the current monitoring, reporting, verification and the regulatory framework summarized in paragraph 67 above, the Secretariat considered three additional mechanisms that to date have not been used under the Multilateral Fund: atmospheric monitoring, random sampling of products or equipment, and monitoring of raw materials needed for the use or production of controlled substances.

Atmospheric monitoring

3. Detection of illegal production of controlled substances is challenging as the entities undertaking such production are likely to have taken steps to conceal their activities. Illegal production facilities will not have licenses and quotas, and may be unknown to the Government authorities monitoring the production of controlled substances. Verifications of production facilities are unlikely to detect such illegal facilities as they are, in all likelihood, unknown. Atmospheric monitoring may be one mechanism to detect such unknown production.

4. Different approaches to atmospheric monitoring are possible. The simplest, and cheapest, is a one-off measurement campaign where gas canister samples are collected from select locations, and sending those canisters to a central laboratory for analysis (with an associated cost on the order of US \$10,000s). More comprehensive field campaigns could involve canister sampling with sampling from mobile platforms (e.g., gas chromatogram-mass spectrometers (GC-MS) mounted in vehicles or airplanes), combined with meteorological measurements and modelling (with associated costs on the order of US \$100,000s to several US \$ million). Such one-off campaigns could lead to the identification of the location of unknown production only in those cases where the one-off campaign coincided with the operation of the unknown production facilities.

5. A network of atmospheric monitoring stations is more appropriate if sustained atmospheric monitoring is desired. The complexity and cost of establishing and operating such a network will vary based on national circumstances. Depending on which substances (and how many) are to be detected, monitoring equipment can be off-the-shelf technology that is relatively easy to operate, maintain and calibrate (e.g., a GC-MS with a cost on the order of US \$10,000s to US \$100,000) to research-grade equipment that requires specialized training to operate, maintain and calibrate (with costs on the order of US \$100,000s to US \$ millions). Co-locating the necessary monitoring equipment in an existing air quality monitoring station will minimize both maintenance and operating costs. The number of monitoring stations required will vary with a number of factors, including the size of the country and the distribution of production facilities across the country.

6. Given the complexity and expense of establishing an atmospheric monitoring network, efforts to do so would likely only make sense in a limited number of cases: where there are reasons to believe there may be substantial, unknown production; where there is availability of the raw materials necessary for such production; and large-scale industrial production of chemicals within which such production could take place. Any efforts to establish an atmospheric monitoring network should complement existing monitoring networks, including the Advanced Global Atmospheric Monitoring Network (AGAGE),³ the observatories⁴ under the Global Monitoring Division of the U.S. National Oceanic and Atmospheric Administration and associated observation sites,⁵ build on existing protocols and methods, and ensure that observations are made available to the scientific research community.

Sampling of products or equipment

7. The two main uses of controlled substances are in refrigeration and air-conditioning (RAC) equipment and in foams. One mechanism that could be used to deter and detect the use of controlled substances that have been phased out is random testing of samples of RAC equipment, foams, and pre-blended polyol systems. The scope, complexity and cost of such an approach could vary substantially, depending on what controlled substance is to be detected, the type of product or equipment to be tested, the size and frequency of sampling, and other factors. Given the complexity and expense of such sampling and testing, such an approach would likely only be appropriate in a limited number of cases where Article 5 countries felt a need for strengthened enforcement and testing. The Secretariat would further note that not all Article 5 countries have laboratories with the equipment necessary to test samples.

Monitoring raw materials needed for the production of controlled substances

8. Another novel mechanism could be monitoring the raw materials needed for use or production of controlled substances. For example, the manufacture of polyurethane (PU) foams requires methylene diphenyl diisocyanate (MDI). Monitoring the sale of MDI, and tracking MDI sales with blowing agent use, can help identify anomalies in PU foam manufacturing. Such monitoring would likely only be appropriate for those Article 5 countries with significant PU foam manufacturing, that produce or import significant amounts of blowing agents (rather than exclusively importing blowing agents contained in pre-blended polyols), and that feel a need for an independent mechanism to monitor blowing agent use.

³ <https://agage.mit.edu/global-network>

⁴ <https://www.esrl.noaa.gov/gmd/about/aboutgmd.html>

⁵ <https://www.esrl.noaa.gov/gmd/dv/site/>

9. Similarly, to the best of the Secretariat's knowledge, anhydrous hydrogen fluoride (AHF) is required for the production of all controlled substances. Mechanisms could be considered to track AHF use in those countries that have fluorine chemical production facilities. The complexity of such mechanisms would vary considerably by country. For a country that produces controlled substances and that has no fluorite mining, a system to track imports of AHF could be considered, noting that AHF has a number of uses beyond the production of controlled substances, including for the production of pharmaceuticals and other products. For those countries that produce controlled substances and that have fluorite mining, establishing a monitoring and tracking system would be considerably more complex. Tracking AHF use would likely only make sense for those countries with substantial capacity to produce controlled chemicals and the country feels the need for an independent mechanism to monitor such production.
