

Summary of the Thirtieth Meeting of the Parties to the Montreal Protocol: 5-9 November 2018

The thirtieth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (MOP 30) convened from 5-9 November 2018 in Quito, Ecuador. MOP 30 was attended by over 500 delegates, including representatives of 144 parties to the Protocol, the members of the Protocol's technical advisory bodies, as well as representatives of UN agencies and programmes, regional organizations, industry and non-governmental organizations (NGOs).

MOP 30 adopted 21 decisions on, *inter alia*: issues important to the January 2019 entry into force of the Kigali Amendment on Hydrofluorocarbons (HFCs), including:

- data reporting issues, including timeline and revised reporting forms, ways to report mixtures and blends, and setting global warming potential (GWP) values for HCFC-123, HCFC-124, HCFC-141, and HCFC-142;
- approved destruction technologies to be used for HFCs;
- Multilateral Fund (MLF) Executive Committee's (ExCom) progress in developing guidelines for the financing of the HFC phase-down; and
- access of Article 5 parties to energy-efficient technologies in the refrigeration, air conditioning and heat pump (RACHP) Sectors.

Other decisions addressed:

- future availability of halons and their alternatives, especially in sectors such as civil aviation;
- nominations for critical-use exemptions for methyl bromide for 2019 and 2020;
- development and availability of laboratory and analytical procedures that can be performed without using substances controlled under the Protocol;
- a proposal to permit essential use exemptions for hydrochlorofluorocarbons (HCFCs) for specific uses by certain parties;
- unexpected emissions of CFC-11 recently detected;
- a review of the work and recommended decisions of the Implementation Committee (ImpCom); and
- a review of the terms of reference, composition, and balance of the scientific and technical advisory bodies.

Through decisions on data reporting, destruction technologies and access to energy-efficient technologies, MOP 30 took key steps to pave the way for implementation of the Kigali Amendment, while its decision on the ExCom cost guidelines for the HFC phase-down ensures the input of all parties to that instrument before the guidelines are finalized. MOP 30 also took action to address the issues raised by the recent discovery of CFC-11 emissions. In addition, the MOP heard the technical

panels' key messages from their upcoming Quadrennial Assessments and pondered their implications for the functioning and future implementation of the Protocol.

Several other key issues were aired at MOP 30 but decisions were not adopted at this stage because the subjects require further consultation and deliberation during 2019, including:

- the relationship between stratospheric ozone and proposed solar radiation management strategies;
- linkages between HCFCs and HFCs in transitioning to low-GWP alternatives;
- new terms of reference for the TEAP;
- a possible change in the composition of the MLF ExCom; and
- safety standards.

A Brief History of the Ozone Regime

Concerns that the Earth's stratospheric ozone layer could be at risk from chlorofluorocarbons (CFCs) and other anthropogenic substances first arose in the early 1970s. At that time, scientists warned that releasing these substances into the atmosphere could deplete the ozone layer, hindering its ability to prevent harmful ultraviolet (UV) rays from reaching the Earth. This would adversely affect ocean ecosystems, agricultural productivity and animal populations, and harm humans through higher rates of skin cancers, cataracts, and weakened immune systems. In response, a UN Environment Programme (UNEP) conference held in March 1977 adopted a World Plan of Action on the Ozone Layer and established a Coordinating Committee to guide future international action.

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Key Turning Points

Vienna Convention: Negotiations on an international agreement to protect the ozone layer were launched in 1981 under the auspices of UNEP. In March 1985, the Vienna Convention for the Protection of the Ozone Layer was adopted. It called for cooperation on monitoring, research, and data exchange, but it did not impose obligations to reduce ozone depleting substances (ODS) usage. The Convention now has 197 parties, which represents universal ratification.

Montreal Protocol: In September 1987, efforts to negotiate binding obligations to reduce ODS usage led to the adoption of the Montreal Protocol, which entered into force in January 1989. The Montreal Protocol introduced control measures for some CFCs and halons for developed countries (non-Article 5 parties). Developing countries (Article 5 parties) were granted a grace period, allowing them to increase their ODS use before taking on commitments. The Protocol and all amendments except its newest, the Kigali Amendment, have been ratified by 197 parties.

Since 1987, several amendments and adjustments have been adopted, adding new obligations and additional ODS and adjusting existing control schedules. Amendments require ratification by a certain number of parties before they enter into force; adjustments enter into force automatically.

London Amendment and Adjustments: At MOP 2, held in London, UK, in 1990, delegates tightened control schedules and added ten more CFCs to the list of ODS, as well as carbon tetrachloride (CTC) and methyl chloroform. MOP 2 also established the MLF, which meets the incremental costs incurred by Article 5 parties in implementing the Protocol's control measures and finances clearinghouse functions. The Fund is replenished every three years.

Copenhagen Amendment and Adjustments: At MOP 4, held in Copenhagen, Denmark, in 1992, delegates tightened existing control schedules and added controls on methyl bromide, hydrobromofluorocarbons, and HCFCs. MOP 4 also agreed to enact non-compliance procedures. It established an ImpCom to examine possible non-compliance and make recommendations to the MOP aimed at securing full compliance.

Montreal Amendment and Adjustments: At MOP 9, held in Montreal, Canada, in 1997, delegates agreed to: a new licensing system for importing and exporting ODS, in addition to tightening existing control schedules; and banning trade in methyl bromide with non-parties to the Copenhagen Amendment.

Beijing Amendment and Adjustments: At MOP 11, held in Beijing, China, in 1999, delegates agreed to controls on bromochloromethane, additional controls on HCFCs, and reporting on methyl bromide for quarantine and pre-shipment applications.

Kigali Amendment: At MOP 28, held in Kigali, Rwanda, in 2016, delegates agreed to amend the Protocol to include HFCs as part of its ambit and to set phase-down schedules for HFCs. HFCs are produced as replacements for CFCs and thus a result of ODS phase-out. HFCs are not a threat to the ozone layer but have a high GWP. To date, 60 parties to the Montreal Protocol have ratified the Kigali Amendment, which will enter into force on 1 January 2019.

MOP 30 Report

Preparatory Segment

Montreal Protocol Open-ended Working Group (OEWG) 40 Co-Chair Yaqoub Almatouq (Kuwait) opened the Preparatory Segment on Monday, 5 November 2018.

Pablo Campana Sáenz, Minister for Industry and Productivity, Ecuador, noted his country was an early ratifier of the Kigali Amendment and has already set up a HFCs licensing system and detailed databank.

Tina Birmpili, Executive Secretary, Ozone Secretariat, stressed the importance of strong action at MOP 30 on enforcement and compliance, to uphold the credibility of the Protocol, and announced that the Secretariat will present a draft gender action plan at OEWG 41.

Organizational Matters: Adoption of the Agenda of the Preparatory Segment: Co-Chair Almatouq introduced the provisional agenda (UNEP/OzL.Pro.30/1 and UNEP/OzL.Pro.30/1/Add.1). The European Union (EU) requested discussing safety standards for RACHP systems and appliances, and Harmonized System customs codes for HCFC and CFC substitutes under "other matters." The agenda was adopted with this amendment.

Organization of Work: OEWG 40 Co-Chair Cynthia Newberg (US) suggested, and delegates agreed, to address the topics in order of the agenda.

High-Level Segment

On Thursday, 8 November, MOP 29 President Yaqoub Almatouq opened the High-Level Segment (HLS).

Lenin Moreno, President, Ecuador, welcomed delegates. He stressed the importance of seeking inclusive sustainable development to "protect the house in which our children and grandchildren must live." He called for seeking alternative technologies that do not deplete the ozone layer and continued financial assistance to support developing countries in implementing the Protocol and its amendment. He urged all countries to swiftly ratify the Kigali Amendment.

Tina Birmpili said the overarching message that the assessment panels' reports would present is that there is no room for complacency, which together with the unexpected detection of CFC-11 emissions, potentially jeopardizes the reputation the Montreal Protocol has built over 30 years. She suggested that to tackle the challenges facing the body, Protocol institutions may need to be reassessed.

Almatouq noted the progress made by Protocol parties since the last time a meeting was held in the region in 1996; highlighted that decisions taken by this meeting will have a positive impact in the protection of the environment; and stressed the need to send a strong political message to halt the production and use of CFC-11.

Organizational Matters: Elections of MOP 30 Officers: MOP 30 elected by acclamation: Liana Ghahramanyan (Armenia), as President; Samuel Pare (Burkina Faso), Juan Sebastian Salcedo (Ecuador), and Elisabeth Munzert (Germany), as Vice Presidents; and Bitul Zulhasni (Indonesia) as Rapporteur.

Adoption of the Agenda and Organization of Work: MOP 30 President Ghahramanyan introduced the agenda (UNEP/OzL.Pro.30/1, section II). The Federated States of Micronesia (FSM) suggested a new proposal, by FSM, Mali, Morocco and Nigeria, on the need to study the relationship between stratospheric ozone and proposed solar radiation management strategies (UNEP/OzL.Pro.30/CRP.7) be included under "other matters," noting that it is related to the report of the Scientific Assessment Panel (SAP). Australia called for clarity on whether there was a legal precedent for introducing conference room papers (CRPs) during the HLS. Ozone Secretariat Legal Advisor Gilbert Bankobeza noted that nothing in the rules of procedure precludes this. The US, Canada, and the EU cautioned that this would set a bad precedent and, with China, noted that there was insufficient time to discuss this important issue. Burkina Faso, Niger, and Switzerland suggested

that the proponents introduce the CRP, and take it up at OEWG 41. President Ghahramanyan proposed, and FSM agreed, to initiate discussions after presentations by the assessment panels and resubmit the CRP at OEWG 41. Delegates adopted the agenda.

Presentations by the Assessment Panels on Progress in their Work and Any Key Issues Having Emerged from their 2018 Quadrennial Assessments:

SAP Co-Chairs John Pyle and David Fahey shared several key SAP findings from the forthcoming Assessment, including:

- the continued decline in the total emissions of ODS;
- a slower decline in CFCs and slower increase in HCFCs since 2014;
- an unexpected increase in global total emissions of CFC-11;
- the Kigali Amendment is projected to reduce future global average warming in 2100 due to HFCs from a baseline of 0.3–0.5°C to less than 0.1°C; and
- new options available to hasten recovery of the ozone layer are limited, hence compliance is key.

Environmental Effects Assessment Panel (EEAP) Co-Chairs Nigel Paul and Janet Bornman presented on the environmental effects of ozone depletion, UV radiation, and interactions with climate change. The panel stated that 43 scientists from 18 countries contributed to this 2018 Quadrennial Assessment. EEAP underscored that decreasing ODS controlled by the Protocol has helped avoid large increases in solar UV-B radiation. Further, they added that modelling studies have shown how the implementation of the Protocol has avoided catastrophic effects on human health. They discussed possible impacts on tropospheric air quality of Protocol actions. They noted some ODS replacements (e.g. ammonia, hydrocarbons) may have direct or indirect effects on air quality.

Technology and Economic Assessment Panel (TEAP) Co-Chairs Ashley Woodcock and Paulo Altoe presented its key TEAP messages for the Assessment, including that:

- the Foam Technical Options Committee (FTOC) is aware of the marketing of CFC-11 for use in foams on the internet and through other means;
- a new low GWP halon blend for total flooding fire extinguishing systems (blending two existing low-GWP agents) was announced in October 2018;
- CFC metered-dose inhalers have been phased out, with affordable alternatives available worldwide; and
- the Methyl Bromide TOC (MBTOC) is aware of marketing of methyl bromide on the internet without apparent restriction for controlled uses.

In discussions, delegates raised, *inter alia*:

- the need for cooperation between the MBTOC and governments to regulate the use of methyl bromide;
- the state-of-play in the development of low-GWP technologies;
- the need for more information on the sale of CFC-11;
- the need to take action on the information available on CTC emissions;
- the importance of addressing governance issues related to atmospheric geoengineering; and
- the recent detection of five volatile fluorinated gases in the Arctic.

FSM noted their intention to present their CRP on the relationship between stratospheric ozone and proposed solar radiation management strategies at OEWG 41.

Presentation by the Chair of the MLF ExCom: Hussein Mazon, Chair, ExCom, presented the achievements of the work of the ExCom, MLF Secretariat and implementing agencies (UNEP/OzL.Pro.30/10). He underlined the complexities faced

by the ExCom in the elaboration of the guidelines for financing the phase-down of HFCs. He also presented initiatives and partnerships established to support institutional strengthening and to promote knowledge for the implementation of the Kigali Amendment.

Statements by Heads of Delegation: Alexander Teabo, Minister of Environment, Lands and Agriculture Development, Kiribati, outlined challenges his country faces in meeting Protocol obligations, including lack of national capacity to store properly and destroy in an environmentally-sound manner unwanted controlled substances, and limited local expertise for refrigeration and air conditioning (RAC) technicians.

Samoa encouraged all parties to refrain from illegal activities resulting in ODS emissions into the atmosphere, and requested help in adopting standards that ensure replacement cooling and refrigeration technologies that are both low-GWP and energy efficient.

Romania said it expects to ratify the Kigali Amendment during the first half of 2019 while it serves as President of the EU Council of Ministers, and highlighted enhancing energy efficiency in the RACHP sectors while switching to low- or zero-GWP refrigerants as a key national challenge.

Venezuela outlined his country's efforts to meet its obligations under the Protocol, including greater use of hydrocarbons as refrigerants, and stressed that, to implement the Kigali Amendment, Venezuela would require financial assistance and technology transfer.

Indonesia noted her country is collecting HFCs data as it prepares to ratify the Kigali Amendment, and underscored the importance of Harmonized System codes in this regard. She also expressed concerns about shortages of halon 1211 for fire suppression in aviation.

France noted that since 1991, it has contributed USD 290 million to the Protocol and together with 16 other donor parties, allocated an additional USD 2.5 million to accelerate the phase-down of HFCs.

Nigeria said his country would soon ratify the Kigali Amendment. He expressed concern, however, on the recent findings of CFC-11 emissions and asked parties to take a decision clearly addressing this issue.

Belarus expressed to parties its longstanding dedication to the Montreal Protocol having been one of the first Eastern European countries to sign the Vienna Convention.

Guatemala communicated the country's commitment to strengthening the existing legislation on imports of HCFCs and HFCs, but stressed that to do so it is necessary to, *inter alia*, strengthen the system of import licenses and internal controls.

Benin underscored the importance of meeting their Montreal Protocol commitments.

Kyrgyzstan raised concern about lack of progress with its 2013 request for help from the Ozone Secretariat in transferring unused stratospheric ozone monitoring equipment to developing countries as a means of improving global operating networks of stations monitoring the ozone layer and UV radiation.

Palau said most challenges it will face in Kigali Amendment implementation "have straightforward solutions that can be addressed with additional financial and human resources and training."

Syria emphasized that despite disruptions caused by internal war, it stands by its Protocol commitments and intends to ratify and implement the Kigali Amendment.

Senegal said the phasing out of HCFCs presents an unprecedented opportunity to both switch to natural low-GWP refrigerants and utilize equipment with higher energy efficiency.

He expressed support for the African Group's proposal on energy-efficient technologies in the RACHP sectors.

Bangladesh noted his country's HCFCs Phase-out Management Plan (HPMP) Stage II has been approved by ExCom and it hopes, by the end of 2019, to be able to advance in phasing down HFCs.

Trinidad and Tobago supported and encouraged further investigation into control of illegal ODS trade, as well as further research on destruction technologies and its applicability to low volume consuming countries.

Nepal said it has committed to phasing out HCFCs by 2030 and to ratifying the Kigali Amendment. He called for a financial support mechanism for Article 5 countries wishing to convert from HCFC- or HFC- to low-GWP refrigerant based systems.

The Intergovernmental Panel on Climate Change (IPCC) recounted key messages from its recent report to show the importance of the Kigali Amendment in helping developing countries to leapfrog "the trial-and error stages of innovative technology development" others have endured to adopt low or no-GWP alternatives combined with energy efficiency.

The Environmental Investigation Agency (EIA) commended the sense of urgency and action that parties have taken to address the recent confirmation of CFC-11 emissions.

The International Institute of Refrigeration (IIR) urged phasing out HCFCs now and replacing them with low-GWP alternatives, which may require changes to the phase-out schedule to focus first on sectors where low-GWP refrigerants can be quickly implemented.

Ecuador urged those parties who have not ratified the Kigali Amendment to do so.

An in-depth summary of Thursday's statements is available at: <http://enb.iisd.org/vol19/enb19144e.html>

Closing Session: Report of the Preparatory Segment Co-Chairs and Consideration of the Decisions Recommended for Adoption by MOP 30: On Friday evening, Co-Chair Almatouq reported on the progress of the Preparatory Segment to the HLS. He highlighted that delegates faced tough issues, specifically related to energy efficiency, adjustments, and CFC-11, but that many agenda items had reached agreement and been forwarded for decision at the HLS..

Adoption of MOP 30 Decisions and the Meeting Report: On Friday night, MOP 30 Rapporteur Zulhasni reviewed the report of the meeting (UNEP/OzL.Pro.30/L.1, and Add.1) paragraph-by-paragraph. Delegates adopted the report with minor textual amendments. Delegates adopted all 21 decisions without amendment.

MOP 30 President Ghahramanyan thanked all participants for the spirit of cooperation displayed, noting that 2019 will be an exciting year for the parties. She gavelled the meeting to a close at 11:10 pm.

MOP 30 Outcomes

All decisions were adopted without amendment on Friday by the HLS. Twenty decisions are contained in a compilation of draft decisions for adoption (UNEP/OzL.Pro.30/L.2, Add.1 and Add.2) and one decision on senior expert nominations to the TEAP was adopted orally.

Budget of the Trust Fund for the Montreal Protocol and Financial Reports: On Monday, Co-Chair Almatouq introduced this item (UNEP/OzL.Pro.30/4/Rev.1, UNEP/OzL.Pro.30/4/Add.1/Rev.1 and UNEP/OzL.Pro.30/5). Delegates established a Budget Committee chaired by Phillipa Guthrey (New Zealand) to discuss the relevant documents and prepare draft decisions.

The committee held closed-door meetings throughout the week, submitting the results of their work on Friday (UNEP/OzL.Pro.30/CRP.12).

Final Outcome: In its decision (UNEP/OzL.Pro.30/L.2/Add.1), the MOP decides to, *inter alia*:

- approve the revised budget for 2018 in the amount of USD 5,326,722 and the 2019 budget in the amount of USD 5,326,722;
- authorize the Executive Secretary, on an exceptional basis, to draw upon the available cash balance for 2019 for specified activities, such as a workshop on CFC-11 and an online tool for safety standards, in an amount up to USD 616,058;
- request the Executive Secretary to prepare budgets and work programmes for the years 2020 and 2021, presenting two budget scenarios, specifically a zero-nominal-growth scenario, and a scenario based on further recommended adjustments to the zero-nominal growth; and
- stress the need to ensure that the budget proposals are realistic and represent the agreed priorities of all parties to help ensure a sustainable and stable fund and cash balance, including contributions.

Kigali Amendment to the Montreal Protocol to Phase Down HFCs: Data Reporting Under Article 7 and Related Issues: On Monday, Co-Chair Newberg opened this agenda item (UNEP/OzL.Pro.30/8/Rev.1), noting the need for further work on the timeline for the reporting of baseline data for HFCs by Article 5 parties; the GWP values for HCFC-141 and HCFC-142; and the proposed revised data reporting forms and associated instructions.

The contact group established at OEWG 40 was reconvened, with Miruza Mohamed (Maldives) and Martin Sirois (Canada) as Co-Chairs, and met throughout the week. The group started by working on formalizing the GWP values of HCFC-141, HCFC-142, HCFC-123, and HCFC-124, and approving a draft decision on the timeline for reporting baseline data for HFCs by Article 5 parties. Subsequent meetings focused on the HFC-23 emissions reporting requirement; the content of the information to be provided in each data form; and what should be considered compulsory or voluntary reporting. The resulting two draft decisions and their detailed annexes (UNEP/OzL.Pro.30/CRP.9, Add.1 and UNEP/OzL.Pro.30/CRP.10) were presented to the Preparatory Segment on Friday and forwarded to the HLS, which adopted them without amendment.

Final Outcome: In its decision on the timeline for reporting of baseline data for HFCs for Article 5 parties (UNEP/OzL.Pro.30/L.2), the MOP decides to request the ImpCom and the MOP to defer consideration of the status of the reporting of HFC baseline data until nine months after the end of each baseline year as applicable to the group of Article 5 parties in question, in order to allow Article 5 parties to report actual baseline data for HFCs.

In its decision on revised data reporting forms and GWP values for HCFC-123, HCFC-124, HCFC-141 and HCFC-142, (UNEP/OzL.Pro.30/L.2/Add.1), the MOP:

- approves the revised forms and instructions for reporting data in accordance with the reporting obligations under the Protocol;
- clarifies that decision XXIV/14, by which parties are requested to enter a number in each cell in the data reporting forms that they submit, including zero, where appropriate, rather than leaving the cell blank, does not apply to cells where the information is to be provided on a voluntary basis;
- instructs the Ozone Secretariat to use the GWP values listed for HCFC-123 and HCFC-124 in Annex C for their most commercially viable isomers, listed as HCFC-123**

and HCFC 124**, respectively, when calculating the HFC baselines of parties with consumption or production of HCFC-123** and HCFC-124** in their respective baseline years; and

- instructs the Ozone Secretariat to use the GWP values of HCFC-141b and HCFC 142b for HCFC-141 and HCFC-142, respectively, when calculating the HFC baselines of parties with past consumption or production of HCFC-141 and HCFC-142 in their respective baseline years.

An annex contains revised forms and instructions for reporting data.

Destruction Technologies for Controlled Substances:

On Monday, Co-Chair Newberg highlighted the September 2018 TEAP Task Force report on destruction technologies for controlled substances. TEAP Task Force on Destruction Technologies Co-Chairs Helen Tope and Helen Walter-Terrinoni presented an addendum to the report, highlighting the assessment of approved destruction technologies, such as liquid injection and rotary kiln incineration.

A contact group was established to further consider this issue co-chaired by Bitul Zulhasni (Indonesia) and Mikkel Sørensen (Denmark). On Wednesday, Zulhasni reported to plenary that the group had finalized its work and submitted UNEP/OzL.Pro.30/CRP.6, which approves specific destruction technologies and requests the TEAP to assess those technologies that have not yet been approved. Delegates agreed to forward the CRP to the HLS.

Final Outcome: In its decision (UNEP/OzL.Pro.30/L.2), the MOP approves the following destruction technologies, as additions to the technologies listed in Annex VI to the report of MOP 4 and modified by decisions V/26, VII/35 and XIV/6:

- for Annex F, Group I substances (HFCs except HFC-23): cement kilns, gaseous/fume oxidation, liquid injection incineration, porous thermal reactor, reactor cracking, rotary kiln incineration, argon plasma arc, nitrogen plasma arc, portable plasma arc, chemical reaction with hydrogen gas (H₂) and carbon dioxide (CO₂), gas phase catalytic dehalogenation, and superheated steam reactor;
- for Annex F, Group II substances (HFC-23): gaseous/fume oxidation, liquid injection incineration, reactor cracking, rotary kiln incineration, argon plasma arc, nitrogen plasma arc, chemical reaction with H₂ and CO₂, and superheated steam reactor;
- for Annex E substances (methyl bromide): thermal decay of methyl bromide; and
- for diluted sources of Annex F, Group I substances (HFCs except HFC-23): municipal solid waste incineration and rotary kiln incineration.

The decision also requests TEAP to assess destruction technologies listed in an annex to the decision as not approved or not determined, as well as any other technologies, and to report to the OEWG prior to MOP 33, with the understanding that if further information is provided by parties in due time, in particular regarding the destruction of HFC-23 by cement kilns, TEAP should report to an earlier meeting of the OEWG.

Progress by the MLF ExCom in the Development of Guidelines for Financing the Phase-down of HFCs (Decision XXVIII/2): On Monday, Eduardo Ganem, Chief Officer, MLF, presented ExCom's report to MOP 30 (UNEP/OzL.Pro.30/10*). He underlined that the ExCom has been discussing the establishment of guidelines since 2016. He highlighted key issues for Kigali Amendment implementation, including: additional contributions to the MLF; information on HFCs consumption and production; principles for funding enabling activities and

institutional strengthening; and draft cost-effectiveness guidelines for funding the phase-down of HFCs and key aspects related to HFC-23 technologies.

China suggested that the MLF Secretariat accelerate its funding programmes and outstanding guidelines taking into account future trends so that funding for Article 5 parties is aligned to the actual situation of phase-down activities. The MLF Secretariat responded that the business plan is revised annually and adapts to the changing situation of Article 5 parties' compliance status.

India proposed establishing a contact group to define ways forward for the cost guidelines. Jordan, with Lebanon, suggested terms of reference (ToR) be developed for this contact group to ensure there is no conflict with the mandate of the ExCom.

Syria, FSM, and Switzerland supported allowing the ExCom to finalize the guidelines. Barbados, with Australia, called on parties to review the documentation in order to better advise their ExCom representatives. Australia, the US, and FSM stressed the need to give the ExCom enough time to "get it right." Nigeria asked whether the ExCom has a timeframe for concluding the guidelines.

India stressed that under decision XXVIII/2, the ExCom was mandated to present the guidelines to the MOP for input before they are finalized. Stating that his delegation trusts the ExCom to finalize the guidelines, the US suggested that the meeting report reflect the "flavor" of the discussion, and forward the meeting report to the MLF, suggesting that this would fulfil the provision in decision XXVIII/2.

Co-Chair Almatouq suggested that the discussions be reflected in the meeting report in detail and called on the ExCom members to take note of all the discussions, which would then be used as a basis to finalize the guidelines. India opposed, calling for the issue to remain open until a decision is reached on the way forward. Almatouq suspended discussions on the guidelines, noting that the MOP will return to them later in the week.

On Wednesday, India reported on a CRP it submitted together with Argentina, Bahrain, Brazil, Lebanon, and Saudi Arabia (UNEP/OzL.Pro.30/CRP.8). China, Burkina Faso, FSM, Rwanda, Peru, and South Africa supported the draft decision. Parties urged the ExCom to develop these guidelines in a transparent way and China and FSM asked the ExCom to expedite these guidelines.

The EU, the US and Canada asked for more time to reflect on the CRP. An informal group to discuss this issue was facilitated by Ana Maria Kleymeyer (FSM). After Thursday and Friday informal group sessions, a revised CRP was submitted by the sponsors (UNEP/OzL.Pro.30/CRP.8/Rev.1) and delegates agreed to forward it to the HLS.

Final Outcome: In its decision (UNEP/OzL.Pro.30/L.2/Add.1), the MOP:

- requests the ExCom to continue its work on developing guidelines for financing the phase-down of HFC consumption and production, and provide an update on progress on the elements as part of the annual report of the ExCom to the MOP; and
- requests the ExCom to present the draft guidelines developed to the MOP for the parties' views and input before their finalization by the ExCom.

Status of Ratification of the Kigali Amendment: Co-Chair Almatouq opened this agenda item (UNEP/OzL.Pro.30/INF/1) on Monday, indicating that 59 countries have ratified the Amendment and encouraged all countries to do the same. Several delegates presented the status of ratification of the Kigali Amendment in their countries and the expected conclusion date.

On Friday, during the adoption of the decision, the Secretariat announced that it had received the 60th instrument of ratification during the week.

Final Outcome: In its decision (UNEP/OzL.Pro.30/L.2), the MOP notes that, as of 9 November 2018, 60 parties had ratified, approved or accepted the Kigali Amendment, and urges all parties that have not yet done so to consider ratifying, approving or accepting the Amendment in order to ensure broad participation and to achieve the goals of the Amendment

Future Availability of Halons and Their Alternatives (decision XXIX/8): On Monday, Dan Verdonik, Co-Chair, Halons Technical Options Committee (HTOC), reported on progress made with the International Civil Aviation Organization (ICAO) since forming an informal working group to better understand the current uses and releases of halons and any potential courses of action that civil aviation could take to reduce those uses and releases.

Verdonik informed parties that a questionnaire was developed and sent out to national servicing companies to provide a more accurate estimate of annual halon 1301 emissions from civil aviation. Fifty-three surveys were returned but only 10 provided data on the questions intended to determine emissions. HTOC does not know the total number of surveys that were distributed; however, its estimate of halon 1301 available at the end of 2018 is 37,750 metric tonnes.

Following questions from parties, HTOC agreed to have offline discussions with parties on their more detailed and technical questions.

The US, supported by the EU, Canada, and Australia, noted that they would present a CRP later in the week, requesting the Secretariat to engage with the International Maritime Organization (IMO) and other organizations. Nigeria suggested encouraging countries still using halons in the oil and gas sector to decommission them. Co-Chair Newberg suspended discussions until parties could consider the CRP submitted by the US and others.

During Wednesday morning's plenary, the US reported on a proposal with Australia, Canada, the EU, Nigeria, and Norway on future availability of halons and their alternatives (UNEP/OzL.Pro.30/CRP.3). Colombia requested consultations with the proponents for a possible amendment regarding Article 5 party interests in halon recovery. During the evening plenary, the US reported the proposal had been revised (UNEP/OzL.Pro.30/CRP.3/Rev.1) to request the TEAP to identify specific needs for halons, and other sources of recoverable halons, and opportunities for recycling halons in Article 5 and non-Article 5 parties. Delegates forwarded the revised CRP to the HLS.

Final Outcome: In its decision (UNEP/OzL.Pro.30/L.2), the MOP requests the Ozone Secretariat to liaise with the IMO Secretariat to facilitate the exchange of information between relevant technical experts regarding halon availability; and the TEAP, through its HTOC, to:

- continue engaging with the IMO and ICAO to better assess future amounts of halons available to support civil aviation and to identify relevant alternatives already available or in development;
- identify ways to enhance the recovery of halons from the breaking of ships;
- identify specific needs for halon, other sources of recoverable halon, and opportunities for recycling halon in all parties; and
- submit a report on halon availability, based on the above-mentioned assessment and identification activities, before OEWG 42.

Issues Related to Exemptions under Articles 2A–2I of the Montreal Protocol: Co-Chair Almatouq introduced these items (UNEP/OzL.Pro.30/2/Add.1) on Monday.

Critical Use Nominations (CUNs) for 2019 and 2020: On Monday, MBTOC Co-Chairs Ian Porter and Marta Pizano discussed the critical use exemptions (CUEs) requested by Argentina, Australia, Canada, China, Mexico, and South Africa.

Jordan called for parties to share information in order to phase out methyl bromide. The US noted that the workload of the MBTOC is significantly diminished and proposed that the MBTOC process be further streamlined. Canada reported that they were working with Australia, Argentina, and South Africa on drafting a CRP.

In the discussion, Argentina agreed to eliminate methyl bromide in the short term. The EU recalled its experience in phasing out methyl bromide and urged the use of alternatives for tomatoes and strawberries. Costa Rica expressed concern on the expansion of exemptions for methyl bromide. Mexico highlighted that it may be complicated to secure some countries' inventories, since they may be fragmented. Co-Chair Newberg suspended decision on this item until Canada submitted its CRP.

Informal consultations were held during the week and a CRP (UNEP/OzL.Pro.30/CRP.11) was submitted to the Preparatory Segment on Thursday, which forwarded it to the HLS.

Final Outcome: The MOP decision on CUEs for 2019 and 2020 (UNEP/OzL.Pro.30/L.2) contains an annex with two tables: agreed critical-use categories (Table A), for 2019, for Argentina (strawberry fruit and tomatoes), Canada (strawberry runners) and South Africa (mills and houses), and for 2020 for Australia (strawberry runners); and corresponding permitted levels of production and consumption (Table B).

The MOP decides, *inter alia*:

- to permit, for the agreed critical-use categories for 2019 and 2020 in Table A for each party, the levels of production and consumption for 2019 and 2020 in Table B, which are necessary to satisfy critical uses, with the understanding that additional production and consumption and categories of use may be approved by the MOP in accordance with decision IX/6; and
- that parties shall endeavor to license, permit, authorize or allocate quantities of methyl bromide for critical uses as listed in Table A.

Development and Availability of Laboratory and Analytical Procedures that can be performed without Using Controlled Substances under the Protocol (Decision XXVI/5): On Monday, Helen Tope, Co-Chair, Medical and Chemicals TOC (MCTOC) presented MCTOC's report. She gave examples of laboratory and analytical uses (LAU) of controlled substances including: calibration, and extraction of solvents, diluents, and carriers for specific chemical analyses. She highlighted the main ODS have been CTC, CFC-113 and 1,1,1-trichloroethane. She emphasized the report considers standards relating to LAU, as well as available alternatives, potential barriers, and challenges for parties, that it focuses on controlled substances already granted under the global exemption, and it includes information on known LAU using HCFCs. She highlighted that in 2016 the global production of all reported controlled substances for LAU was relatively small and listed some recommendations, including establishing cooperation with standards organizations and parties providing more comprehensive data.

Australia, supported by the US, suggested it may be time to take a pause and revisit this issue in order to formulate a new way of dealing with it. The Co-Chairs noted a draft decision by Australia, supported by the EU and Canada, to be addressed

under the agenda item on adjustments, proposing that OEWG 41 consider a revised list of laboratory and analytical procedures that can be performed without using controlled substances.

On Wednesday, Australia introduced its proposal with Canada (UNEP/OzL.Pro.30/CRP.5) to add HCFCs to the existing global LAU exemption under the Protocol.

The CRP was referred to the Adjustments Contact Group. During the week the contact group considered several proposals to modify CRP.5, but ultimately elected to leave it unchanged.

Final Outcome: In its decision (UNEP/OzL.Pro.30/L.2/Add.1), the MOP decides to include HCFCs in the global LAU exemption under the same conditions and on the same timeline as set forth in paragraph 1 of decision XXVI/5.

Process Agents: On Monday, Co-Chair Newberg introduced this agenda item. Mexico and Venezuela requested parties using process agents to provide an update and timeline for the elimination of these substances. Reflecting suggestions by the EU and Canada, the Co-Chairs recommended, and delegates accepted, that this discussion be reflected in the meeting report and this item be addressed at OEWG 41.

Linkages between HCFCs and HFCs in Transitioning to Low GWP Alternatives: On Tuesday, Co-Chair Almatouq summarized prior work on this issue and invited input. Saudi Arabia, supported by Bahrain, Oman, and the EU, proposed postponing discussion until OEWG 41 to allow for further consultations. Parties agreed to the proposal.

Issues Related to Energy Efficiency While Phasing Down HFCs (Decision XXIX/10): TEAP Report on Energy Efficiency in the RACHP Sectors: On Tuesday, TEAP Energy Efficiency Task Force Co-Chairs Bella Maranion, Fabio Polonara, and Suely Carvalho presented the executive summary of the Task Force's supplemental report reflecting guidance and requests made by OEWG 40. Among the messages they highlighted were:

- low-GWP refrigerants themselves are only expected to have a minor impact on system efficiency;
- most improvement in energy efficiency of systems can be achieved through optimization and use of new and advanced components;
- in the absence of enabling energy efficiency policy, energy efficiency values for air conditioning are generally lower in Article 5 parties compared to non-Article 5 parties;
- minimum energy performance standards and labels have proved to be cost-effective policy tools;
- district cooling systems may reduce power demand by 55-62% in comparison to conventional air conditioning systems and may consume 40-50% less energy; and
- there needs to be consideration of potential options for a new financial architecture, by which resources for energy efficiency could flow more certainly and effectively.

In the ensuing discussion, the Gambia noted that the funding agencies do not usually fund transition projects. FSM, with Burkina Faso, called for more information on the obstacles preventing available finances to flow to energy efficiency in the RACHP sectors, and requested the TEAP to suggest approaches to ensure the MLF can partner with other financial organizations to improve financing for energy efficiency. The TEAP noted that the MLF partners with the Global Environment Facility (GEF) to provide co-financing for large projects. Nigeria highlighted the need for a globally acceptable threshold to determine energy efficiency in industrial equipment. Argentina stressed that parties need to decide whether they will fund energy efficiency. The United Arab Emirates (UAE) called for more information on

funding energy efficiency on an industrial scale. China stressed the need for adequate funding to promote research in energy efficiency.

The US asked for more information on consumers' benefits. India and South Africa asked for further discussion on funding sources and architecture for energy efficiency. Uganda called for a complementary treatment of energy access and energy efficiency.

Responding to questions and comments, TEAP said:

- the benefits of energy efficiency for consumers would be experienced over the lifetime of the project;
- the research focused on multilateral funds, which tend to be allocated to large projects;
- energy saving and operating costs for consumers are interrelated; and
- the report's annex highlights different energy efficiency options so parties can choose the most cost-effective one.

Colombia suggested developing a roadmap to understand funding gaps for energy efficiency in the RACHP sectors.

Access of Article 5 Parties to Energy-Efficient Technologies in the RACHP Sectors: On Tuesday, Rwanda presented the African Group's CRP on this issue (UNEP/OzL.Pro.30/CRP.2), saying it now reflects comments provided at OEWG 40. Brazil and FSM supported the CRP. Canada, the EU and US expressed concern that the requests contained in the CRP may go beyond the mandate of the Montreal Protocol and the MLF. Lesotho called for clarity on the scope of the Protocol in relation to energy efficiency.

Zambia said lessons on synergies could be drawn from the Rotterdam and Stockholm Conventions.

Switzerland, Barbados, Nigeria, the EU, and Bahrain welcomed further discussions on the African Group proposal in a contact group.

Mexico stressed that to transition to low-GWP alternatives, we need to improve the energy efficiency of equipment, making it more sustainable in the long run. India and Nigeria called for a stronger focus on energy efficiency in refrigeration and air conditioning. Nigeria also expressed concern about the dumping of obsolete, high-GWP refrigeration technology in Africa. Kenya called for specific indications on which areas of the African Group proposal were beyond the Protocol's scope.

Co-Chair Newberg reconvened the OEWG contact group on this issue with Leslie Smith (Grenada) and Patrick McInerney (Australia) as Co-Chairs. During its work throughout the week revising the African Group proposal, delegates discussed, *inter alia*: what ExCom should take into account when developing cost guidance related to maintaining or enhancing energy efficiency of replacement technologies; modalities for co-funding improvements in energy efficiency; and the development by OEWG 41 and MOP 31 of an energy efficiency "roadmap" to guide governance, regulatory frameworks, and funding and co-funding opportunities.

The group also discussed the new wording related to the allocation of specific funds for demonstration projects on energy efficiency in Article 5 parties. They considered a request to the ExCom to liaise with other funds and financial institutions to support improvements in energy efficiency, with some suggesting that the ExCom seek modalities for cooperation, and others suggesting that the ExCom also seek co-funding.

They also considered issues related to: the difference between cooperation and co-funding; the possibility of limiting the financial support just to "low-volume consuming countries"; and the importance of the bulk procurement processes for energy efficiency.

Delegates reviewed the revised CRP (UNEP/OzL.Pro.30/CRP.2/Rev.1) in the Preparatory Segment on Friday, which forwarded it to the HLS for adoption.

Final Outcome: In its decision (UNEP/OzL.Pro.30/L.2/Add.1), the MOP requests the ExCom to consider flexibility within the financial support provided through enabling activities for HFCs to enable Article 5 parties to use part of this support for energy efficiency policy and training support as it relates to the phase-down of controlled substances, such as:

- developing and enforcing policies and regulations to avoid the market penetration of energy-inefficient RACHP equipment,
- promoting access to energy-efficient technologies in these sectors; and
- targeted training on certification, safety and standards, awareness-raising, and capacity-building aimed at maintaining and enhancing the energy efficiency.

In addition, the MOP requests:

- the ExCom to consider increasing the funding provided to low-volume consuming countries;
- the TEAP to prepare a report on the cost and availability of low-GWP technologies/equipment that maintain/enhance energy efficiency, *inter alia*, covering various RACHP sectors, in particular, domestic air-conditioning and commercial refrigeration taking into account geographical regions, including countries with high ambient temperature (HAT) conditions; and
- continued support of stand-alone projects in Article 5 parties.

The MOP further calls on the ExCom to:

- build on its ongoing work of reviewing servicing projects to identify best practices, lessons learned, and additional opportunities for maintaining energy efficiency in the servicing sector, and related costs;
- consider the information provided by demonstration and stand-alone projects in order to develop cost guidance related to maintaining or enhancing energy efficiency of replacement technologies and equipment when phasing-down HFCs; and
- in dialogue with the Ozone Secretariat, to liaise with other funds and financial institutions to explore mobilizing additional resources and, as appropriate, set up modalities for cooperation such as co-funding arrangements to maintain or enhance energy efficiency when phasing down HFCs, acknowledging that activities to assist Article 5 parties comply with their obligations under the Montreal Protocol will continue to be funded under the MLF in accordance with its guidelines and decisions.

Proposed Adjustments to the Montreal Protocol on HCFCs

for Non-Article 5 Parties: On Tuesday, Co-Chair Almatouq introduced the two proposals for adjustments to the Montreal Protocol on HCFCs submitted by the US (UNEP/OzL.Pro.30/6) and Australia with Canada (UNEP/OzL.Pro.30/7). The Russian Federation asked for the expansion of the scope of the adjustment to include certain medical aerosols and solvents used for rocket engines. The US highlighted that fire suppression is a safety and public health issue, so should be considered during the 2020-2030 period.

Australia informed parties that a draft decision will be available for consideration.

The EU said parties should be addressing exemptions for use in the RAC sectors. Switzerland questioned whether a “servicing tail” (an amount of HCFCs allowed to be used to service existing equipment) is the best way forward for this approach. Nigeria cautioned that exemptions allowed in this instance might open a floodgate of requests for exemptions from other parties.

The issue was referred to a contact group co-chaired by Alain Wilmart (Belgium) and Agustin Sanchez Guevara (Mexico) for further discussion. During the week the group considered a consolidated proposal submitted by the US, Canada, and Australia, discussing HCFC consumption beyond 1 January 2020, agreeing that consumption should be restricted to the servicing of fire suppression and protection equipment, solvent applications in rocket manufacturing, and topical medical aerosol applications in specialized burn treatments. The group also discussed two new texts tabled by several Article 5 parties, related to:

- extending HCFC use for the RAC sector to beyond 2025 in HAT countries; and
- equalizing the HCFC consumption threshold permitted for certain uses in both Article 5 and non-Article 5 parties.

On the first text, the Article 5 parties concerned explained the need to ensure that HAT countries are not found to be in non-compliance between 2025 and 2028, when the compliance deferral (which allows certain parties to go above the use of HCFCs for certain uses) under the Kigali Amendment comes into effect. Some countries were concerned that this suggestion is a “blank check” to HAT countries on the continued use of HCFCs, calling instead for this use to be reviewed in 2025. After several rounds of informal consultations, delegates agreed to examine the flexibility of the HCFC schedule adjustment in line with the Kigali Amendment.

On the second text, one country suggested that, as the HCFC use threshold is already in the Protocol in relation to non-Article 5 parties, the adjustment would apply *mutatis mutandis* to Article 5 parties. On this understanding, the proponents withdrew the proposed text.

The draft decision was forwarded to the HLS on Friday, which adopted it without amendment.

Final Outcome: In its decision (UNEP/OzL.Pro.30/L.2/Add.1), the MOP adopts, in accordance with the procedure set out in paragraph 9 of Article 2 of the Montreal Protocol, an amendment of Article 2F of the Protocol to provide for the adjustments of production and consumption of controlled substances listed in Protocol Annex C Group 1 (HCFCs), to allow exceeding consumption and production limits by 0.5% for:

- the servicing of refrigeration and air-conditioning equipment existing on 1 January 2020;
- the servicing of fire suppression and fire protection equipment existing on 1 January 2020;
- solvent applications in rocket engine manufacturing; and
- topical medical aerosol applications for the specialized treatment of burns.

The MOP further:

- encourages the development and use of alternatives to HCFCs in the non-servicing applications set out in Article 2F;
- urges the recovery, recycling, and reclamation of HCFCs as well as the use of stocks and alternatives, where available and appropriate, in order to reduce the production and consumption of HCFC substances;
- requests the TEAP to provide in its quadrennial reports to be presented to MOP 35 in 2023 and to MOP 39 in 2027 information on the availability of HCFCs, including amounts available from recovery, recycling, and reclamation, and best available information on country level and total known stocks, as well as availability of alternative options for the applications described in Article 2F; and
- examines the flexibility of the HCFCs schedule adjustment in line with the Kigali Amendment.

The annex contains the specific adjustments to the relevant articles of the Montreal Protocol.

Unexpected Emissions of Trichlorofluoromethane (CFC-11): On Tuesday, Co-Chair Newberg introduced this issue (UNEP/OzL.Pro.30/2, UNEP/OzL.Pro.30/3/Rev.1, and UNEP/OzL.Pro.WG.1/40/INF/2/Add.1). SAP and TEAP highlighted the information on CFC-11 emissions presented at a side-event on Monday.

Jordan requested clarification on the measurement of new emissions given the lifecycle of CFC-11. The US asked for clarification on the correlation between sources of CFC-11 and CFC-22. China called for clarity on: the methodology used to estimate CFC-11 quantities in the atmosphere; the gap between TEAP figures related to foams and national data; and the factors taken into consideration in the measurement of CFC-11, including factors due to foam agents.

SAP said it recognized the correlation between CFC-11 and CFC-22, but that the extent of this correlation is not yet known. The EU asked why there was no further evidence on CFC-12 and CTC. SAP explained that the global atmospheric concentration of CFC-11 was expected to go down by 2% per year, but is currently decreasing by 0.08%, indicating that there is an increase in emissions.

China assured delegates that the recent findings have been taken very seriously, adding that 1,172 inspections were conducted countrywide and a number of enterprises have been brought to justice for their production and use of CFC-11. China proposed holding a seminar on compliance and invited parties to participate.

The EU, Barbados, China, Nigeria, Burkina Faso, Zambia, Canada, and Bahrain supported forwarding the decision drafted by OEWG 40 (UNEP/OzL.Pro.30/3) to the HLS. Canada also highlighted other actions that could be taken, including action by the ImpCom. Zambia noted that the Protocol needs to address the drivers of the CFC-11 emissions.

The US underlined the need for the Protocol to pause and reassess its role, lamenting that the increase in CFC-11 in the atmosphere was detected by entities outside the competencies of the Montreal Protocol even though the Protocol is charged with monitoring emissions' levels; and requested leaving the item open to give countries time to hold bilateral meetings to discuss the next steps.

Venezuela asked for further scientific data. FSM called on all parties to pay more attention to production and consumption of CFC-11 within their borders and to make sure it is controlled. Japan, with others, emphasized that this issue can damage efforts made throughout the years as well as the credibility of the Montreal Protocol. The EIA called for a review on compliance and enforcement procedures.

Delegates agreed to forward the draft decision to the HLS while keeping the agenda item open for further discussion.

On Wednesday, Co-Chair Newberg reopened this agenda item for further comments. The US said it looked forward to more studies on this issue in 2019 and emphasized transparency is key, calling on all parties to share information on CFC-11 to build confidence in the Protocol's institutions. Australia highlighted that decisions need to be based on additional data.

The HLS adopted the decision on Friday without amendment.

Final Outcome: In its decision (UNEP/OzL.Pro.30/L.2), the MOP:

- requests SAP to provide to the parties a summary report on the unexpected increase of CFC-11 emissions, which would supplement the information in the Quadrennial Assessment, with a preliminary summary to be provided to OEWG 41 and an update to MOP 31;

- requests TEAP to provide the parties with information on potential sources of emissions of CFC-11 and related controlled substances from potential production and uses, as well as from banks, that may have resulted in emissions of CFC-11 in unexpected quantities in the relevant regions, with a preliminary summary to be provided to OEWG 41 and an update to MOP 31;
- requests parties with any relevant scientific and technical information that may help inform the SAP and TEAP reports to provide that information to the Secretariat by 1 March 2019;
- encourages parties, as appropriate and as feasible, to support scientific efforts, including for atmospheric measurements, to further study the unexpected emissions of CFC-11 in recent years;
- encourages relevant scientific and atmospheric organizations and institutions to further study and elaborate the current findings related to CFC-11 emissions; and
- requests the Ozone Secretariat, in consultation with the MLF Secretariat, to provide parties, via a report to OEWG 41 and a final report to MOP 31, an overview outlining the procedures under the Protocol and the Fund regarding controlled substances by which the 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.

The MOP further requests all parties to:

- take appropriate measures to ensure that the phase-out of CFC-11 is effectively sustained and enforced in accordance with obligations under the Protocol; and
- inform the Secretariat about any potential deviations from compliance that could contribute to the unexpected increase in CFC-11 emissions.

Issue Raised by the UAE on Eligibility for Financial and Technical Assistance: On Tuesday, Co-Chair Almatouq introduced this agenda item. The UAE reiterated its need for financial and technical support under the obligations of the Kigali Amendment. He stressed the UAE's historical support and compliance to the Montreal Protocol, noting it had never made a prior request to the MLF. Calling for more bilateral consultations on this matter, the UAE asked for this issue to be deferred to MOP 31 or beyond. Saudi Arabia, Bahrain, Jordan, Egypt, Syria, Morocco, Bangladesh, Lebanon, and Oman supported the UAE request.

Iran asked parties for more elaboration on the categorization of Article 5 parties in relation to the request put forward by the UAE, as an Article 5 party.

The US said it was open to allowing the UAE more time for bilateral consultations, but raised questions about UAE's categorization as an Article 5 party.

Delegates agreed to defer discussions on this issue as requested.

Review of the Terms of Reference, Composition and Balance as well as Fields of Expertise Required of the Assessment Panels and their Subsidiary Bodies: On Wednesday, Co-Chair Newberg introduced this item, noting a draft decision based on a CRP was developed during OEWG 40 (UNEP/OzL.Pro.30/3). India noted that the CRP was produced in response to the new challenges that Article 5 parties face as a result of the Kigali Amendment, including, *inter alia*, more focus on energy efficiency and liaising with other bodies and funding institutions. He stated that given the guidance that the TEAP and its Technical Options Committees (TOCs) provide to parties, there is need to re-consider the TEAP ToR; he asked the Ozone

Secretariat to develop an information document summarizing the expertise needed for the TEAP for OEWG 41 with input from parties.

Bahrain, Lebanon, Jordan, Nigeria, Morocco, and FSM supported the CRP.

Australia, with Canada, the US, and the EU, noted that the CRP specified revising the ToR of the TEAP, but noted that parties presenting this CRP in plenary mentioned revisions needed for the ToR of other assessment panels. They also questioned the request for the Ozone Secretariat to produce an information document on this item given that the TEAP provides regular updates through its expertise matrix on the TEAP's needs.

Burkina Faso called on the Secretariat to provide a summary of the information needed for parties to discuss this issue. Supporting the proposal, Syria and Yemen stressed the need for regional balance. Saudi Arabia said the review should address expertise required for the implementation of the Kigali Amendment.

Co-Chair Newberg proposed, and parties supported, the establishment of an informal group to further discuss this issue. The group met several times during the week, and on Friday reported reaching consensus on a draft decision (UNEP/OzL.Pro.30/CRP.13) supported by Bahrain, Egypt, India, Iraq, Jordan, Kuwait, Oman, Rwanda, Saudi Arabia, Tunisia, and the UAE. The Preparatory Segment forwarded the draft decision to the HLS, which adopted it without amendment.

Final Outcome: In its decision (UNEP/OzL.Pro.30/L.2/Add.1), the MOP requests the Ozone Secretariat to prepare a document in consultation with the TEAP, for OEWG 41, taking into account the ongoing efforts by the TEAP to respond to changing circumstances, including the Kigali Amendment, in relation to:

- ToR, composition, and balance with regard to geography, representation of Article 5 and non-Article 5 parties, and gender; and
- the fields of expertise required for the upcoming challenges related to implementation of the Kigali Amendment, such as energy efficiency, climate benefits, and safety.

The MOP further notes that the following paragraphs of this decision supersede prior direction regarding periodicity to the TEAP regarding assessments of process agents, laboratory and analytical applications, destruction technologies, n-propyl bromide and possible new substances, and requests the TEAP to:

- provide their review of process agent uses of controlled substances no earlier than 2021, and every four years thereafter, if new compelling information becomes available;
- provide a review of LAU of controlled substances if new compelling information becomes available indicating an opportunity for significant reductions in production and consumption;
- to provide a review of destruction technologies after submitting the report called for in the MOP 30 decision on destruction technologies, if new compelling information becomes available; and
- requests the TEAP to provide information to the parties on n-propyl bromide (nPB) if there is new compelling information, and on possible new substances if any previously unreported substances are identified that may have a likelihood of substantial production.

Consideration of Senior Expert and Other Nominations by Parties to the TEAP: On Wednesday, Co-Chair Newberg introduced this issue (UNEP/OzL.Pro.30/2/Add.1, and UNEP/OzL.Pro.30/INF/6), noting prior discussions at OEWG 40 including the ToR for membership to the TEAP, and highlighted

the number of senior experts on the TEAP as between two and four. The US noted that the number of senior expert nominations exceed four, calling for further discussions. Australia, supported by Canada, stressed that nominations should be guided by the expertise needed on the TEAP, and noted that the workload presented is an opportunity to streamline the TEAP's annual update report. The EU reiterated the need to adhere to the ToR.

Delegates agreed to forward this matter to the informal group on ToR review. Closed door discussions on this issue were held on Friday evening. On Friday during the last session of the Preparatory Segment plenary, Lebanon presented the results. She thanked the TEAP for its work, and the individual members for their service, and then announced the endorsement of the following members: Marta Pizano (Colombia) as TEAP Co-Chair for an additional term of four years; Ashley Woodcock (UK) as TEAP Co-Chair for an additional term of four years; Fabio Polonara (Italy) as Refrigeration, Air Conditioning and Heat Pumps TOC Co-Chair for a four-year term; Shiqui Zhang (China) as a senior expert for an additional four-year term; Marco González (Colombia) as a senior expert for an additional four-year term; Sidi Menad Di Ahmed (Algeria) as a senior expert for an additional year; and Mohamed Besri (Morocco) as a senior expert for an additional year.

Final Outcome: In its decision (UNEP/OzL.Pro.30/CRP.13), the MOP decides to endorse the three Co-Chairs and four senior experts as outlined orally by Lebanon during the HLS.

Consideration of the Membership of Montreal Protocol Bodies for 2019: On Wednesday, the Secretariat highlighted that not all regions had submitted their nominations and asked them to do so. Co-Chair Almatouq drew attention to the proposal by Armenia and Bosnia and Herzegovina on behalf of the Eastern Europe and Central Asia region (UNEP/OzL.Pro.30/CRP.4) to address geographical representation under the ExCom to include eight Article 5 parties and eight non-Article 5 parties. Bosnia and Herzegovina explained one of ExCom seats for Article 5 parties would be rotated among Article 5 parties from Eastern Europe and Central Asia. The Russian Federation asked for clarification on the difference between this proposal and the UN regional group and sub-regional classifications. The US highlighted that there are other ways to ensure equal representation.

Grenada, Samoa, and Barbados noted the regional imbalance on the ExCom also affects them so they would be keen to participate in discussions to find a solution.

Canada acknowledged that this is an important but delicate issue, noting it is worth exploring other ways to achieve regional balance without changing the membership of the ExCom. Armenia responded it is interested to learn how this can be achieved.

Jordan, Mexico, and Georgia supported the CRP. The Co-Chairs proposed that the presenters of this CRP continue consultations on this matter. The proponents of the CRP held informal bilateral discussions throughout the week, and reported to plenary on Friday that they had received support from many Article 5 parties, but that more time was needed for all parties to consider the proposal, so they requested that the issue be included on the agenda of OEWG 41. OEWG 40 Co-Chair Almatouq said the request would be noted in the MOP report.

In Thursday's plenary, the Secretariat noted the nominations for Protocol bodies and said the Secretariat would be entrusted to insert them into proper MOP decision texts to be forwarded to the HLS. On Friday evening, the decisions were adopted without amendment.

ImpCom Membership: In its decision (UNEP/OzL.Pro.30/L.2), the MOP confirms the positions of Australia, Chile, Maldives, Poland, and South Africa as members of the Committee for one further year and selects the EU, Guinea-Bissau, Paraguay, Saudi Arabia, and Turkey as members of the Committee for a two-year period beginning on 1 January 2019.

It also notes the selection of Lesley Dowling (Australia) to serve as President and Obed Baloyi (South Africa) to serve as Vice-President and Rapporteur of the Committee for one year beginning on 1 January 2019.

MLF ExCom Membership: In its decision (UNEP/OzL.Pro.30/L.2), the MOP endorses the selection of Argentina, Benin, China, Grenada, Kuwait, Niger, and Rwanda as members of the ExCom representing Article 5 parties; and the selection of Belgium, Canada, France, Hungary, Japan, Norway, and the US as members representing non-Article 5 parties for one year beginning 1 January 2019.

The MOP also notes the selection of Philippe Chemouny (Canada) to serve as Chair and Juliet Kabera (Rwanda) as Vice-Chair of the ExCom for one year beginning 1 January 2019.

OEWG Co-Chairs: In its decision (UNEP/OzL.Pro.30/L.2), the MOP endorses the selection of Alain Wilmart (Belgium) and Laura-Juliana Arciniegas (Colombia) as Co-Chairs of OEWG 41.

Compliance and Data Reporting Issues Considered by the Implementation Committee: On Wednesday, Miruza Mohamed, President, ImpCom, presented a summary of the 60th and 61st meetings of the ImpCom, noting that the agendas of both meetings were light due to the high level of compliance, and highlighting that with the Kigali Amendment coming into force in January 2019, the Committee will have more to consider. Co-Chair Almatouq noted that the CRPs from the ImpCom will be forwarded to the HLS as a package.

Jordan proposed changing the language related to Yemen's non-compliance to reflect the difficulties in reporting due to the ongoing conflict in the country. Ozone Secretariat Legal Advisor Gilbert Bankobeza noted that Yemen would need to report their difficulties to the Secretariat. Yemen reported that the country had been in touch with the Secretariat on this issue, and was in the process of submitting a letter to the Secretariat. Co-Chair Almatouq noted that three draft decisions (UNEP/OzL.Pro.30/CRP.1) would be forwarded to the HLS, and that the discussion in plenary would be recorded in the meeting report. On Friday evening, the HLS adopted the decisions without amendment.

Final Outcome: On data and information provided by the parties in accordance with Article 7 of the Montreal Protocol, the MOP, in its decision (UNEP/OzL.Pro.30/L.2):

- notes that all but two parties that should have reported data for 2017 have done so;
- notes with concern that two parties, namely the Central African Republic and Yemen, have not reported their 2017 data as required under Article 7, and that this places them in non-compliance with their data reporting obligations under the Protocol;
- urges the Central African Republic and Yemen to report the required data to the Secretariat as quickly as possible; and
- requests ImpCom to review the situation at its next meeting.

In its decision on the reporting of zero in Article 7 data reporting forms (UNEP/OzL.Pro.30/L.2), the MOP:

- notes that 20 parties submitted forms for reporting data in accordance with Article 7 for 2017 containing blank cells, contrary to decisions XXIV/14 and XXIX/18, and that all of those parties provided clarification in response to the request of the Secretariat;

- urges all parties, when submitting forms for reporting data in accordance with Article 7, to ensure that in the future all cells in the data reporting forms are completed with a number, including zero, where appropriate, rather than being left blank, in accordance with decision XXIV/14; and

- requests ImpCom to review the status of adherence to paragraph 2 of the present decision at its sixty-third meeting.

In its decision on reporting information on destination countries for exports and source countries for ODS imports (UNEP/OzL.Pro.30/L.2/Add.2), the MOP:

- urges parties exporting controlled substances to report to the Secretariat information on the destinations of their exports, as called for in decision XVII/16; and
- encourages parties importing controlled substances to report to the Secretariat information on the sources of their imports, as set out in decision XXIV/12.

Update on the Situation of the Caribbean Islands Affected by Hurricanes (Decision XXIX/19): On Wednesday, Co-Chair Newberg called for a report on this issue (UNEP/OzL.Pro.30/2). Grenada presented reports from Dominica, Antigua and Barbuda, and the Bahamas, noting that Dominica is still experiencing data-reporting challenges, but that the latter two will be able to meet their obligations under the Protocol, as their national ozone units are functional. Co-Chair Newberg noted that this will be recorded in the meeting report.

Other Matters: Safety Standards for RACHP Systems and Appliances: On Wednesday, the EU said that the purpose of this item (UNEP/OzL.Pro.30/INF/2, Add.1 and UNEP/OzL.Pro.30/INF/3) was to highlight the work of the Secretariat in outlining safety standards to ensure parties could meet their obligations under the Kigali Amendment in the most cost-effective manner, noting the need for the Protocol to be technologically neutral in its consideration of effective refrigeration technologies. China pointed out that Article 5 parties need to be selective when considering alternative technologies. Zambia suggested that the Secretariat work with the UN Committee of Experts on the Transport of Dangerous Goods on safety standards. Saudi Arabia supported maintaining or raising the safety standards. Delegates agreed to discuss this issue at OEWG 41.

Harmonized System Customs Codes for HCFC and CFC

Substitutes: On Wednesday, the EU welcomed the Ozone Secretariat's work with the World Customs Organization (WCO) on standardized customs codes for substances and blends that should help combat illegal trade in substances controlled under the Montreal Protocol (UNEP/OzL.Pro.30/INF/5 and INF/7). He noted that the codes would be up for adoption by WCO in June 2019 and asked all parties to liaise with their customs authorities to urge support for adoption. The US added that if adopted in June 2019, the new codes would enter into effect for WCO parties on 1 January 2022. This discussion was recorded in the MOP meeting report.

Dates and Venue of MOP 31: On Friday, President Ghahramanyan asked the Ozone Secretariat to present upcoming meeting dates. The Secretariat informed parties that OEWG 41 will be hosted in Bangkok, Thailand from 1-5 July 2019, and MOP 31 is confirmed to take place in Rome, Italy from 4-8 November 2019. Italy informed parties that they have reached an agreement to host MOP 31 at the UN Food and Agriculture Organization headquarters in Rome.

Final Outcome: In its decision (UNEP/OzL.Pro.30/L.2), the MOP decides to convene the Thirty-First Meeting of the Parties to the Montreal Protocol in Rome from 4-8 November 2019.

A Brief Analysis of MOP 30

Delegates arrived in Quito with their eyes on the imminent entry into force of the Kigali Amendment and the multiple opportunities and challenges that it brings. The Montreal Protocol has been famously heralded as the “most successful international environmental treaty”; this status was celebrated at MOP 30, but as one delegate observed, “success is not a static state – it takes effort to maintain it.” With the recent confirmation that, long after its phase-out, emissions of CFC-11 are on the rise, delegates’ minds were preoccupied with the possible implications for the Protocol, and how to overcome this new, unexpected hurdle. Coming into MOP 30, the unspoken question was how parties would respond to ensure that the considerable reputation the Montreal Protocol has built over 30 years prevails.

Also on the minds of delegates arriving in Quito were issues related to the Kigali Amendment and its implementation. Carried forward from MOP 29 and OEWS 40 were discussions related to energy efficiency, representation, and financing. Acknowledging that some of these issues represented new territory for the Protocol, the outgoing MOP President defined this as a time of growth and transition. “It is important to reflect on the roots of the success of the Protocol: one where parties respond with unwavering commitment and cooperation.”

This brief analysis looks at how MOP 30 began to address issues related to that transition and what processes have been set in motion to adapt the Protocol to new realities and challenges as well as deal more effectively with old ones, and safeguard its credibility and reputation for effectiveness.

Addressing CFC-11: Accountability and Action

With the recent confirmation of CFC-11 emissions, parties to the Montreal Protocol found themselves oscillating between old and new challenges: the old being having to address the recent emissions of CFC-11, a substance that has been banned since 1996; and the new being whether there is a need to reassess the Protocol’s institutions to address compliance and enforcement. The CFC-11 emissions problem “is a threat to the Protocol, as much as it is a threat to ozone-hole recovery,” said the US in plenary, calling to “take a pause and reassess how we got here.”

While questions had arisen at OEWS 40 regarding the delay in reporting these emissions, parties arrived in Quito expecting more scientific evidence confirming the emissions and their sources. The Scientific Assessment Panel (SAP) accordingly provided an explanation at MOP 30 as to how it has arrived at the conclusion that indeed this banned substance is in use once more. SAP supported its conclusions that CFC-11 was being emitted by explaining that CFC-11 global concentration is expected to decrease by 2% a year; however, the fact that the concentration is now decreasing by 0.08% a year is indicative of an increase in use.

With new evidence pointing to China as the source of these emissions, nervousness permeated the halls on the first day of MOP 30 as many wondered how China and other parties would tackle this. Following the buoyant optimism and drive experienced at the 2016 adoption of the Kigali Amendment, parties noted again and again that this unexpected discovery threatened to drive the steady course of the Montreal Protocol off its linear success path.

In a statement that many delegates appreciated as “transparent and mature” China made no excuses for the use of CFC-11 by enterprises in the country. The head of delegation furthermore described the swift and extensive inspections that had been conducted across the country since August 2018 and informed

the MOP that several perpetrators had been brought to justice. “This was a refreshingly unexpected show of humility,” said one observer, given the reaction from China at OEWS 40, when the country had questioned the credibility of the data presented at that time. With a view to ensure a sustainable solution to this violation, China repeatedly noted that it continues to investigate why this has happened and is committed to address this, suggesting for instance a seminar on compliance and education. In a gesture of cooperation, China reached out to parties inviting their input into the seminar organization and participation.

In what might have been a contentious and eclipsing issue at MOP 30, China’s prompt admittance and ownership over the CFC-11 emissions allowed parties to focus on ways forward. But herein lies the new challenge: some parties rightly questioned whether it is enough to just address this recent violation or whether this case raises broader questions about compliance and monitoring of phased-out ODS for all parties to the Montreal Protocol. As the Federated States of Micronesia reflected, “it may be time to look to improving our enforcement and implementation systems for the future.” Indeed, this process has defined itself as one where parties have built a relationship founded on trust, but has the time come to “trust, but verify” by reassessing the Protocol’s institutional capacity to address challenges?

A Time of Transition and Reflection: Are Protocol Institutions, Mechanisms and Approaches Ready for What’s to Come?

In this process, trust has been established over years of unabated effort, focus, and collaboration, but the Kigali Amendment—as a delegate from India aptly described it—has brought with it new challenges for Article 5 parties. One such challenge regards financing the cost of the HFCs phase-down.

At this meeting, parties expected a comprehensive progress report from the Executive Committee (ExCom) of the Multilateral Fund (MLF), including cost guidelines for the HFC phase-down. Many applauded the ExCom’s work, trusting their representatives on the Committee to ensure the final guidelines were balanced and needs-responsive. Others, however, were not so keen to leave the finalization of the guidelines to the ExCom. In a terse exchange during the plenary discussion, a suggestion by the US to entrust the guidelines to the ExCom was met by a definite “no” from India, who expressed concern that their specific needs may not be well understood by the ExCom. The delegate from India noted that his reading of decision XXVIII/2 instructed the ExCom to check back with the MOP before finalizing the guidelines, and it is this understanding that eventually prevailed. Commenting on this, some Article 5 parties opined that this discussion was “reminiscent of the discussions on HCFC phase-down,” where a number of them had felt their issues had not been fully understood. “These guidelines represent one of the most sensitive aspects of the Kigali Amendment. We need to learn from history on this,” one of the sponsors of the proposal confided, alluding to the aforementioned HCFC-guideline discussions.

Several issues arose on the question of representation. First, as a carry-over from OEWS 40 (and perhaps Kigali in 2016), countries with high ambient temperatures (HAT countries) clamored to be recognized as separate from other Article 5 parties, even as they postponed the discussion of a proposal for special funding for their energy-efficient-technology transition needs. The question of whether some HAT countries still qualify to be listed as Article 5 parties was raised by the US in plenary, and may become an issue to watch in the future.

Second, the issue of geographic representation also came up in discussions over expert nominees to the TEAP. Traditionally, the TEAP's membership has reflected geographical balance, as well as a balance of expertise, but at OEWG 40, the TEAP Co-Chairs presented their updated "Matrix of Needed Expertise," and called for nominees that fit those areas of expertise, regardless of where they came from. At MOP 30, there was some push back on this suggestion, but behind closed doors, parties seemed to agree that, with respect to the senior experts, expertise outweighs geographic representation. The MOP chose to extend the terms of two senior experts by four years, but only granted one more year to two other long-standing experts, as their expertise "is already represented on the Panel." However, the issue of representation still remains an unresolved issue for HAT countries. "Air conditioning is not a luxury to us. It is crucial for HAT countries to have representation on the science panels to reflect our unique circumstances," said one HAT country representative.

The debate over regional representation also raged where the ExCom was concerned. At the prompting of Armenia and Bosnia and Herzegovina, parties were asked to consider designating a permanent seat for Eastern Europe and Central Asia on the ExCom. "The Soviet Union split up two decades ago, and yet the ExCom has never recognized us as full parties, only allowing us to participate once every four years," said one delegate. This issue was deferred to OEWG 41, in July 2019, where this may continue to prove to be a complex matter to address, due to the differences between the UN's designation of regions and the Montreal Protocol's description of Article 5 and non-Article 5 parties.

Financing the Transition

Energy efficiency, another recurring point of discussion since Kigali, remained a prominent agenda item at MOP 30. The African Group, in what was welcomed as a proactive step, presented a proposal related to market regulation to ensure effective energy efficiency transitions. However, many saw the proposal as going far beyond the mandate of the Protocol. Throughout the discussions on this proposal from OEWG 40, it was clear that the requirement of the Kigali Amendment action on a high-GWP substance like HFCs requires taking into account energy efficiency aspects in a way that was not an issue when the Montreal Protocol was only dealing with ODS. Moving into this new realm proved to be difficult at this meeting. In the contact group discussions at MOP 30, parties reformulated the African Group proposal to instead address demonstration projects for HFC phase-down, calling for broader discussions around how best Article 5 parties can access co-financing, including through various modalities for cooperation.

The Montreal Protocol is known for supporting implementation, and the MLF is tasked with providing funding to Article 5 parties to enable them to meet their obligations under the Protocol. At MOP 30, the ExCom highlighted a USD 2.5 million surplus in funds due to additional voluntary contributions made by 17 donor parties, which would be made available for the changing needs of parties. With an agreement to fund and support, *inter alia*, policies and regulations, capacity building, best practices, and other activities to achieve energy efficient technology adoption, the MLF is entering new terrain. The contact group on energy efficiency held extensive discussions on how to assist parties to implement their Kigali-related obligations, including calling on the MLF to work with the Ozone Secretariat to secure additional funding for Kigali implementation. The provision of funding has not been within the domain of the Ozone Secretariat, therefore this new arrangement will pose a unique challenge.

Moving Forward

Throughout the week it was difficult to escape the feeling that the Montreal Protocol is entering a transitional phase where its tried-and-true institutions and procedures might need to be reassessed and adapted to protect its hard-won reputation as one of the most successful multilateral environment agreements.

MOP 30 deferred several complex issues to OEWG 41 and MOP 31, making 2019, as MOP President Ghahramanyan put it, "an exciting year." These include: the relationship between stratospheric ozone and proposed solar radiation management strategies; linkages between HCFCs and HFCs in transitioning to low global warming potential alternatives; a new Scientific Assessment Panel report on CFC-11 emissions; new terms of reference for the TEAP; the composition of the MLF ExCom; and safety standards.

In discussing the challenges that have presented themselves, one party maintained that, as long as the Montreal Protocol was supported by strong scientific expertise and evidence, it would prevail. Commenting on this, however, another observer pointed to the "the strong political will" of the parties to drive implementation, which he noted, "builds the bridge between science and action."

Upcoming Meetings

2018 CVF Virtual Climate Summit: The Climate Vulnerable Forum (CVF) will convene a global political leaders' summit to build increased support to safeguard those that are most vulnerable to the growing climate change impacts. The Virtual Climate Summit is the first Heads of Government-level conference to be held entirely online, eliminating greenhouse gas (GHG) emissions and promoting inclusive dialogue. **date:** 22 November 2018 **location:** virtual **www:** <https://thecvf.org/virtual-leaders-summit-to-raise-climate-ambition-and-accelerate-action/>

Fourth Meeting of the Global Commission on the Geopolitics of Energy Transformation: At its fourth meeting, the Global Commission on the Geopolitics of Energy Transformation will review its draft report on the geopolitical implications of the expected energy transformation and the large-scale deployment of renewable energies. The Commission is expected to publish its final report in January 2019 during the International Renewable Energy Agency (IRENA) Assembly. **dates:** 27-29 November 2018 **location:** Abu Dhabi, UAE **contact:** Global Commission on the Geopolitics of Energy Transformation **email:** geopolitics@irena.org **www:** <http://geopoliticsofrenewables.org/>

Global Science, Technology and Innovation Conference (G-STIC) 2018: The Conference aims to accelerate the development, dissemination, and deployment of technology innovations that enable the achievement of the Sustainable Development Goals (SDGs). G-STIC 2018 will build on the results of G-STIC 2017 and further discuss the policy changes needed for the technological transition to sustainable societies. In addition, the different thematic sessions will dive deeper into integrated technological solutions with significant impact on the SDGs, and further strengthen the multi-stakeholder communities around the different thematic clusters of G-STIC. **dates:** 28-30 November 2018 **location:** Brussels, Belgium **contact:** VITO NV **phone:** +323-286-7458 **www:** <https://www.gstic.org>

Katowice Climate Change Conference: The Katowice Climate Change Conference will include the 24th session of the Conference of the Parties (COP 24) to the UN Framework Convention on Climate Change (UNFCCC), along with meetings

of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol, the Subsidiary Body for Scientific and Technological Advice, the Subsidiary Body for Implementation, and the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement. COP 24 is expected to finalize the rules for implementation of the Paris Agreement on climate change under the Paris Agreement work programme. A High-Level Ministerial Dialogue on Climate Finance is expected to be held in conjunction with COP 24. **dates:** 2-14 December 2018 **location:** Katowice, Poland **contact:** UNFCCC Secretariat **phone:** +49-228-815-1000 **fax:** +49-228-815-1999 **email:** cop24@mos.gov.pl; secretariat@unfccc.int **www:** http://cop24.gov.pl/en/; http://unfccc.int

55th Meeting of the GEF Council: The GEF Council will approve projects to realize global environmental benefits in the GEF's focal areas, provide guidance to the GEF Secretariat and implementing agencies, and discuss its relations with the conventions for which it serves as the financial mechanism. **dates:** 17-20 December 2018 **location:** Washington DC, US **contact:** GEF Secretariat **phone:** +1-202-473-0508 **fax:** +1-202-522-3240/3245 **email:** secretariat@thegef.org **www:** https://www.thegef.org/council-meetings/gef-55th-council-meeting

Fourth Session of the UN Environment Assembly (UNEA): The theme of the fourth session of the UN Environment Assembly is "Innovative solutions for environmental challenges and sustainable consumption and production." It will be preceded by a meeting of the Open-Ended Committee of Permanent Representatives (OECPR) from 4-8 March 2019. **dates:** 11-15 March 2019 **location:** Nairobi, Kenya **contact:** UNEP **email:** beatpollution@unenvironment.org **www:** http://web.unep.org/environmentassembly/

International Symposium on the Unexpected Increase in Emissions of Ozone-Depleting CFC-11: Organized by World Climate Research Programme's Stratosphere-troposphere Processes and their Role in Climate (SPARC) project, the purpose of the Symposium is to provide a forum for scientists and technologists to explore and present information on the potential causes of the increased CFC-11 emissions to provide a firmer scientific basis for future Montreal Protocol discussions on this issue. **dates:** 25-27 March 2019 **location:** Vienna, Austria **contact:** Susan McFadden, NASA **email:** susan.k.mcfadden@nasa.gov **www:** https://www.sparc-climate.org/meetings/meetingscfc-11-workshop-march-2019-in-vienna/

49th Session of the IPCC: This meeting will approve the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. **dates:** 8-12 May 2018 **location:** Kyoto, Japan **contact:** IPCC Secretariat **phone:** +41-22-730-8208/54/84 **fax:** +41-22-730-8025/13 **email:** IPCC-Sec@wmo.int **www:** http://www.ipcc.ch

Montreal Protocol OEWG 41: Montreal Protocol OEWG 41 will meet to prepare for MOP 31. **dates:** 1-5 July 2019 **location:** Bangkok, Thailand **contact:** Ozone Secretariat **phone:** +254-20-762-3851 **fax:** +254-20-762-0335 **email:** ozoneinfo@unep.org **www:** http://ozone.unep.org/meetings

High-level Political Forum on Sustainable Development (HLPF) 2019: HLPF 2019 will address the theme, "Empowering people and ensuring inclusiveness and equality." It will conduct an in-depth review of SDG 4 (quality education), SDG 8 (decent work and economic growth), SDG 10 (reduced inequalities), SDG 13 (climate action), and SDG 16 (peace, justice and strong institutions), in addition to SDG 17 (partnerships for the Goals), which is reviewed each year. Among other items, the Forum will consider the Global Sustainable Development Report, which is

issued every four years. **dates:** 9-18 July 2019 **location:** UN Headquarters, New York **contact:** UN Division for Sustainable Development Goals **fax:** +1-212-963-4260 **www:** https://sustainabledevelopment.un.org/hlpf/2019

Montreal Protocol MOP 31: MOP 31 will address, *inter alia*, implementation of the Kigali Amendment, linkages between HCFCs and HFCs in transitioning to low global warming potential alternatives, issues related to energy efficiency while phasing down HFCs, and critical and essential use exemptions. **dates:** 4-8 November 2019 **location:** Rome, Italy **contact:** Ozone Secretariat **phone:** +254-20-762-3851 **fax:** +254-20-762-0335 **email:** ozoneinfo@unep.org **www:** http://ozone.unep.org/meetings For additional meetings, see http://sdg.iisd.org

Glossary

CFCs	Chlorofluorocarbons
CFC-11	Trichlorofluoromethane
CRP	Conference room paper
CTC	Carbon tetrachloride
EIA	Environmental Investigation Agency
ExCom	Executive Committee (MLF)
FSM	Federated States of Micronesia
GWP	Global Warming Potential
HAT	High ambient temperature
HCFCs	Hydrochlorofluorocarbons
HFCs	Hydrofluorocarbons
HLS	High-level Segment
HTOC	Halons Technical Options Committee
ImpCom	Implementation Committee
IPCC	Intergovernmental Panel on Climate Change
LAU	Laboratory and analytical uses
MBTOC	Methyl Bromide Technical Options Committee
MLF	Multilateral Fund
MOP	Meeting of the Parties
ODS	Ozone depleting substances
OEWG	Open-ended Working Group
RAC	Refrigeration and air conditioning
RACHP	Refrigeration, air-conditioning and heat-pump
SAP	Scientific Assessment Panel
TEAP	Technology and Economic Assessment Panel
TOC	Technical Options Committee
ToR	Terms of reference
UAE	United Arab Emirates
UNEP	United Nations Environment Programme
UV	Ultraviolet