

SUMMARY OF THE ELEVENTH MEETING OF THE CONFERENCE OF THE PARTIES TO THE VIENNA CONVENTION AND THE TWENTY-NINTH MEETING OF THE PARTIES TO THE MONTREAL PROTOCOL: 20-24 NOVEMBER 2017

The eleventh meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer (COP 11) and the twenty-ninth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (MOP 29) met from 20-24 November 2017, in Montreal, Canada. Over 420 participants from governments, UN agencies, intergovernmental and non-governmental organizations, academia, and industry attended the joint meeting.

The Preparatory Segment was supposed to meet from Monday through Wednesday, followed by the High-level Segment (HLS) on Thursday and Friday. As the Preparatory Segment was unable to complete its work by Wednesday, it reconvened a number of times during the HLS.

MOP 29 adopted 10 substantive and 16 procedural decisions. Substantive decisions adopted include: essential-use exemptions and critical-use exemptions; future availability of halons; and energy efficiency. Procedural decisions adopted include: the budget; the Multilateral Fund (MLF) replenishment; membership of Montreal Protocol bodies; and a number of compliance-related decisions.

While most of the agenda items at COP 11/MOP 29 proved to be relatively uncontroversial, the MLF Replenishment Contact Group worked until close to midnight on Friday night before they could agree on a draft decision to be presented to plenary. Energy efficiency was another item that required much discussion, with a draft decision finally agreed on Friday evening. While these issues proved tricky to resolve, having done so means that parties have taken steps to ensure continued implementation of the Montreal Protocol, and have taken the first steps to implementing the Kigali Amendment, which has received sufficient ratifications to enter into force on 1 January 2019.

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 releasing these substances into the atmosphere could deplete the ozone layer, hindering its ability to prevent harmful ultraviolet rays from reaching the Earth. This would adversely

affect ocean ecosystems, agricultural productivity, and human and animal populations. 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.

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 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 its amendments, except the Kigali Amendment, have been ratified by 197 parties, representing universal ratification.

LONDON AMENDMENT AND ADJUSTMENTS: At MOP 2, held in London, UK, in 1990, delegates tightened control schedules and added ten more CFCs, carbon tetrachloride (CTC), and methyl chloroform to the list of ODS. MOP 2 also established the MLF, which meets the incremental costs incurred by Article

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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 hydrochlorofluorocarbons (HCFCs). MOP 4 also agreed to enact non-compliance procedures, establishing an Implementation Committee 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; 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.

MOP 21: MOP 21 took place in Port Ghalib, Egypt, in 2009, and adopted decisions on: alternatives to HCFCs; institutional strengthening; environmentally-sound management of ODS banks; methyl bromide; and data and compliance issues. This meeting was the first at which delegates considered a proposal to amend the Protocol to include hydrofluorocarbons (HFCs), a non-ODS with a high global warming potential (GWP) produced as a consequence of ODS phase-out.

MOP 22: MOP 22 took place in Bangkok, Thailand, in 2010, and adopted decisions on, *inter alia*: the terms of reference for the Technology and Economic Assessment Panel (TEAP) study on the MLF replenishment and the evaluation of the financial mechanism; and assessment of technologies for ODS destruction. Delegates also considered two amendments proposed to address HFCs under the Protocol.

COP 9/MOP 23: COP 9/MOP 23 took place in Bali, Indonesia, in 2011, and adopted decisions on, *inter alia*: a US\$450 million replenishment of the MLF for the 2012-2014 period; updating the nomination process and recusal guidelines for the TEAP; and the treatment of ODS in relation to servicing ships. Delegates also discussed the two proposed amendments to the Protocol to address HFCs.

MOP 24: MOP 24 took place in Geneva, Switzerland, in 2012, and adopted decisions on, *inter alia*, the review by the Scientific Assessment Panel of RC-316c, a CFC not controlled by the Montreal Protocol; and procedural issues related to the TEAP and its subsidiary bodies. MOP 24 did not reach agreement on two draft decisions on: clean production of HCFC-22 through by-product emission control; and an HFC amendment to the Protocol.

MOP 25: MOP 25 was held in Bangkok, Thailand, in 2013 and adopted 21 decisions, including on: terms of reference for the 2015-2017 MLF replenishment study of; implementation of the Montreal Protocol with regard to small island developing states; and a TEAP report on ODS alternatives. MOP 25 did not reach agreement on: HFC amendment proposals; additional funding for the MLF for implementing the Montreal Protocol to maximize the climate benefit of the accelerated phase-out of HCFCs; and the harmonization and validation of the climate impact fund.

COP 10/MOP 26: COP 10/MOP 26 was held in Paris, France, in 2014, and adopted decisions on, *inter alia*: a US\$507.5 million replenishment of the MLF for the 2015-2017 period; availability of recovered, recycled or reclaimed halons; and a TEAP report on ODS alternatives. Delegates also discussed possible ways to move the HFC issue forward, deciding to convene a two-day workshop in 2015, back-to-back with an additional open-ended working group (OEWG) session, to continue discussions on HFC management.

MOP 27: MOP 27 met from 1-5 November 2015, in Dubai, United Arab Emirates. Delegates adopted decisions on, *inter alia*, avoiding the unwanted import of products and equipment containing or relying on HCFCs. The MOP also established a contact group on the feasibility and ways of managing HFCs, which met throughout the week. Parties adopted the Dubai pathway on HFCs—the outcome from the contact group—a “roadmap” for negotiating an HFC amendment, including provisions for an additional OEWG meeting and an extraordinary MOP during 2016.

ExMOP 3: The third Extraordinary Meeting of the Parties to the Montreal Protocol (ExMOP 3) took place from 22-23 July 2016. ExMOP 3 considered issues contained in the Dubai Pathway on HFCs and convened a ministerial round table entitled “Moving Forward to Deliver in 2016 on the Mandate of the Dubai Pathway on HFCs.” Delegates adopted a decision for the TEAP report to MOP 28 to assess the climate benefits and MLF financial implications of proposed HFC phase-down schedules.

MOP 28: MOP 28 convened in Kigali, Rwanda, from 10-14 October 2016. MOP 28's primary decision was to adopt the Kigali Amendment on HFCs. MOP 28 also adopted decisions on, *inter alia*: energy efficiency in the refrigeration and air conditioning sectors; safety standards relevant for low-GWP alternatives; and the terms of reference for the TEAP study on the 2018-2020 MLF replenishment.

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. As of 25 November 2017, 22 parties have ratified the Kigali Amendment.

COP 11/MOP 29 REPORT

PREPARATORY SEGMENT

OEWG 39 Co-Chair Cheikh Ndiaye Sylla (Senegal) opened the Preparatory Segment on Monday, 20 November, lauding the Montreal Protocol's thirtieth anniversary.

Noting Montreal is located in Mohawk territory, Elder Harvey Gabriel, indigenous Mohawk representative, led parties in a traditional prayer.

Catherine McKenna, Minister of Environment and Climate Change, Canada, said the Protocol demonstrates: the need for good science; the importance of leadership and listening to experts; and that innovation can help. Minister McKenna praised the parties that have deposited instruments of ratification, allowing the Kigali Amendment to enter into force on 1 January 2019.

Calling the Protocol a “unique, planet saving agreement,” Brian Mulroney, former Prime Minister, Canada, lauded the Protocol's inclusive framework, political engagement, and the efforts of industry to meet the requirements of the mandated phase-downs.

Tina Birmpili, Executive Secretary, Ozone Secretariat, praised the Protocol's robust governance structure for allowing flexibility in tightening existing controls and building in new measures, and called upon parties to build on the "legacy of collaboration" to address issues such as the MLF replenishment.

ORGANIZATIONAL MATTERS: Adoption of the Agenda of the Preparatory Segment: OEWG 39 Co-Chair Cynthia Newberg (US) introduced the provisional agenda (UNEP/OzL.Conv.11/1-UNEP/OzL.Pro.29/1 and UNEP/OzL.Conv.11/1/Add.1-UNEP/OzL.Pro.29/1/Add.1) on Monday. Saudi Arabia, supported by Bahrain, requested addressing matters related to linkages between the HCFC phase-out and HFC phase-down. Grenada requested consideration of the effects of recent hurricanes on Caribbean islands. Co-Chair Newberg suggested the proposed topics be discussed under "Other Matters."

Organization of Work: OEWG 39 Co-Chair Newberg suggested, and delegates agreed, to address the topics in order of the agenda. On unresolved issues from OEWG 39, she said that delegates would be invited to reconvene those contact groups under the relevant agenda items.

HIGH-LEVEL SEGMENT

On Thursday, 23 November, COP 10 President Sydney Alexander Samuels Milson, Minister of Environment and Natural Resources, Guatemala, opened the HLS, saying "important, systematic research" can be hampered by limited funding.

MOP 28 President Vincent Biruta, Minister of Environment, Rwanda, urged parties to finalize their "broad" agenda, including on the MLF replenishment. Erik Solheim, Executive Director, UN Environment (UNEP), called the Montreal Protocol "a testimony of the spirit of togetherness of nations and humans." Minister McKenna said the Protocol showcases that if science, political leadership, and industry come together in good faith, the world's biggest challenges can be solved.

ORGANIZATIONAL MATTERS: Election of Vienna Convention COP 11 Officers: COP 11 elected by acclamation: Marc D'Iorio (Canada) as President; Ezzat Lewis Agaiby (Egypt), Abdullah Al Islam Jakob (Bangladesh), and Liana Ghahramanyan (Armenia) as Vice-Presidents; and Ulises Lovera (Paraguay) as Rapporteur.

Election of Montreal Protocol MOP 29 Officers: MOP 29 elected by acclamation: Yaqoub Al-Matouq (Kuwait) as President; Azra Rogović-Grubić (Bosnia and Herzegovina), Patricia Leite (Brazil), and Larke Williams (US) as Vice-Presidents; and Samuel Paré (Burkina Faso) as Rapporteur.

Adoption of the Agenda and Organization of Work: Delegates adopted the agenda (UNEP/OzL.Conv.11/1-UNEP/OzL.Pro.29/1, section II). On the organization of work, COP 11 President Marc D'Iorio (Canada) noted the HLS will adjourn where necessary to allow the Preparatory Segment to conclude its work.

PRESENTATIONS BY THE ASSESSMENT PANELS ON THE STATUS OF THEIR WORK, INCLUDING LATEST DEVELOPMENTS: Scientific Assessment Panel Co-Chair John Pyle described the outline of and review process for the Scientific Assessment of Ozone Depletion: 2018 report, pointing to highlights such as: an evaluation of HCFC metrics; a focus on chlorine-containing very short-lived substances; the inclusion of a new chapter on HFCs; as well as an update of the popular "Twenty Questions and Answers on Ozone Layer Depletion" booklet.

Environmental Effects Assessment Panel Co-Chairs Janet Bornman and Nigel Paul presented the Panel's status report on impacts to people and the environment. Bornman explained that differences in cloud cover, rainfall, temperature, and wind, due to ozone depletion, have contributed to, among others, forest fires, damages to freshwater ecosystems, and impacts on crop production. Paul explained a range of ecosystem effects, including the timing of crops ripening, crop quality, the breakdown of plant material, exposure of permafrost soils, and terrestrial runoff to water ecosystems.

TEAP Co-Chairs Marta Pizano and Bella Maranion reported on progress in the TEAP's work, highlighting findings related to foams, halons, medical uses and aerosols, methyl bromide, and refrigeration and air conditioning and heat pumps (RACHP) technologies. They pointed to positive trends, such as the increased insulation performance of zero-ozone-depleting-potential (ODP) foams, as well as challenges and issues of concern, such as unreported uses of methyl bromide. Pizano and Maranion underscored that the scope of the TEAP's work is to analyze and present technical information, not to recommend policy measures. They further emphasized the TEAP and its Technical Options Committees (TOCs) seek to be aligned with the current and future needs of parties.

PRESENTATION BY THE CHAIR OF THE MLF EXECUTIVE COMMITTEE (EXCOM): On Friday, MLF ExCom Chair Paul Krajnik (Austria) presented the Report of the ExCom (UNEP/OzL.Pro.29/6), highlighting the MLF's decisions, activities, and achievements. He noted, among others, funding approval for 30 Stage II HCFC Phase-out Management Plans (HPMPs), with only Syria not yet having implemented its Stage I HPMP. He also noted additional contributions to implement HFC phase-down enabling activities, saying these total US\$14 million.

STATEMENTS BY HEADS OF DELEGATION: A number of countries gave updates on the status of their progress in ratifying the Kigali Amendment. India said that phasing down HFCs is challenging for industries, particularly in the development of new, commercially-viable technology. Uganda called for support to train technicians "in a language they can understand."

Luxembourg drew attention to his country's additional voluntary contribution to the MLF. Japan highlighted his country could only provide funding for the HFC phase-down once it has ratified the Kigali Amendment. France said parties' prime responsibility is to swiftly ratify the Kigali Amendment.

Comoros emphasized many small island developing states are heavily dependent on refrigeration systems for food imports and called upon key partners to maintain the MLF "in good health." Pointing to the need for early action on the phase-down of HFCs, Italy highlighted additional support provided through bilateral cooperation. Sri Lanka delineated his country's efforts to phase out ODS and foster a low-carbon economy.

Côte d'Ivoire highlighted that his country ratified the Kigali Amendment and signed the Abidjan Appeal, which calls upon others to follow suit. Nepal stated it requires support from UNEP and the MLF with the HCFC phase-out and HFC phase-down. Syria noted that, despite the war, they are committed to implementing the Protocol, and phasing out HCFCs.

Cambodia underscored its partnerships with the private sector to comply with Montreal Protocol obligations. Mongolia said the Protocol is a model to show the international community "we can overcome obstacles and reach our goals." Ecuador outlined

steps taken nationally to ensure compliance with the Protocol. Swaziland stated that since 2015, HCFC consumption has been reduced by over 60% from its baseline.

Ethiopia noted the Protocol will play a big role in addressing HFCs through implementing the Kigali Amendment. Lao People's Democratic Republic announced that his country has deposited its instrument of ratification to the Kigali Amendment. The Dominican Republic noted his country has succeeded in phasing out CFCs, halons, and methyl bromide. Indonesia expressed commitment to the HCFC phase-out schedule noting the country is ahead of schedule.

The Philippines underscored that the Kigali Amendment should not become a "paper tiger" but should be implemented as a strong measure to deal with HFCs, calling for engaging the private sector in HFC phase-down efforts. Egypt highlighted her country's efforts to phase out HCFCs. Sierra Leone lauded the Montreal Protocol for exemplifying key principles of multilateralism, including the principle of common but differentiated responsibilities, the precautionary principle, and science-based action. Sudan highlighted his government's efforts in phasing out HCFCs.

The International Institute of Refrigeration pointed to the potential greenhouse gas emissions reductions, resulting from cooling equipment's improved energy efficiency. The Alliance for Responsible Atmospheric Policy supported an effective MLF replenishment.

An in-depth summary of Thursday's statements is available at: <http://enb.iisd.org/vol19/enb19137e.html>

HIGH-LEVEL ROUND TABLE – IDENTIFYING FUTURE OPPORTUNITIES AND PRIORITIES: On Thursday, this ministerial roundtable, moderated by Leyla Acaroglu, UN Champion of the Earth 2016, took place. The roundtable featured discussions on a number of issues, including replicable successes from the Montreal Protocol, catalysts to drive action, and the role of education and awareness.

An in-depth summary of Thursday's High-level Roundtable is available at: <http://enb.iisd.org/vol19/enb19137e.html>

SCIENCE EVENT – THE SCIENTIFIC FOUNDATION OF THE MONTREAL PROTOCOL: PAST, PRESENT AND FUTURE: On Thursday, this science panel discussion, moderated by Mona Nemer, Chief Science Advisor, Canada, took place. The panel discussion featured statements and a panel discussion. An in-depth summary of the Science Panel is available at: <http://enb.iisd.org/vol19/enb19137e.html>

CLOSING SESSION: Report of the Preparatory Segment Co-Chairs and Consideration of the Decisions Recommended for Adoption by COP 11/MOP 29: On Saturday morning, after the closing of the Preparatory Segment at 12:51 am, Co-Chair Newberg reported on the work of the Preparatory Segment to the HLS. She noted all agenda items were concluded and forwarded to the HLS. She noted minor textual changes to the draft decision on TEAP membership (UNEP/OzL.Pro.29/CRP.16) to reflect that parties should consult on the nominations. She then noted the draft decision on the extension of the fixed-exchange-rate mechanism to the 2018–2020 replenishment of the MLF (UNEP/OzL.Pro.29/CRP.15) was not introduced during the Preparatory Segment and therefore not forwarded to the HLS. The UK clarified that the contact group had reached agreement, indicating it should have been forwarded. Australia questioned how to address this issue procedurally. After consultations, MOP 29 President Al-Matouq explained that if there are no objections, it will be adopted with the other decisions.

Adoption of COP 11/ MOP 29 Decisions and the Meeting

Report: On Saturday morning, MOP 29 Rapporteur Paré reviewed the report of the meeting (UNEP/OzL.Conv.11/L.1-UNEP/OzL.Pro.29/L.1, and Add.1 and Add.2) paragraph by paragraph. Delegates adopted the report with minor textual amendments.

MOP 29 President Al-Matouq, recognized the hard work done by all, and closed the meeting at 1:48 am.

COP 11/MOP 29 OUTCOMES

COMBINED VIENNA CONVENTION AND MONTREAL PROTOCOL ISSUES: Financial Reports and Budgets of the Trust Funds for the Vienna Convention and the Montreal

Protocol: On Monday, Co-Chair Newberg introduced this item (UNEP/OzL.Conv.11/4-UNEP/OzL.Pro.29/4 and UNEP/OzL.Conv.11/4/Add.1-UNEP/OzL.Pro.29/4/Add.1). Delegates established a Budget Committee, chaired by Jean Clarke (Ireland), to discuss the relevant documents and prepare the necessary draft decisions. The Committee met throughout the week.

On Friday, Budget Committee Chair Clarke reported the group had agreed on the budgets for both the Convention and the Protocol. Delegates agreed to forward the two conference room papers (CRPs) to the HLS, which approved the budget on Saturday morning.

Final Outcome: In its final decision (UNEP/OzL.Conv.11/CRP.3), the COP, *inter alia*:

- reaffirms a working capital reserve equivalent to 15% of the annual operational budgets for the triennium 2018-2020 to be used to meet the final expenditures under the Trust Fund;
- approves the revised 2017 budget for the Trust Fund in the amount of US\$1,308,964, the 2018 budget in the amount of US\$788,167, the 2019 budget in the amount of US\$800,981, and the 2020 budget in the amount of US\$1,370,010;
- approves the contributions to be paid by the parties of US\$733,000 in 2018, US\$863,000 in 2019 and US\$986,000 in 2020;
- authorizes the Secretariat to draw down funds from the cash balance to cover the shortfall between contribution levels and the approved 2018, 2019 and 2020 budgets; and
- requests the Secretariat to ensure the full utilization of programme support costs available to it in 2018-2020 and later years to offset those costs against the administrative components of the approved budget.

In its final decision on the financial reports and budgets for the Montreal Protocol (UNEP/OzL.Pro.29/CRP.11), the MOP, *inter alia*:

- approves the revised 2017 budget in the amount of US\$5,145,954 and the 2018 budget amount of US\$5,546,722, and also approve contributions to be paid by the parties of US\$5,546,722 for 2018, and to note the contributions of US\$5,594,470 for 2019;
- encourages parties, non-parties and other stakeholders to contribute financially, and through other means, to assist members of assessment panels and their subsidiary bodies with a view to ensuring their continued participation in assessment activities under the Protocol;
- notes with concern that a number of parties have not paid their contributions for 2017 and prior years, and urges those parties to pay both their outstanding contributions and their future contributions promptly and in full; and
- requests the Executive Secretary to prepare results-based budgets and work programmes for the years 2019 and 2020,

presenting two budget scenarios and work programmes based on the projected needs for the biennium in a: zero-nominal-growth scenario; and a scenario based on further recommended adjustments to the zero-nominal-growth scenario and the related added costs or savings.

MLF REPLENISHMENT: Supplementary Report of the TEAP Replenishment Task Force (RTF): On Monday, TEAP RTF Co-Chairs Lambert Kuijpers, Bella Maranion and Shiqui Zhang presented the supplementary report. Zhang described their mandate, including the OEWG 39 request for, *inter alia*, a scenario comparing previously approved projects with business plan estimates to determine uncertainty for planned activities.

Kuijpers noted a deviation of 13.5% between planned and approved funding for 2005-2016. On additional HPMP-related requests, he said the RTF estimated US\$0-10 million for additional demonstration projects to encourage low- or zero-GWP activities. He noted deferring HPMP Stage III activities to the next triennium would result in zero costs, informing delegates that the HPMPs require US\$65.62 million for the triennium 2018-2020. Maranion highlighted HPMP cost-effectiveness values for low volume-consuming (LVC) and non-LVC countries, noting the OEWG requested growth and zero-growth scenarios. She said they examined HFC phase-down enabling activities, highlighting the total funding requirement is US\$53.48 million.

Burkina Faso and Cameroon requested clarification on the zero value for HPMP Stage III activities. Kuijpers said OEWG 39 requested deferring all Stage III activities to after the 2018-2020 triennium. Kuijpers, responding to a query from Mexico, said the OEWG requested the omission of information on the acceleration of the HCFC phase-out activities. China queried the difference between planned and approved funding. Kuijpers said the figures are ranges, and the phase-out stage determines the fluctuations. Kenya requested clarification on the reduction of planned funding for non-LVC countries. Kuijpers replied that reducing planned funding translates to an increase in approved funding.

Egypt said there is insufficient funding to support voluntary HFC phase-down or enabling activities. Mauritius noted HPMP Stage III activities could overlap with Stage I of the HFC phase-down. Reiterating continued support to the Protocol and the MLF, the US suggested all MLF contributions be used as effectively as possible. He called for fair burden sharing and prioritizing funds.

Estonia, on behalf of the European Union (EU) and its 28 Member States, requested further explanation on the report's assumptions and methodologies. China noted potential financial obstacles for adopting low-GWP alternatives.

A contact group on the MLF Replenishment, co-chaired by Davinder Lail (UK) and Samuel Paré (Burkina Faso), was established to further consider these issues and met from Monday evening to Friday night. On Monday and Tuesday, the group met in open sessions to further consider the TEAP supplementary report as well as the ExCom report (UNEP/OzL.Pro.29/6).

In plenary on Wednesday, contact group Co-Chair Lail reported that delegates agreed to break into a smaller group consisting of 12 Article 5 country representatives and 12 non-Article 5 country representatives to continue negotiations. Article 5 country representatives in the small group were India, China, Malaysia, Kuwait, Bahrain, Saudi Arabia, South Africa, Nigeria, Brazil, Mexico, Grenada, Argentina, and Burkina Faso (as Co-Chair). The non-Article 5 country representatives were Estonia, Sweden, Belgium, France, Italy, Germany, US, Japan, Australia, Switzerland, New Zealand, Canada, and UK (as Co-Chair).

Co-Chair Sylla announced that the group would convene for the duration of the meeting.

On Saturday morning, MLF Replenishment contact group Co-Chair Paré announced that the group had finalized its work and had agreed to a CRP. Lamenting that the contribution they are obligated to pay is 20% higher than they had anticipated, Belarus requested a footnote be added to the CRP to reflect that the additional amount be considered a voluntary contribution. The US highlighted that their budget request to Congress is not commensurate with the allocation in the CRP, stating that their contributions are viewed domestically as voluntary, even though they are the Fund's biggest contributor. Azerbaijan noted that their allocation in the CRP is higher than previous years and is too high for her country, and called for this to be reviewed.

Canada noted the challenging negotiations in the contact group, recalled the trust and strong willingness to compromise demonstrated by the Article 5 countries, and noted that the discussions as a whole revealed a commitment to the Protocol and the Kigali Amendment. Bahrain thanked the contact group for the collective efforts and consensus reached in discussions on the level of replenishment.

Reiterating his country's strong commitment to the Montreal Protocol and its willingness to contribute to the MLF to ensure Article 5 countries meet their obligations under the Protocol, Belarus again requested the addition of an asterisk and a footnote noting that the difference between the country's budgetary allocation of US\$77,000 and the allocation in the CRP of US\$141,167 will be a voluntary contribution to avoid non-compliance. Co-Chair Sylla said that this would be noted in the meeting report. Belarus stressed that the decision could not be forwarded to the HLS until his request for a footnote was granted, suggesting the footnote be added and placed in square brackets. Supporting Belarus, Azerbaijan called for the decision to be reviewed, and said that as she would need to discuss this allocation domestically, the issue should remain open. Co-Chair Sylla acknowledged ongoing informal consultations in the room, but noted that if anything was to be added to the CRP it would necessitate taking it back to the contact group. Belarus called a point of order and queried the procedure being followed. Co-Chair Sylla then suspended plenary to allow for informal consultations on the issue.

When plenary resumed, Co-Chair Sylla proposed, and delegates agreed, to add an asterisk to Belarus and Azerbaijan's contribution lines and include a footnote stating that "to avoid non-compliance to the decision of the parties, for Belarus the difference in the amount US\$77,000 per year, and that indicated in the table in the amount of US\$141,167 to the MLF will be considered a voluntary contribution." Delegates then forwarded the decision to the HLS.

During the HLS discussion of the CRP on Saturday morning, Belarus reiterated his position be reflected in the meeting report and said that the bracketed text could then be removed if parties referred to the remaining amount as a voluntary contribution, underscoring his country's desire to contribute and stay in compliance. The HLS approved the decision.

Final Outcome: In the final decision on the Replenishment of the MLF for the triennium 2018-2020 (UNEP/OzL.Pro.29/CRP.14*), the COP, *inter alia*:

- adopts a budget for the MLF for the triennium 2018-2020 of US\$540,000,000 on the understanding that US\$34,000,000 of that budget will be provided from anticipated contributions due to the MLF and other sources for the triennium 2015-2017,

and that US\$6,000,000 will be provided from interest accruing to the Fund during the triennium 2018-2020. The parties note that outstanding contributions from parties with economies in transition in the period 2015-2017 amount to US\$10,452,429;

- adopts the scale of contributions for the MLF based on a replenishment of US\$166,666,667 for 2018, US\$166,666,667 for 2019 and US\$166,666,666 for 2020; and
- calls for the ExCom to take action to ensure, to the extent possible, that non-Article 5 parties should make timely payments in accordance with paragraph 7 of decision XI/6 (fixed-exchange-rate mechanism for the replenishment of the MLF).

The annex contains a table listing contributions by parties to the tenth replenishment of the MLF.

Extension of the Fixed-Exchange-Rate Mechanism for 2018-2020: On Monday, Brazil underlined the mechanism is a key element of the MLF's success. Australia highlighted the mechanism allows donors to plan their budget allocations in advance, saying the present decrease in contributions was a "swings and roundabout scenario," given that previously it has resulted in additional funds for the MLF. Co-Chair Sylla proposed, and delegates agreed to forward this issue to the MLF Replenishment Contact Group.

Final Outcome: In the final decision (UNEP/OzL.Pro.29/CRP.15), the COP agrees, *inter alia*:

- to direct the Treasurer to extend the fixed-exchange-rate mechanism to the period 2018-2020;
- that parties choosing to pay their contributions to the MLF in national currencies will calculate their contributions based on the average UN exchange rate for the six-month period commencing 1 January 2017;
- that parties not choosing to pay in national currencies pursuant to the fixed-exchange-rate mechanism will continue to pay in US dollars;
- that no party should change the currency selected for its contribution in the course of the triennium 2018-2020; and
- that only parties with inflation rate fluctuations of less than 10% for the preceding triennium, pursuant to published figures of the International Monetary Fund, will be eligible to use the fixed-exchange-rate mechanism.

VIENNA CONVENTION: Report of the tenth meeting of the Ozone Research Managers (ORM) of the Parties to the Vienna Convention: On Tuesday, ORM Co-Chair Kenneth Jucks (US) presented the main recommendations from its tenth meeting (UNEP/OzL.Conv.11/5), *inter alia*, underscoring the need for: researching the interlinkages between ozone and climate change; and ensuring future satellite systems continue collecting ozone-relevant data. The EU reiterated its commitment to provide support for long-term, geographically comprehensive ozone research. Benin queried how to incorporate science into national-level decision making.

Australia, speaking as a Vienna Convention COP 10 Bureau member, introduced a draft decision (UNEP/OzL.Conv.11/CRP.1) which, among others, encourages parties to adopt and implement the ORM recommendations. Canada and the US supported the CRP, with the US noting it would provide textual amendments.

On Wednesday, Australia presented the revised decision; saying it includes textual changes from "Article 5 countries" to "developing countries" in line with Vienna Convention language. The EU requested reference to "meteorological agencies and other relevant organizations" to reflect broader engagement of relevant organizations.

The CRP was forwarded to the HLS with these changes.

Final Outcome: In its decision (UNEP/OzL.Conv.11/CRP.1), the COP:

- takes note of tenth ORM report, published in 2017;
- encourages parties to adopt and implement, as appropriate, the ORM recommendations under the topics of research, systematic observations, data archiving and stewardship and capacity building; and
- encourages national ozone focal points to improve communication with the meteorological agencies in their countries on monitoring, research, and scientific activities.

The decision also encourages parties to accord priority to: research and systematic observation activities on processes influencing the evolution of the ozone layer and its links to climate; and capacity-building activities in Article 5 countries and countries with economies in transition.

Status of the General Trust Fund (VCTF) for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention: On Tuesday, A.R. Ravishankara, VCTF Advisory Committee Chair, gave a brief overview of the VCTF, noting that the VCTF needs to go beyond voluntary contributions by engaging non-traditional funding sources.

Sophia Mylona, Ozone Secretariat: presented on the status of the VCTF; stated that since its inception in 2003, the Fund has received US\$355,381 from 11 countries as well as in-kind contributions; and highlighted activities carried out, such as inter-comparison and relocation of Dobson instruments. She noted Germany has pledged €30,000 for VCTF-related activities.

Stressing the need for "quality data and homogenous data sets," Geir Braathen, World Meteorological Organization, presented Dobson training sessions supported by the Trust Fund since COP 10. He said 10 instruments were calibrated and 34 participants trained, noting this could be extended with additional resources.

Australia, speaking as a Vienna Convention COP 10 Bureau member, presented a CRP on financing the VCTF (UNEP/OzL.Conv.11/CRP.2), requesting, among others: the UNEP Executive Director extend the VCTF to 2026; and the Secretariat invite parties to make contributions.

The EU, US, and Kenya expressed support for the CRP. Co-Chair Newberg encouraged interested parties to consult informally with Vienna Convention Bureau members and submit a revised decision.

On Wednesday, Australia presented a revised draft (UNEP/OzL.Conv.11/CRP.2/Rev.1), highlighting the addition of a paragraph on mobilizing financial resources and in-kind contributions. Norway announced a NOK130,000 contribution to the Fund.

The CRP was forwarded to the HLS.

Final Outcome: In its decision (UNEP/OzL.Conv.11/CRP.2/Rev.1), the COP:

- requests the UNEP Executive Director to extend the life of the VCTF until 31 December 2026;
- requests the VCTF Advisory Committee, with the assistance of the World Meteorological Organization and the Ozone Secretariat, to implement its long-term strategy and short-term plan of action for the VCTF, exploring the use of new and cost-effective instrumentation to replace ageing instruments, fostering stronger relationships with scientific institutions and related global networks to build capacity and knowledge, and developing a strategic plan for mobilizing public and financial resources and in-kind contributions for the Fund; and

- requests the Ozone Secretariat to continue to invite parties and relevant organizations to make financial and/or in-kind contributions towards well-defined and well-budgeted project proposals developed under the VCTF, and to report to COP 12 on the operation of, contributions to, and expenditure from the VCTF and the activities funded since its inception, as well as on the activities of the Advisory Committee.

KIGALI AMENDMENT TO PHASE DOWN

HYDROFLUOROCARBONS: Status of Ratification: On Monday, OEWG 39 Co-Chair Newberg opened this agenda item (UNEP/OzL.Conv.11/INF/1-UNEP/OzL.Pro.29/INF/4). She recalled parties have traditionally adopted decisions to place amendments' ratification status on record, and pointed to draft decisions prepared by the Secretariat (UNEP/OzL.Conv.11/3-UNEP/OzL.Pro.29/3, draft decisions XI/[AAA] and XXIX/[AAA]). In the ensuing discussion, the US proposed wording to urge parties that have not yet done so, to consider ratifying the Kigali Amendment. Australia suggested including further reference to approving or acceding to the amendment. The EU and Canada emphasized adopting such a decision is an important signal. Co-Chair Newberg requested parties consult informally and submit a revised draft decision.

On Wednesday, the US reported that these consultations had not yet occurred. The EU expressed interest in joining the discussion. Co-Chair Newberg requested an update as soon as possible.

On Friday afternoon the US proposed new language reflecting agreement reached in informal consultations. Co-Chair Newberg asked for the text to be provided to the Secretariat with a view to forward it to the HLS for consideration and adoption.

Final Outcome: In its decision, which was presented orally, the MOP:

- notes that, as of 24 November 2017, 22 parties have ratified, approved, or accepted the Kigali Amendment to the Montreal Protocol; and
- urges all parties that have not yet done so, to consider ratifying, approving, or acceding to the Amendment.

Data Reporting under Article 7 of the Montreal Protocol, Including Related Issues and Destruction Technologies for Substances in Annex F to the Montreal Protocol: On Monday, Co-Chair Sylla opened this agenda item (UNEP/OzL.Pro.29/7), and pointed to a draft decision on issues related to destruction technologies submitted by Australia, Canada, the EU, and US. He requested the OEWG 39 Contact Group Co-Chairs Martin Sirois (Canada) and Margaret Aanyu (Uganda) reconvene the group to continue deliberations on data reporting.

The Contact Group on Data Issues and Destruction Technologies met throughout the week. On proposed revisions to the Article 7 data reporting forms and related guidelines, discussions mainly addressed the reporting of HFC-23 emissions. Disagreement arose on whether or not to include columns for the voluntary reporting of information. One party suggested these be moved to an annex to make the distinction between mandatory and voluntary reporting clearer. Parties also touched on HFC-23 reporting in the production sector.

On timelines for reporting of baseline data, the Contact Group discussed options for baseline calculations, the procedure for data correction, and who should be informed in the process. Regarding the process for approving destruction technologies for HFCs, the Contact Group welcomed the idea of requesting the TEAP to assess the applicability of HCFC and CFC destruction technologies to HFCs. Disagreement arose on the date by which

the TEAP should present its assessment. Some parties favored an early deadline in order to start establishing national regulatory frameworks, while others cautioned the TEAP needed sufficient time to, among other things, seek inputs from industry on possible new destruction technologies.

On provisional approval of HFC destruction technologies, some parties highlighted HFCs are already often destroyed together with HCFCs and CFCs. Others cautioned against the MOP approving, even on a provisional or interim basis, technologies not tested for this specific purpose.

During the Friday evening plenary session, Contact Group Co-Chair Sirois outlined the provisions of the revised CRP on destruction technologies. He reported progress on the other issues, *inter alia*, pertaining to: the identification of an error in the GWP values of the common isomers of HFC-123 and HFC-124, and the request to delete references to Annex F in the forms and instructions for reporting trade in controlled substances with non-parties. He highlighted no agreement had been found on the issues of timelines for baseline data reporting, data forms, and trade with non-parties, requesting these be included in the OEWG 40 agenda.

Plenary forwarded the CRP on destruction technologies to the HLS. Co-Chair Newberg said progress on the remaining issues will be captured in the Secretariat's report and included in the list of issues for discussion by and information for the attention of OEWG 40.

Final Outcome: In its decision (UNEP/OzL.Pro.29/CRP.12), the MOP requests the TEAP to report by 31 March 2018, and if necessary to submit a supplemental report to OEWG 40, on an assessment of the destruction technologies as specified in the annex to decision XXIII/12 with a view to confirming their applicability to HFCs; and a review of any other technology for possible inclusion in the list of approved destruction technologies in relation to controlled substances. The decision further invites parties to submit relevant information to the Secretariat by 1 February 2018.

ISSUES RELATED TO EXEMPTIONS FROM ARTICLE 2 OF THE MONTREAL PROTOCOL: Essential Use Nominations for 2018: On Monday, Co-Chair Sylla noted China's draft decision on essential-use exemptions for the use of CTC to test oil, grease, and petroleum hydrocarbons in water (UNEP/OzL.Conv.11/3-UNEP/OzL.Pro.29/3). The EU, with Canada and the US, requested further consultations with China.

On Wednesday afternoon, China noted a revised draft was available, specifying the decision indicates that China will cease applying for this exemption beginning in 2019.

On Friday, China reported agreement had been reached. Delegates agreed to forward the CRP to the HLS, where it was adopted on Saturday morning without amendment.

Final Outcome: In its decision (UNEP/OzL.Pro.29/CRP.9), the MOP authorizes the essential use exemption for the proposed 65 metric tonnes of CTC for 2018 and:

- authorizes the level of consumption for China for 2018 necessary to satisfy essential uses of CTC for testing oil, grease, and petroleum hydrocarbons in water; and
- welcomes China's undertaking to cease the use of CTC for the testing of oil, grease, and petroleum hydrocarbons in water from 2019 onwards.

Critical Use Nominations (CUNs) for 2018 and 2019: On Monday, Methyl Bromide TOC (MBTOC) Co-Chair Mohammed Besri reported trends in CUN and critical-use exemptions (CUEs), highlighting a downward trend. MBTOC Co-Chair Ian Porter

provided an overview of the MBTOC's assessment of CUNs from Argentina, Australia, Canada, China, and South Africa. He noted China's intention to cease applying for CUNs in 2018, MBTOC's concern about methyl bromide uses for which there is no apparent reporting, and MBTOC's concern that continuous nominations of methyl bromide could become a barrier to alternatives.

On CUEs for strawberry runners, Australia expressed its intention to prepare a CRP. Canada clarified its nomination, expressing concern over the safety of Prince Edward Island's groundwater reserves. Noting their phase-out of methyl bromide in 2010, the EU underscored that alternatives exist.

Co-Chair Sylla encouraged parties to continue discussions on the meeting's margins.

On Friday morning, Australia said their CRP on CUEs for methyl bromide for 2018 and 2019 was posted. The EU and China endorsed the CRP, which was forwarded to the HLS.

On Saturday morning, the HLS approved the decision.

Final Outcome: In its decision (UNEP/OzL.Pro.29/CRP.10), the MOP permits, for the agreed critical-use categories for 2018 and 2019 for each party, and subject to relevant conditions, the levels of production and consumption for 2018 and 2019 that are necessary to satisfy critical uses.

The MOP further decides, among others, that:

- parties endeavor to license, permit, authorize or allocate quantities of methyl bromide for critical uses;
- each party with an agreed CUE shall renew its commitment to ensuring relevant criteria are applied in licensing, permitting, or authorizing critical uses of methyl bromide, with each party to report on implementation of the provision to the Secretariat by 1 February for the years the decision applies; and
- parties submitting future CUN requests for methyl bromide shall demonstrate that research programmes are in place to develop and deploy alternatives and substitutes.

The decision's annex contains two tables. Table A lists: agreed critical-use categories for Australia (strawberry runners) for 2019; and thereafter critical-use categories for Argentina (strawberry fruit and tomatoes), Canada (strawberry runners), China (ginger), and South Africa (mills and houses) for 2018. Table B sets out the corresponding permitted levels for production and consumption.

USE OF CONTROLLED SUBSTANCES AS PROCESS AGENTS: On Monday, Co-Chair Newberg presented the draft decision forwarded by OEWG 39 (UNEP/OzL.Conv.11/3-UNEP/OzL.Pro.29/3). The US lauded progress in reducing ODS as process agents. Mexico encouraged parties to develop alternatives. Interested parties were encouraged to consult on the decision on the margins of the meeting.

On Wednesday morning, the EU reported on consultations with the US, Mexico, and China, stating that these discussions are in the final stages. In the afternoon, the EU introduced UNEP/OzL.Pro.29/CRP.7, noting it is the product of intersessional work as well as bilateral discussions at this meeting. He highlighted that the proposal, *inter alia*: seeks to update Table A of decision X/14 (the list of uses of controlled substances as process agents); and requests the TEAP report to OEWG 41 on the industrial application of any alternative technologies employed by parties in the processes listed in Table A. Delegates agreed to forward the CRP to the HLS. On Saturday morning, the HLS adopted the decision.

Final Outcome: In its decision (UNEP/OzL.Pro.29/CRP.7), the MOP updates Table A of decision X/14 on process agents as set out in the annex to the present decision. It further urges parties to update their information on the use of controlled substances

as process agents and to provide the Secretariat, by 31 December 2017, with information on the implementation and development of emissions reduction techniques. The TEAP is requested to report to OEWG 41 on the industrial application of alternative technologies employed by parties.

KEY MESSAGES FROM THE TEAP 2017 REPORT:

Co-Chair Newberg introduced this item on Monday. The EU said a CRP is being drafted, which, *inter alia*, calls for a greater understanding of the issue of halons and halon stocks. The US and Canada urged continued development of the CRP. Australia suggested reiterating previous decisions to encourage parties to refrain from destroying recovered or recycled halons.

On other items from the TEAP 2017 report, the EU said it had noted literature about the potential threat 1,2-dichloroethane poses to the ozone layer.

On Wednesday, the EU reported they had reached out to parties and the halons TOC (HTOC) on the issue of recovered, recycled or reclaimed halons, and would submit the relevant information to the Secretariat.

In the afternoon, the EU introduced a draft decision on the future availability of halons and their alternatives (UNEP/OzL.Pro.29/CRP.5), recognizing the US as the co-sponsor. He noted that the CRP: requests the TEAP continue liaising with International Civil Aviation Organization (ICAO) on developing and implementing alternatives to halons; and invites parties to reassess national import and export restrictions with a view to facilitating the import and export of recovered, recycled or reclaimed halons. He noted discussions are ongoing. Co-Chair Newberg requested a report as soon as possible.

Cameroon asked that the CRP consider additional halons, such as halon 1211. OEWG 39 Co-Chair Newberg asked the proponents to address this request and provide an update at a later stage. The CRP was forwarded to the HLS, where it was adopted on Saturday morning.

Final Outcome: In its decision (UNEP/OzL.Pro.29/CRP.5), the MOP requests the TEAP, through its HTOC to:

- continue liaising with ICAO on developing and implementing halon alternatives, and their rate of adoption by civil aviation, and to report thereon in its 2018 progress report;
- explore the possibility of forming a joint working group with ICAO to develop and carry out a study determining the current and projected future quantities of halons installed in civil aviation fire protection systems, the associated uses and releases of halons from those systems and any potential courses of action that civil aviation could take to reduce those uses and releases; and
- submit a report on the joint working group's work, if established, before MOP 30 and the fortieth session of the ICAO Assembly for consideration and potential further action.

The MOP also:

- invites parties to reassess any national import and export restrictions other than licensing requirements with a view to facilitating the import and export of recovered, recycled, or reclaimed halons and managing stocks of such halons with the aim of enabling all parties to meet remaining needs in accordance with national regulations; and
- encourages parties to refrain from destroying uncontaminated recovered, recycled, or reclaimed halons before they have considered their national and the global long-term future needs for halons, and to consider retaining uncontaminated

recovered, recycled, or reclaimed halons for anticipated future needs in a manner that employs best practices for storage and maintenance, in order to minimize emissions.

PHASE-OUT OF HCFCs: On Monday, Co-Chair Newberg introduced this item, noting a draft decision has been forwarded by OEWG 39 (UNEP/OzL.Conv.11/3-UNEP/OzL.Pro.29/3, draft decision XXIX/[C]). The US requested discussions continue on the meeting's margins.

On Wednesday morning, the US reported on the ongoing consultations, expressing hope that a revised CRP jointly prepared with Australia, Canada, and Japan would be submitted soon. In the afternoon, Co-Chair Newberg noted the revised CRP had been submitted. The CRP was forwarded to the HLS where it was adopted on Saturday morning.

Final Outcome: In its decision (UNEP/OzL.Pro.29/CRP.8), the MOP requests the TEAP, in relation to Annex C, Group I substances to assess requirements for the period 2020-2030 for non-Article 5 parties and to provide information, by 15 March 2018, on: areas and volumes of possible needs in fire suppression sectors, solvent applications, and other niche uses; and existing or emerging applications and processes for alternatives related to these applications and the possibility of meeting identified needs through the use of recycled or reclaimed HCFCs. It further invites parties and other interested entities to provide relevant information to the Secretariat by 15 January 2018.

ENERGY EFFICIENCY: On Monday afternoon, Co-Chair Sylla introduced this item (UNEP/OzL.Conv.11/3-UNEP/OzL.Pro.29/3), noting two issues to be discussed: the TEAP Decision XXVIII/3 Working Group Report on Energy Efficiency; and issues related to financial and technical support on energy efficiency for Article 5 parties, referred to in a draft decision (XXIX/[E]) submitted by India, Bahrain, Kuwait, Lebanon, Saudi Arabia, and the African Group.

Roberto Peixoto and Ashley Woodcock, TEAP Energy Efficiency Working Group Co-Chairs, presented the TEAP report, stating key messages include: increased energy efficiency is an important side benefit of the Protocol; demand for RACHP is increasing rapidly, especially in Article 5 countries; and domestic transitions to low-GWP refrigerants could include parallel efforts to improve energy efficiency.

In the ensuing discussion, parties qualified the report as "a good first step" but many lamented its broad focus. Recalling previous requests for a workshop on energy efficiency, Saudi Arabia, supported by Mexico and the EU, urged parties to convene it at OEWG 40. Federated States of Micronesia (FSM), supported by Kuwait, Morocco, Mauritius, and Mexico, suggested establishing a task force on energy efficiency, with FSM indicating it would submit a CRP. The US and Canada urged parties to articulate priorities for further work to provide clear guidance to the TEAP. Nigeria queried the role of extended producer responsibility to support energy efficiency. The EU suggested investigating, among other issues, green public procurement, and maintenance and leakage. The Philippines said any advocacy for energy efficiency should address low-GWP alternatives. Mexico called for investigating technical and financial needs for adopting low-GWP HFC alternatives.

The TEAP responded, saying, *inter alia*: this report was a first step and is general in nature; detailed scenarios are lacking, but could be explored if parties requested; and producers want to improve energy efficiency. The TEAP underscored it is up to parties to negotiate policy, but they can provide technical support.

On Tuesday morning, Co-Chair Sylla invited parties to continue discussions on this item. India highlighted the importance of considering opportunities related to maintaining and enhancing the energy efficiency of low- or zero-GWP equipment. Argentina queried if funding for energy efficiency improvements will be available. The US stressed there is no compliance obligation on energy efficiency and thus no funding requirement. He further called for: considering energy efficiency in installations and maintenance in LVCs; examining historic incidental energy efficiency benefits of MLF-facilitated technology upgrades; and canvassing institutions working on energy efficiency.

Kuwait stressed energy efficiency is part of the bigger picture of global environmental protection, and a compliance issue under the Montreal Protocol. Canada said financial and technical support for energy efficiency goes beyond the scope of Decision XXVIII/2 (decision related to the amendment on phasing down HFCs). India highlighted this draft decision deals with both financial and energy efficiency issues. Burkina Faso supported holding an energy efficiency workshop, and called for the MOP to develop a common understanding on energy efficiency.

Delegates established a Contact Group on Energy Efficiency, co-chaired by Patrick McInerney (Australia) and Leslie Smith (Grenada).

On Tuesday afternoon in plenary, FSM introduced a CRP (UNEP/OzL.Pro.29/CRP.4), prepared with Morocco, which requests, *inter alia*, the TEAP form a task force with relevant experts to investigate energy efficiency in the context of the HFC phase-down.

Canada and the EU, opposed by Saudi Arabia, suggested addressing both draft decisions, as a single item in the Energy Efficiency Contact Group, as some points overlap. Following discussion, Saudi Arabia and FSM expressed flexibility to address both draft decisions in a single contact group, underscoring they must be addressed as separate items.

The Contact Group met throughout the week to discuss the two draft decisions. Parties suggested recognizing the two draft decisions were separate, but linked. They perceived the first draft decision, submitted by India and others, as addressing the "what" the TEAP should do, and the second draft decision, submitted by FSM and Morocco, as suggesting the "how" to do it. Taking this approach, they discussed the first draft decision at length before reaching agreement.

On the first draft decision addressed in the Contact Group, delegates discussed, *inter alia*: discrepancies on how detailed the TEAP study should be; that energy efficiency discussions should be limited to the scope of the Kigali Amendment; how to specify the environmental benefits of energy efficiency, for example by quantifying CO₂ avoided; definition of criteria, namely on technical and financial aspects; the need to reference high ambient temperature (HAT) countries' conditions; the sequencing of the TEAP study and energy efficiency workshop, with parties suggesting the TEAP prepare a final report for consideration of OEWG 40, and thereafter an updated final report to be submitted to MOP 30 in 2018. Parties also cautioned against linking the discussion too closely to other bodies that deal with climate change. They agreed to hold an energy efficiency workshop at OEWG 40.

During the Friday evening plenary, Contact Group Co-Chair McInerney reported that parties had reached agreement on the draft decision. Reminding parties that they agreed to address the two draft decisions separately, Saudi Arabia and India urged

forwarding the agreed text on the first CRP to the HLS. The US pointed out that while the text was agreed to, it had changed significantly since the initial version, suggesting a title change of the decision to, “Issues related to Energy Efficiency while Phasing Down HFCs.” Cameroon and others expressed support for the title. The draft decision (UNEP/OzL.Pro.29/CRP.13) was forwarded to the HLS, where it was adopted on Saturday morning.

The second draft decision, which sought to establish a TEAP task force on energy efficiency, was addressed by the Contact Group on Friday evening, after a brief introduction on Wednesday. They discussed the procedure for how the TEAP should request additional expertise, noting that unlike requests for additional expertise on methyl bromide, the Montreal Protocol does not have a compliance requirement on energy efficiency. Some underscored the need for the TEAP to ensure access to expertise when conducting such a “significant” study on energy efficiency. On Friday evening, the Contact Group agreed to suspend the discussion until a further meeting, following the TEAP report and the energy efficiency workshop at OEWG 40.

Final Outcome: In its decision (UNEP/OzL.Pro.29/CRP.13), the MOP:

- requests the TEAP in relation to maintaining and/or enhancing energy efficiency in the RACHP sectors, including in HAT conditions, while phasing down HFCs under the Kigali Amendment, to assess, *inter alia*, technology options and requirements, capacity building, and servicing sector requirements in the RACHP sector, and related costs;
- requests the TEAP to provide an overview of activities and funding provided by other relevant institutions, as well as definitions, criteria and methodologies, in addressing energy efficiency in the RACHP sectors to maintain or enhance energy efficiency while phasing down HFCs under the Kigali Amendment, as well as those related to low- and zero-GWP HFC alternatives including different financing modalities;
- requests the TEAP to prepare a final report for consideration at OEWG 40, and thereafter an updated report for MOP 30, taking into consideration the outcome of the energy efficiency workshop; and
- requests the Secretariat to organize a workshop on energy efficiency opportunities while phasing-down HFCs, to be held at OEWG 40.

SAFETY STANDARDS RELEVANT TO LOW-GWP

ALTERNATIVES: On Tuesday, Co-Chair Newberg introduced this issue. Describing the CRP (UNEP/OzL.Pro.29/CRP.3) prepared jointly with China, the EU noted it requests, among others, the TEAP to prepare a tabular overview of RACHP standards, and liaise with other organizations to update this overview. China said a key component of the Kigali Amendment is safety standards for low-GWP alternatives. Saudi Arabia expressed concern that the CRP requests the TEAP to lower safety standards, and stated the proposals detract from the Kigali Amendment. Australia stated it is not the TEAP’s role to set safety standards.

The Philippines, Mexico, Mauritius, Cameroon, Malaysia, and Comoros called for capacity building and technician training. Nigeria called for financial support for Article 5 countries. The US recommended parties be “mindful” of other bodies leading on safety-standard setting.

The EU clarified the CRP, stating: it aims to maintain or improve standards; neither the TEAP nor the Montreal Protocol set standards, but rather informs parties on relevant safety standards; and national ozone units should address capacity building.

Co-Chair Newberg encouraged parties to discuss informally. Delegates met in an informal group from Wednesday to Friday afternoon, discussing, among others, text requesting “the Secretariat, in conjunction with the TEAP,” to provide a tabular overview of the safety standards relevant to the safe use of low-GWP alternatives in RACHP equipment. Many welcomed this request, with one calling for including a detailed list of the content required, for clarity. One other stressed the need to align this text with Decision XXVIII/4, which referenced “low-GWP flammable refrigerants,” not RACHP equipment. He further called for the TEAP to work on issues of liability, which are of greater concern to consumer countries.

On Friday afternoon in plenary, the EU reported that the group had reached agreement on the CRP. The US requested more time to consider the text. When plenary resumed on Friday night, the EU made three editorial amendments to the text. Delegates then agreed to forward the CRP, as orally amended, to the HLS.

On Saturday morning, the HLS approved the decision.

Final Outcome: In the final decision (UNEP/OzL.Pro.29/CRP.3/Rev.2), the MOP decides to, *inter alia*, request the Secretariat to hold regular consultations with relevant standardization organizations with a view to provide, with regard to standards for flammable low-GWP refrigerants, a tabular overview of relevant safety standards, drawing on the 2017 Decision XXVIII/4 (Establishment of regular consultations on safety standards) Task Force report and the outcome of the consultations.

The overview shall provide concise information on the: scope (i.e. activities, appliances or products covered); content (i.e. safety relevant technical aspects addressed); responsible standardization organization and its subsidiary body in charge of the standard, including information on content and review process; and status of review. The COP also decides to request the Ozone Secretariat to make the information accessible on its website, and ensure an update of the overview at least prior to each MOP, concluding with MOP 34, when parties should consider whether to renew the request to the Secretariat.

CONSIDERATION OF HFCs NOT LISTED IN ANNEX F TO THE MONTREAL PROTOCOL: On Tuesday, Co-Chair Newberg introduced this item. Switzerland presented the CRP prepared with Norway (UNEP/OzL.Pro.29/CRP.1), highlighting the aim is to provide up-to-date information on HFCs not controlled by the Protocol, and to encourage parties to stimulate the development of low-GWP alternatives. Saudi Arabia cautioned against “reopening the Kigali Amendment.” The US, supported by Burkina Faso, welcomed periodic information, with the US cautioning against including fluorinated substances.

Australia and Senegal preferred a simple information-focused decision. Mauritius and Gabon welcomed the precautionary approach, noting that requesting information from the TEAP is in line with the Kigali Amendment. The EU supported information on emerging substances, saying the TEAP should look into alternatives as new high-GWP substances become commercially viable. Saudi Arabia opposed burdening the TEAP with tasks for which they have neither time nor capacity.

Switzerland, on why such a decision is necessary, noted three substances identified by the Intergovernmental Panel on Climate Change (IPCC), which are not currently commercially relevant, stressing that industries should be sensitized about these high-GWP substances. He requested an informal meeting to further discuss this issue.

Informal consultations began on Wednesday, co-convened by Norway and Switzerland. Some countries voiced concern that a proposed request to the Assessment Panels to inform the MOP on products and technologies that could be used as alternatives to HFCs was too prescriptive. They were also concerned that any language directed to parties to promote technologies that are technically feasible and safe to use and do not depend on the use of HFCs may prejudice a request to the Assessment Panel for information on the consumption and production of HFCs not listed in Annex F of the Protocol.

The informal consultation agreed to only request the Protocol's Assessment Panels to provide information on HFC consumption and production not listed in Annex F of the Protocol, with a GWP of no less than the lowest GWP of the HFCs listed in Annex F.

In plenary on Friday, Switzerland and Norway reported that the consultations had been fruitful, and introduced the CRP. Delegates agreed to forward it to the HLS. On Friday night, the HLS adopted the CRP.

Final Outcome: In the final decision (UNEP/OzL.Pro.29/CRP.1/Rev.1), the MOP, acknowledging that the substances listed in Annex F to the Protocol include those HFCs that are at present commercially in use, and noting that there are other HFCs not listed in Annex F to the Protocol, which at present have minimal or no known production or consumption, which have GWP no less than the lowest GWP of the HFCs listed in Annex F, requests the Protocol Assessment Panels to provide, in their quadrennial reports to be presented to the MOP in 2023, and every four years thereafter, information on the consumption and production of HFCs not listed in Annex F, which have GWP no less than the lowest GWP of the HFCs listed in Annex F, noting that this is for information purposes only, given that the substances referred to in this paragraph are not included in Annex F.

OTHER MATTERS: Issue Raised by Saudi Arabia on Linkages between the HCFC Phase-Out and HFC Phase-Down: On Tuesday, Saudi Arabia, supported by Kuwait and Bahrain, urged parties to consider HAT countries' specific challenges in simultaneously phasing out HCFCs and phasing down HFCs, asking for flexibility in the phase-out schedule, and clear guidance on which low-GWP alternatives should be considered for long-term policy planning. Canada said a compliance deferral mechanism already exists for HAT countries, highlighting that the Protocol allows for parties' flexibility in selecting alternatives.

The US highlighted the need to define the technology path at a global level, and to better understand the need for a temporary compliance deferral on the HCFC compliance schedule for HAT countries.

Saudi Arabia, supported by Iraq, highlighted that since HAT countries are net importers of air conditioning technologies, they need a signal from producers on low-GWP alternatives' availability; and stressed that to be in compliance, the affected industries will need to begin to transition away from HFCs.

Australia, the EU, and Argentina supported further discussions to find a pragmatic way forward. Kuwait stressed the request was for a general path forward in the air conditioning sector. Mauritius

highlighted propane alternatives for air conditioning, but called for assistance in identifying producers and for capacity building for technicians.

Maldives drew attention to difficulties in HCFC phase-out in the fisheries industry, noting that with no feasible alternatives, affected countries will be in non-compliance.

Final Outcome: Co-Chair Newberg said this discussion will be noted in the meeting report and discussed at the next OEWG.

Effects of Recent Hurricanes on Caribbean Islands: On Tuesday, Grenada noted a CRP is being prepared to request MLF support due to hurricane damage in 2017 negatively impacting Montreal Protocol implementation. Mauritius and Samoa noted extreme weather affecting their respective countries. The US supported further work on the CRP.

Saudi Arabia underscored the need to draw a "clear line" on what should and should not be addressed under the Protocol. Co-Chair Newberg clarified that Grenada's CRP will address how the storms influence implementation of Protocol issues.

On Wednesday, Grenada introduced the proposal (UNEP/OzL.Pro.29/CRP.6) on special considerations for Caribbean islands affected by hurricanes, resulting in damage to monitoring infrastructure. He said key elements include: calling on parties to control ODS exports to affected countries; requesting the ExCom, when considering the countries' project proposals over the coming year, to take into account the special circumstances that may affect their compliance obligations; and a request to the Implementation Committee (ImpCom) to consider the difficulties faced by those countries in the event of non-compliance.

Guyana and Haiti endorsed the proposal. The US, EU, and Canada expressed interest in working on this CRP, with the EU and Canada noting precedents from similar cases. Nigeria proposed a fact-finding mission to assess the situation in the affected countries and determine the level of support required.

Co-Chair Newberg proposed further informal consultations on this CRP.

On Friday afternoon, Grenada reported that interested parties had agreed to the text in the CRP. Brazil endorsed the CRP. Delegates agreed to forward it to the HLS, where it was adopted on Saturday morning.

Final Outcome: In the final decision on the special considerations for the Caribbean islands affected by hurricanes (UNEP/OzL.Pro.29/CRP.6/Rev.1), the MOP, *inter alia*:

- encourages all parties to assist Antigua and Barbuda, the Bahamas, Cuba, Dominica, and the Dominican Republic by controlling the export of products, equipment, and technologies that rely on ODS through the control of trade;
- requests the implementing agencies to consider providing institutional strengthening, capacity building, data collection and monitoring support, and control of trade of controlled substances; and
- agrees that the ImpCom should take into consideration the difficulties faced by these countries as a result of the hurricanes experienced in 2017, in the event of cases of non-compliance by those countries.

NOMINATION AND APPOINTMENT OF CO-CHAIRS AND MEMBERS OF THE TEAP AND ITS TECHNICAL OPTIONS COMMITTEES: On Tuesday, OEWG Co-Chair Sylla introduced this item, noting many TEAP and TOC appointments expire in 2017. Australia nominated Ian Porter (MBTOC) and Helen Tope (Medical and Chemicals TOC). Brazil nominated Roberto Peixoto (Refrigeration TOC) and Carlos

Grandi (HTOC). The US nominated Helen Walter-Terrinoni (Foams TOC).

India, supported by Egypt, suggested TEAP members should have specific expertise, nominating Lambert Kuijpers who has been a “longstanding contributor” to the TEAP.

On Wednesday, Algeria, for the African Group, nominated Sidi Menad Si Ahmed for the TEAP. Co-Chair Sylla urged parties to submit their nominations to the Secretariat as soon as possible.

On Saturday morning, the US introduced the revised decision (UNEP/OzL.Pro.29/CRP.16), noting inclusion of text suggesting that all senior experts be nominated for one year pending further consideration in 2018, and that the Secretariat and the TEAP work together to establish the exact needs of the TEAP. She further requested this item be placed on OEWG 40’s agenda.

The CRP was forwarded to the HLS, where it was adopted on Saturday morning.

Final Outcome: In its decision (UNEP/OzL.Pro.29/CRP.16), the MOP:

- thanks Mohamed Besri (Morocco) and Ashley Woodcock (UK) for their long and outstanding efforts as Co-Chairs of the MBTOC and the Flexible and Rigid Foams TOC, respectively;
- endorses the appointments of the following as Co-Chairs for an additional term of four years: Ian Porter (Australia) and Marta Pizano (Colombia) for the MBTOC; Helen Tope (Australia) for the Medical and Chemical TOC; Roberto Peixoto (Brazil) for the RACHP TOC; Sergey Kopylov (Russian Federation) for the HTOC; Helen Walter-Terrinoni (US) for the Flexible and Rigid Foams TOC;
- endorses the appointments of the following as senior experts of the TEAP for a one year term: Sidi Menad Si Ahmed (Algeria), Shiqiu Zhang (China), Marco González (Costa Rica), and Mohamed Besri (Morocco);
- encourages parties to consult with other parties on potential nominations of senior experts and refer to the matrix of expertise needed prior to making their nominations; and
- requests the Secretariat to add to the OEWG 40 agenda consideration of senior expert nominations from parties.

CONSIDERATION OF THE MEMBERSHIP OF

MONTREAL PROTOCOL BODIES FOR 2018: On Tuesday, Co-Chair Sylla asked parties to consult regionally on their nominations for the Montreal Protocol bodies and submit their nominations to the Secretariat.

ImpCom Membership: In its decision (XXIX/[Q]), the MOP confirms the positions of the Congo, Georgia, Jordan, Paraguay and the UK as members of the Committee for one further year and to select Australia, Chile, Maldives, Poland, and South Africa as members of the Committee for a two-year period beginning on 1 January 2018.

It also notes the selection of Miruza Mohamed (Maldives) to serve as President and Lesley Dowling (Australia) to serve as Vice-President and Rapporteur of the Committee for one year beginning on 1 January 2018.

MLF ExCom Membership: In its decision (XXIX/[R]), the MOP: endorses the selection of Argentina, Benin, Dominican Republic, Grenada, India, Lebanon, and Nigeria as members of the ExCom representing Article 5 parties; and the selection of Belgium, Canada, France, Japan, Norway, Slovakia, and the US as members representing non-Article 5 parties for one year beginning 1 January 2018.

The MOP also notes the selection of Mazen Hussein (Lebanon) to serve as Chair and Philippe Chemouny (Canada) as Vice-Chair of the ExCom for one year beginning 1 January 2018.

OEWG Co-Chairs: In decision XXIX/[S], the MOP endorses the selection of Yaqoub Al-Matouq (Kuwait) and Cynthia Newberg (US) as Co-Chairs of OEWG 40.

COMPLIANCE AND REPORTING ISSUES CONSIDERED BY THE IMPLEMENTATION

COMMITTEE: On Tuesday, ImpCom Vice-President and Rapporteur Leonard Marindany Kirui (Kenya) presented the outcomes of the 58th and 59th meetings of the ImpCom (UNEP/OzL.Pro.29/5 and Add.1-UNEP/OzL.Pro/ImpCom/59/2 and Add.1, UNEP/OzL.Pro/ImpCom/58/4). He introduced a draft decision (UNEP/OzL.Pro.29/CRP.2) that, among others, addresses Kazakhstan’s case of non-compliance on HCFCs, and addresses the requests for revising baseline data from Fiji, the Philippines, and Pakistan.

The draft decision was forwarded to the HLS where it was adopted on Saturday morning.

Final Outcome: On the non-compliance of Kazakhstan in 2015 and 2016, in the decision contained in UNEP/OzL.Pro.29/CRP.2, the MOP:

- recalls decision XXVI/13, in which MOP 26 noted Kazakhstan was in non-compliance with the consumption control measures for HCFCs for 2011, 2012, and 2013 but also noted with appreciation Kazakhstan’s plan of action to ensure its prompt return to compliance with those measures by 2016;
- notes with concern that Kazakhstan has reported annual consumption of HCFCs, for 2015 of 12.1 ODP-tonnes and for 2016 of 5.0 ODP-tonnes, which is inconsistent with its commitment in decision XXVI/13 and with the Protocol’s requirement to limit consumption to no greater than 3.95 ODP-tonnes for each of those years, and that the party is therefore in non-compliance with the consumption control measures for the Protocol for 2015 and 2016;
- notes Kazakhstan’s submission of an explanation for that deviation along with a revised plan of action to return to compliance;
- continues to closely monitor Kazakhstan’s progress in implementing its action plan and the HCFC phase-out, and that, to the degree that the party is working towards and meeting the specific Protocol control measures, it should continue to be treated in the same manner as a party in good standing and should continue to receive international assistance to enable it to meet its commitments; and
- cautions Kazakhstan that, should it fail to return to compliance, the MOP will consider measures, which allow for the suspension of specific rights and privileges under the Protocol, including the possibility of ensuring that the HCFC supply that is the subject of non-compliance is ceased so exporting parties are not contributing to a continuing situation of non-compliance.

In another decision in UNEP/OzL.Pro.29/CRP.2, the MOP:

- notes Fiji has presented sufficient information to justify its request for revising its consumption data for HCFCs for 2009 and 2010, which are part of the baseline for Article 5 parties; and
- approves Fiji’s request to revise its HCFC consumption data as indicated in the table contained in the decision;
- notes that the change in baseline data confirmed that Fiji was in non-compliance with the control measures for 2013 and 2014, but as of 2015 had returned to compliance;
- notes no further action is needed in view of the return to compliance and the party’s affirmation that it has taken the new baseline into account for 2015 and 2016; and

- monitors progress by Fiji with regard to the HCFC phase-out, and that it should continue to be treated in the same manner as a party in good standing.

In another decision in UNEP/OzL.Pro.29/CRP.2, the MOP: notes Pakistan has presented sufficient information to justify its request for revision of its consumption data for HCFCs for 2009 and 2010, which are part of the baseline for Article 5 parties; and approves Pakistan's request to revise its HCFC consumption data as indicated in the decision's table.

In another decision in UNEP/OzL.Pro.29/CRP.2, the MOP: notes the Philippines has presented sufficient information to justify its request for revision of its consumption data for HCFCs for 2009 and 2010, which are part of the baseline for Article 5 parties; and approves the Philippines's request to revise its HCFC consumption data as indicated in the decision's table.

In another decision in UNEP/OzL.Pro.29/CRP.2, on the reporting of zero in Article 7 data reporting forms, the MOP:

- notes with appreciation that the majority of parties are complying with the request made in decision XXIV/14 to enter a number, including zero, rather than leaving the cell blank;
- notes, however, that some parties continue to submit forms containing blank cells, which requires additional work by the Secretariat to request clarification from the parties and results in delays in compiling information and assessing parties' compliance;
- urges parties, when submitting forms for reporting data in accordance with Article 7, to ensure that all cells in the forms are completed with a number, including zero, rather than leaving the cell blank; and
- requests the ImpCom to review the status of compliance by the parties at its sixty-first meeting.

DATES AND VENUES FOR THE VIENNA CONVENTION COP 12 AND MONTREAL PROTOCOL

MOP 30: During the Saturday morning plenary, the COP President took note of Ecuador's invitation to host MOP 30, Italy exploring the possibility of hosting MOP 31, and Senegal's offer to potentially host COP 12/MOP 32. Noting no objections, the President requested the Secretariat include the selections in decision language.

A BRIEF ANALYSIS OF COP 11/MOP 29

We are made wise not by the recollection of our past, but by the responsibility for our future. ~ George Bernard Shaw

RECOLLECTING THE PAST

Delegates arrived in Montreal in a celebratory mood. Not only was the Protocol commemorating its thirtieth anniversary, but the eleventh meeting of the Conference of the Parties to the Vienna Convention (COP 11) and the twenty-ninth Meeting of the Parties to the Montreal Protocol (MOP 29) opened with the news that 21 instruments of ratification had been deposited, thus guaranteeing the Kigali Amendment's entry into force on 1 January 2019. Nevertheless, delegates were not able to spend much time patting themselves on the back as a packed agenda was waiting to be tackled.

In order to pave the way for the Kigali Amendment's smooth implementation, delegates were expected to successfully conclude their negotiations on the Multilateral Fund's (MLF) replenishment for 2018-2020. They also had to address some pressing issues arising from the adoption of the Kigali Amendment, in particular, how best to consider energy efficiency.

This brief analysis will look at some of the outcomes and work undertaken at COP 11/MOP 29, and how these impact the efforts to start paving a smooth road from adoption of the Kigali Amendment to implementation on the ground.

DEALING WITH THE PRESENT

Delegates' most pressing task was to conclude the MLF replenishment negotiations successfully for the triennium 2018-2020. The MLF replenishment is crucial for Article 5 countries, as the fund finances activities to help meet their compliance obligations to phase out ozone depleting substances (ODS). This replenishment round was perhaps open to more contention and uncertainty—the former due to having to include a budget for HFC phase-down activities. The latter was a result of uncertainty surrounding certain delegations' financial and political situations, as well as constrained budgets globally. From the outset, many felt it was clear that the replenishment negotiations were going to be tough. In initial comments, the US called for "fair burden sharing" for MLF obligations. A number of other non-Article 5 countries echoed similar sentiments. Article 5 countries, however, countered this saying that if "fair burden sharing" included having Article 5 countries contribute, it goes against the spirit of the Protocol and the MLF and other solutions needed to be sought, perhaps including a smaller replenishment and an allowance that some countries may be in non-compliance with their obligations under the Protocol.

Negotiations initially took place in an open contact group, but it soon became apparent a smaller group would be needed to make tangible progress. When the negotiations broke into closed, small group discussions, initial progress nearly halted as the group "beat around the bush, instead of taking the challenge head on," as one delegate privy to the negotiations confided. Rumors surrounding the negotiations also seemed to indicate that instead of moving on from the past, parties were recollecting the politics and mistrust that had arisen during the negotiations of the Kigali Amendment.

Recalling past MOPs, one delegate was heard saying that many countries had been suspicious of the motivations that had driven the proposal to include HFCs under the Montreal Protocol. At the time the first proposals pursuing this objective were addressed, a number of Article 5 countries thought that some parties saw it as a way to address climate issues that were, in the eyes of some, not being adequately addressed under the UNFCCC and the Kyoto Protocol. As this delegate noted, aside from the motivations, financial concerns also contributed to building mistrust—Article 5 countries had harbored suspicions that they were "being pushed" into phasing down HFCs just after they had invested heavily in converting to HFCs as part of the HCFC phase-out. Non-Article 5 countries had, at the time, tried to allay those concerns by promising sufficient funding to support HFC phase-downs, either through the MLF or bilaterally. In some instances though, Article 5 countries felt that MLF funding was a poisoned chalice of sorts: it was not enough for their multiple implementation needs and had too many strings attached. As one seasoned delegate recalled, during the Kigali Amendment negotiations, some Article 5 countries alleged that the MLF ExCom limited the much vaunted aspect of the Protocol to allow for flexibility in the choice of strategies and technologies to employ. They argued that the MLF, in some cases, undermined the principle of flexibility by not always permitting choice in sector prioritization. These countries, he said, also felt that in some instances Article 5 countries' issues and concerns had either not been adequately addressed or they had been ignored.

He hoped non-Article 5 countries would live up to their promises and contribute to, not break down, trust.

As Friday night's negotiations crept perilously close to midnight, and details of the closed-door negotiations emerged, some worried that these fears would come true. It emerged that some countries had proposed language that qualified the countries to which the MLF funding should be disbursed, specifically those deemed least capable. If accepted, the language proponents would willingly contribute their full allocation. One observer pondered if this language was accepted, would it mean that a revision of who is defined as an Article 5 country is necessary? As he pointed out, that kind of language would most likely see least developed countries and small island developing states benefiting more than middle-income countries. A number of countries were heard saying that they thought this would set a dangerous precedent and in fact encroach on Article 10 (Financial mechanism) of the Protocol, which specifies that the MLF is to serve all Article 5 countries. One weary delegate questioned whether it would be better to just endure three years of hardship (i.e. a small replenishment) rather than set a precedent that could perhaps negatively affect future replenishment rounds.

In the end, they agreed to a replenishment benefitting all Article 5 countries, but the level of funding (US\$540 million) was significantly less than the TEAP had estimated would be sufficient (US\$602.71-748.85 million). As one country said, "We're not happy, but we can live with it." Another observer stated, "At least we avoided that political quagmire. It was unlikely to contribute to building trust in any way."

In the early hours of Saturday morning, another issue arose, whose conclusion left many worried anew. Belarus and Azerbaijan, who were not members of the small MLF replenishment group, voiced concern that their allocation to the MLF (US\$141,167 and US\$151,167, respectively) was significantly higher than they expected or were accustomed to. Promising to pay "what they could afford," the final total of the replenishment became murky. Some feared that this could open a door for others to only pay what they wanted, and not their total allocation. The US, who contributes 22% of the total, making it the Fund's largest contributor, also made a statement that put their contribution in doubt. It was no surprise therefore, that the adoption of the replenishment decision drew no applause. With the Kigali Amendment set to enter into force in early 2019, some whispered that, under the current replenishment, those who have not yet ratified may stay away if no further guaranteed funding is forthcoming. "If we ratify now, we may find ourselves in non-compliance before the next replenishment," lamented one previously enthusiastic delegate.

OPTIMISM FOR THE FUTURE?

Energy efficiency was another issue that proved to be a political quagmire. It was also an important emerging issue from the Kigali Amendment. According to experts at the meeting, improving energy efficiency while phasing down HFCs could at least double the climate change mitigation benefits of the HFC phase-down. Decision XXVIII/3 (Energy efficiency), which was adopted in 2016, requested the TEAP to investigate energy efficiency opportunities in the RACHP sector, and parties to submit to the TEAP relevant information on energy efficiency innovations in the sector.

Some parties cautioned that with this decision, the Montreal Protocol could once again be accused of operating outside its ODS mandate by addressing climate issues. As one concerned

delegate said, "we allowed HFCs as it was a case of unintended consequences, but that doesn't mean we now have license to encroach on other areas of the UNFCCC's mandate." Indeed, some interventions requested that any discussion be limited to the scope of the Kigali Amendment, saying the discussions should only be about matters affecting compliance under the Protocol. Others, however, welcomed the links to the wider climate change family. In fact, during the High-level Segment, one country even called the Montreal Protocol the "ideal place to address global warming."

In trying to ensure a balance between these positions, the COP/MOP addressed energy efficiency in much the same way it had address HFCs—in a contact group, where delegates could voice their concerns and apprehensions while considering two proposals. One was a merger of two quite separate ideas: requesting a workshop on energy efficiency at an upcoming meeting and requesting the TEAP to conduct a study to assess technology options and requirements for energy efficiency in the RACHP sector. The other proposal was a broader request to the TEAP to form a task force to further investigate the issue.

The original request to the TEAP to assess technology options for energy efficiency in the RACHP sector was put forward largely by countries with high ambient temperatures (HAT), which have for years been calling on the TEAP (and the Protocol as a whole) to take their particular challenges more seriously. "Temperatures in the summer are getting more and more unbearable, and although we want to be in compliance with the Montreal Protocol, we may end up resorting to high-global warming potential technologies to cope with the heat," one such country delegate explained in the contact group. Delegates from HAT countries were thus pleased when the final decision on energy efficiency reflected their concerns. Parties also easily agreed to host a workshop at the next OEWG meeting, with some commenting that hosting workshops is fast becoming the *de rigueur* way to address "thorny" issues, pointing to previous workshops on HFCs and safety standards. The MOP decided to postpone the issue of forming a TEAP task force until after the next OEWG meeting, agreeing that after the TEAP study and the workshop, they could better tailor this request.

The decision to host a workshop will ultimately help improve understanding of the issue. One seasoned observer, however, was heard questioning whether energy efficiency could ever truly be divorced from climate change, as ultimately the phase-down of HFCs still contributes to climate change mitigation. "Holding a workshop is a neutral way to get as much information as possible on this issue, and forewarned is forearmed," chimed one delegate at the conclusion of the contact group.

RESPONSIBILITY FOR THE FUTURE

Many argued that by adopting the Kigali Amendment, parties have taken steps to accept "responsibility for their future." That meant that COP 11/MOP 29 was the first step towards ensuring effective implementation. The MLF replenishment and energy efficiency, as it relates to the Kigali Amendment, were key to this.

The week's discussions were a mixed bag of fortunes: on one hand, the energy efficiency discussions "resulted in a tangible step forward, indicating progress." However, the MLF replenishment, with the ever-expanding agenda of the Montreal Protocol, left a lot to be desired.

A seasoned delegate observed that the level of the MLF replenishment "calls into question whether the steps forward would really be possible," noting other emerging issues that may

be a further drain on the limited resources of the MLF, including HFCs not listed in Annex F.

Given that the Protocol is considered the world's most successful environmental treaty, there are expectations for it to continue to flourish. As Brian Mulroney said in his keynote address, "It is the little treaty that could." So although the MLF replenishment discussions had not yielded the "bumper harvest" some had hoped for, walking out into the cold winter night, one delegate resolved, "We will work with what we have been given to implement our commitments, but work we must if we're going to continue the successes of the last 30 years."

UPCOMING MEETINGS

53rd Meeting of the GEF Council: The Global Environment Facility (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. In addition, the 23rd Least Developed Countries Fund and the Special Climate Change Fund Council Meeting will be held on Thursday, 30 November. On Monday, 27 November, there will be a consultation with civil society organizations. **dates:** 28-30 November 2017 **location:** Washington DC, US **contact:** GEF Secretariat **phone:** +1-202-473-0508 **fax:** +1-202-522-3240/3245 **email:** secretariat@thegef.org **www:** www.thegef.org/events/53rd-gef-council-meeting

UN Environment Assembly (UNEA): The third meeting of the Assembly, with the overarching theme of pollution, aims to deliver a number of tangible commitments to end the pollution of air, land, waterways, and oceans, and to safely manage chemicals and waste. Four events will take place in Nairobi in conjunction with the Assembly: the Global Major Groups and Stakeholders Forum (27-28 November); the Open-ended Meeting of the Committee of Permanent Representatives (29 November - 1 December); the Science, Policy and Business Forum (2-3 December); and the Sustainable Innovation Expo (4-6 December). **dates:** 4-6 December 2017 **location:** Nairobi, Kenya **contact:** UN Environment Secretariat **phone:** +254-20-762-1234 **email:** beatpollution@unenvironment.org **www:** www.unep.org/environmentassembly/assembly

World Future Energy Summit 2018: The World Future Energy Summit (WFES) is an annual event that is dedicated to advancing future energy, energy efficiency, and clean technology. WFES brings together over 30,000 visitors from 175 countries attracting government leaders, policy makers, entrepreneurs, and thought leaders. WFES is part of Abu Dhabi Sustainability Week. **dates:** 15-18 January 2018 **location:** Abu Dhabi, United Arab Emirates **contact:** Naji El Haddad, Group Event Director **phone:** +971-2-409-0499 **email:** naji.haddad@reedexpo.ae **www:** https://www.worldfutureenergysummit.com/

48th Sessions of the UNFCCC Subsidiary Bodies: The 48th sessions of the subsidiary bodies to the UNFCCC are expected to take place in April-May 2018. **dates:** 30 April - 10 May 2018 **location:** Bonn, Germany **contact:** UNFCCC Secretariat **phone:** +49-228-815-1000 **fax:** +49-228-815-1999 **email:** secretariat@unfccc.int **www:** http://unfccc.int/meetings/unfccc_calendar/items/2655.php?year=2018

Ninth Clean Energy Ministerial (CEM9): The Ninth Clean Energy Ministerial (CEM9) will be jointly hosted by the European Commission, Denmark, Finland, Norway, and Sweden, and will focus on promoting the green transition. The CEM

consists of 24 countries and the EU, who together account for 90% of all investment in clean energy in the world and 75% of global greenhouse gas emissions. CEM focuses on practical cooperation, the exchange of "good ideas" and experiences within green solutions and the involvement of the private sector. **date:** 1 May 2018 [tentative] **location:** TBA **www:** http://www.cleanenergyministerial.org/Our-Work/Ministerial-Meetings

Montreal Protocol OEWG 40: Montreal Protocol OEWG 40 will meet to prepare for MOP 30. **dates:** 9-13 July 2018 **location:** Vienna, Austria [tentative] **contact:** Ozone Secretariat **phone:** +254-20-762-3851 **fax:** +254-20-762-0335 **email:** ozoneinfo@unep.org **www:** http://conf.montreal-protocol.org/

Fourteenth Meeting of the Rotterdam Convention Chemical Review Committee: The Chemical Review Committee (CRC13) will review chemicals and pesticide formulations for possible listing under Annex III of the Rotterdam Convention. **dates:** 10-14 September 2018 **location:** Rome, Italy **contact:** BRS Secretariat **phone:** +41-22-917-8218 **fax:** +41-22-917-8098 **email:** brs@brsmeas.org **www:** http://www.pic.int

Fourteenth Meeting of the Persistent Organic Pollutants Review Committee: The Persistent Organic Pollutants Review Committee (POPRC-14) will review the possible listing of hazardous chemicals under the various annexes of the Stockholm Convention. **dates:** 17-21 September 2018 **location:** Rome, Italy **contact:** BRS Secretariat **phone:** +41-22-917-8729 **fax:** +41-22-917-8098 **email:** brs@brsmeas.org **www:** http://www.pops.int

Montreal Protocol MOP 30: Montreal Protocol MOP 30 will take place in 2018 at a date and location yet to be decided. **dates:** TBC, 2018 **location:** TBC, Ecuador **contact:** Ozone Secretariat **phone:** +254-20-762-3851 **fax:** +254-20-762-0335 **email:** ozoneinfo@unep.org **www:** http://conf.montreal-protocol.org/

For additional meetings, see <http://sdg.iisd.org/>

GLOSSARY

CFCs	Chlorofluorocarbons
COP	Conference of the Parties
CRP	Conference room paper
CTC	Carbon tetrachloride
CUEs	Critical-use exemptions
ExCom	Executive Committee
GWP	Global warming potential
HAT	High ambient temperatures
HCFCs	Hydrochlorofluorocarbons
HFCs	Hydrofluorocarbons
HLS	High-level Segment
HPMP	HCFC Phase-out Management Plan
HTOC	Halons Technical Options Committee
ImpCom	Implementation Committee
LVC	Low volume-consuming
MBTOC	Methyl bromide Technical Options Committee
MLF	Multilateral Fund
MOP	Meeting of the Parties
ODP	Ozone depleting potential
ODS	Ozone depleting substances
OEWG	Open Ended Working Group
RACHP	Refrigeration and air conditioning and heat pumps
TEAP	Technology and Economic Assessment Panel
TOC	Technical Options Committee
UNEP	UN Environment Programme/UN Environment