SUMMARY OF THE MONTREAL PROTOCOL MEETINGS IN VIENNA: 15-23 JULY 2016

The resumed session of the thirty-seventh meeting of the Open-Ended Working Group to the Montreal Protocol on Substances that Deplete the Ozone Layer (OEWG 37) convened in Vienna, Austria from 15-16 July 2016. OEWG 38, which met from 18-21 July, and the third Extraordinary Meeting of the Parties to the Montreal Protocol (ExMOP 3), which took place from 22-23 July 2016, followed thereafter.

The resumed session of OEWG 37 continued its discussions on the feasibility and ways of managing hydrofluorocarbons (HFCs), as agreed to under the Dubai Pathway on HFCs. It concluded its work on generating solutions to the stated challenges contained in the Dubai Pathway on HFCs. A key outcome was agreement on possible funding solutions.

OEWG 38 considered, inter alia: the report by the Technology and Economic Assessment Panel (TEAP) on updated and new information on alternatives to ozone-depleting substances (ODS); the TEAP 2016 report; issues related to exemptions under Article 2 of the Protocol; and the terms of reference for the study on the 2018-2020 replenishment of the Multilateral Fund (MLF) for the Implementation of the Montreal Protocol. Parties also continued work in the HFC Management Contact Group, by starting consideration of the four amendment proposals. As parties were unable to conclude their work, OEWG 38 was suspended and, subject to the availability of funds, may reconvene prior to MOP 28.

ExMOP 3 considered issues contained in the Dubai Pathway on HFCs. ExMOP 3 convened a ministerial round table entitled “Moving Forward to Deliver in 2016 on the Mandate of the Dubai Pathway on HFCs.” Parties also heard national statements and updates on the work of the HFC Management Contact Group. 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.

A BRIEF HISTORY OF THE OZONE REGIME

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

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

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

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

**LONDON AMENDMENT AND ADJUSTMENTS:** Delegates to the second Meeting of the Parties to the Montreal Protocol (MOP 2), held in London, UK, in 1990, tightened control schedules and added ten more CFCs to the list of ODS, as well as carbon tetrachloride (CTC) and methyl chloroform. MOP 2 also established the Multilateral Fund (MLF), which meets the incremental costs incurred by Article 5 countries in implementing the Protocol’s control measures and finances clearhouse 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. It established 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, in addition to tightening existing control schedules; and banning trade in methyl bromide with non-parties to the Copenhagen Amendment.

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

**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) submitted by the Federated States of Micronesia (FSM) and Mauritius.

**MOP 22:** MOP 22 took place in Bangkok, Thailand, in 2010, and adopted decisions on, *inter alia:* the terms of reference (TOR) 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, one submitted by the US, Mexico and Canada, and another submitted by FSM.

**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; the treatment of ODS in relation to servicing ships; and additional information on alternatives. 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 (SAP) of RC-316c, a CFC not controlled by the Montreal Protocol; procedural issues related to the TEAP and its subsidiary bodies; and data and compliance issues. 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 Montreal Protocol.

**MOP 25:** MOP 25 was held in Bangkok, Thailand, in 2013. The MOP adopted 21 decisions, including on: TOR for the study of the 2015-2017 MLF replenishment; 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: 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 OEWG session, to continue discussions on HFC management, including a focus on high-ambient temperatures (HAT) and safety requirements, as well as energy efficiency.

**MOP 27:** Held immediately after the two-day resumed session of OEWG 36, MOP 27 met from 1-5 November 2015, in Dubai, United Arab Emirates. Delegates adopted a number of substantive and procedural decisions. These included: essential-use and critical-use exemptions (EUEs and CUEs); avoiding the unwanted import of products and equipment containing or relying on HCFCs; the budget; and membership of Montreal Protocol bodies for 2016.

The two-day resumed session of OEWG 36 agreed on a mandate for a contact group on the feasibility and ways of managing HFCs (HFC Management Contact Group). The Contact Group was established at MOP 27 and met throughout the week. Following protracted negotiations that concluded in the early hours of Friday morning, parties adopted the Dubai Pathway on HFCs, a “roadmap” for negotiating an HFC amendment including provisions for an additional OEWG meeting and an extraordinary MOP in 2016.

**OEWG 37:** OEWG 37 convened in Geneva, Switzerland, from 4-8 April 2016. Delegates heard an update from the TEAP on ODS alternatives. The remainder of the meeting focused on the work of the HFC Management Contact Group, under the mandate outlined in the Dubai Pathway on HFCs. Parties concluded a first review of the challenges listed in the mandate, including discussing a conference room paper on funding issues, reaching an “in principle” agreement on an exemption for countries with HAT conditions as part of an HFC amendment, which includes the definition of HAT. OEWG 37 was suspended with a view to completing generating solutions to challenges at a resumed session.
RESUMED OEWG 37 REPORT

On Friday, 15 July, OEWG 37 Co-Chair Paul Krajnik (Austria) opened the resumed session noting recent research suggests that the ozone layer is starting to heal and underscoring that this finding indicates the Montreal Protocol is achieving its original objectives. He said parties now face “a historic chance” to contribute to climate change mitigation through a Montreal Protocol amendment on HFCs.

Tina Birmpili, Executive Secretary, Ozone Secretariat, noted that 2016 is the year of implementation for the Dubai Pathway on HFCs, meaning that delegates have three months until the Kigali MOP in October to resolve challenges, find solutions and amend the Protocol to include HFCs. She said this is a sufficient amount of time to reach an agreement if parties are determined to do so. She urged delegates to finish identifying challenges and solutions during OEWG 37, and not wait until the ExMOP, so that ministers can give negotiators input on the political issues under the amendment negotiations. She called for solving the funding challenge as a matter of priority, suggesting that once this challenge is fully addressed other issues will be more easily resolved. Noting the lessons and achievements of the Montreal Protocol, she urged delegates to take the next step and adopt an amendment to phase down HFCs. She cautioned that it would “only be a true victory when the efforts that result in gains are shared among all parties.”

Delegates adopted the provisional agenda (UNEP/OzL.Pro.WG.1/resumed.37/1). OEWG 37 Co-Chair Leslie Smith (Grenada) explained the organization of work, underscoring that much of the time would be spent in the HFC Management Contact Group co-chaired by Patrick McInerney (Australia) and Xia Yingxian (China). He noted that informal groups would be held as needed.

DUBAI PATHWAY ON HFCs

The HFC Management Contact Group met on Friday and Saturday. Contact Group Co-Chair McInerney opened the contact group on Friday morning by reminding delegates of the progress made on the discussions regarding HFCs, stressing that, by the end of OEWG 37, participants should resolve the identified challenges and generate concomitant solutions. He highlighted progress on the HAT exemption at the April OEWG session in Geneva and the generation of some solutions on funding and flexibility. He said the expectation is to consider the four amendment proposals once the group agrees that solutions have been “generated as far as is possible.”

Annie Gabriel (Australia), facilitator of the informal discussion on funding, informed the Contact Group that a group of countries met on 14 July 2016 to continue the informal discussions that began at the previous OEWG 37 session. From non-Article 5 parties, she said Canada, France, Germany, Italy, Japan, Slovakia, Sweden, Switzerland, the UK, and the US attended. From Article 5 parties, she noted participation by Argentina, Bahrain, Brazil, Burkina Faso, China, FSM, India, Kuwait, Nigeria, Pakistan, and Saudi Arabia. She said discussion focused on the manufacturing sector and guidance to the MLF Executive Committee (ExCom) on guidelines and cost elements to be included in financing guidelines for the sector. She said the group did not reach any firm conclusions, but that it had a good exchange of views and generated options that could form the basis of a final agreement. Observing that some issues will need more time, she requested additional time for discussions, to which Contact Group Co-Chair McInerney agreed.

On other issues, Iran explained that his delegation was not present at OEWG 37 in Geneva and asked about re-opening the discussion on HAT. Contact Group Co-Chair McInerney suggested Iran liaise with others on the issue.

In the evening, Contact Group Co-Chair Xia noted constructive consultations throughout the day. Funding Informal Group Facilitator Annie Gabriel reported back, saying discussions focused on the servicing sector, noting agreement on a large number of items that might be eligible for funding. She said that the first run through of the servicing sector issues is almost complete but a number of other issues remain outstanding.

Martin Sirois (Canada), facilitator of the group on exemptions not related to HAT, said discussions were fruitful but requested additional time for consultations on suitable solutions to the challenges these issues posed, saying they are close to being able to present text to the contact group.

On the linkages between HFCs and HCFCs, Saudi Arabia requested further time, emphasizing that the group had exchanged views on principles, without any solid proposals. The European Union (EU) noted the discussions touched on differences between non-Article 5 and Article 5 parties, options for flexibility, timing of schedules, and links with finance. Both proposed developing text for further consideration by the informal group.

Contact Group Co-Chair Xia noted all three groups require extra time for their deliberations, suggesting the funding group reconvene later in the evening and on Saturday morning, and that the groups on HCFC-HFC linkages and non-HAT related exemptions meet on Saturday afternoon.

Following informal group consultations throughout Saturday, Contact Group Co-Chair McInerney reconvened the HFC Management Contact Group on Saturday evening at 5:20 pm, requesting progress reports from the informal discussion groups. On exemptions not related to HAT, Facilitator Sirois reported that a text had been agreed allowing exemptions, for example those for critical or essential uses, and that the date for deciding on the exemption mechanism would be set during the amendment negotiations.

On the linkages between HCFCs and HFCs, Facilitator Mazen Hussein (Lebanon) said progress had been made, but the group required additional time to finish its work.

On funding, Facilitator Gabriel said the group had made considerable progress and generated some solutions, but more work was needed on, inter alia, overarching principles and timelines, energy efficiency, and other activities.

Contact Group Co-Chair McInerney then conducted a stocktaking of the remaining challenges, asking for reports from delegations on any issue not already addressed in Geneva or in the informal groups of the resumed session. China said it had conducted consultations on flammability, but would need more time to conclude. The EU reported that discussions on the availability of technologies had resulted in general agreement that periodic technology reviews should be conducted, advised
by the TEAP, and that these would include energy efficiency. China reported that consultations on non-party trade provisions had resulted in a compromise text saying such provisions for all countries would enter into force five years after the Article 5 parties’ freeze date. Regarding synergies with the UN Framework Convention on Climate Change (UNFCCC), Contact Group Co-Chair McInerney suggested, and the contact group agreed, that this challenge should be revisited once amendment negotiations are underway and it becomes clearer what approach will be taken.

The contact group was suspended for informal groups to meet.

Contact Group Co-Chair Xia reconvened the contact group on Sunday, 17 July, at 2:06 am, inviting the facilitators of the informal groups to provide progress reports.

On funding, Facilitator Gabriel said the informal group reached consensus on a number of solutions related to the funding challenges for consideration by the contact group. She highlighted agreement on: three overarching principles and timelines; guidance provided to the ExCom on incremental costs, including on the consumption manufacturing sector and the production and servicing sectors; and the cut-off date for eligible capacity, which will be determined by the MOP.

On the consumption manufacturing sector, she noted that the group agreed to negotiate incremental operating costs and the duration of those costs in the context of an amendment, explaining that discussion focused on the cost of process and application patents, and designs and incremental costs of royalties. On the servicing sector, she noted there was agreement on the cost categories that would be eligible for inclusion in cost calculations and on two points to be considered during amendment negotiations regarding additional import costs and incremental costs of refrigerants for motor vehicle servicing and recharging. She observed that the group also discussed several other issues, including energy efficiency.

On other issues, China shared text on the safety of substitutes: “Parties recognize the importance of timely updating international standards for flammable low-global warming potential (GWP) refrigerants, including IEC60335-2-40, and support promoting actions that allow safe market introduction, as well as manufacturing, operation, maintenance and handling of zero-GWP or low-GWP refrigerant alternatives to HCFCs and HFCs.” Parties agreed to the proposed text.

The EU reminded delegates of its text on periodic technology reviews, which states: “Conduct periodic technology reviews to identify alternatives that will include information on energy efficiency.” Saudi Arabia expressed concern about combining energy efficiency and availability of technologies, saying that availability also includes cost concerns. He requested time to develop and discuss draft text. Following a short consultation, the EU reported that the text now states: “Conduct periodic reviews of alternatives using criteria set out in paragraph 1(i) of decision XXVI/9 (Response to the report by the TEAP on information on alternatives to ODS),” noting that parties will discuss this issue further at OEWG 38.

Pakistan requested the Co-Chairs to provide an update on the status of challenges not mentioned.

Contact Group Co-Chair Xia clarified that some outstanding issues will be taken forward to OEWG 38 and, as such, issues will be subject to further consultation and negotiation before adopting any amendment. The contact group then adjourned.

On Sunday morning, when the OEWG 37 plenary reconvened at 2:50 am, OEWG 37 Co-Chair Smith asked the contact group to report on its outcome. Contact Group Co-Chair McInerney reported a “concrete and positive outcome” and reviewed the solutions developed for each category of challenges identified in the Dubai Pathway on HFCs, noting that solutions for some challenges would require further discussion during the course of the amendment negotiations.

OEWG 37 Co-Chair Smith welcomed the report and asked if there were any objections or clarifications from the floor. India noted that the informal group on funding agreed that both process and application patents will be covered. In response to a request from Pakistan, Contact Group Co-Chair McInerney read the agreed language regarding funding for the cost of importing alternatives, which calls for a proposal on this issue to be discussed while negotiating an amendment and resolved prior to its adoption.

OEWG 37 Co-Chair Smith said the set of agreed solutions would be reported to OEWG 38, permitting advancement to the next stage of the Dubai Pathway, negotiations of an HFC amendment.

INFORMAL DISCUSSIONS ON HFCs-HCFCs

LINKAGES: The informal discussions on the linkages between HFCs and HCFCs met on Friday and Saturday, facilitated by Mazen Hussein. The discussions centered on the need to avoid double conversions.

Many parties stressed the need to avoid double conversions, with some suggesting that careful design of schedules could minimize them. One Article 5 country emphasized that the rules of the “HCFC phase-down game” are changing midway due to the need to phase down HFCs, thus requiring modification of the HCFC phase-out schedule for sectors where alternatives to HFCs are not readily available, in order to ensure they are not subject to double conversions. Many Article 5 countries expressed concern that the costs of multiple conversions would place a heavy burden on enterprises.

Some parties noted that, for many sectors, alternatives to HFCs already exist, and that, under the MLF, incentives to convert to low-GWP HCFC alternatives and a focus on providing climate friendly alternatives already ensures that many HCFC conversion projects utilize alternatives to HFCs.

A number of non-Article 5 countries noted that double conversions are an issue for them as well, and called for using existing incentives and careful design of schedules to avoid double conversions. One noted the need for different solutions for Article 5 and non-Article 5 countries, saying the various proposals already reflect this differentiation.

On Saturday, the informal group considered draft text developed by a small group of interested parties. The text was presented by one party, who noted that the text acknowledges: the linkages between HFC and HCFC schedules; the preference to avoid transitions from HCFCs to high-GWP HFCs; the willingness to provide flexibility if no alternatives are available;
and, inter alia, allow for a direct transition to low-GWP alternatives at a later date, with the whole of the text applying to “certain sectors, in particular industrial process refrigeration.”

One party questioned what “later date” meant. Another, supported by several others, called for adding “zero-GWP,” in addition to referencing low-GWP alternatives. Several questioned why the text was limited to the industrial process refrigeration sector, with some requesting inclusion of air conditioning, which was strongly opposed by another. Several parties noted that the text was not necessarily limiting, by using the term “certain sectors,” and that industrial process refrigeration had been singled out because these are complex, individually designed systems entailing very high cost and are difficult to replace.

In the evening, parties reconvened to address the remaining bracket in the text around air conditioning. Several parties said they could agree to the original text. One party proposed replacing text on industrial process refrigeration with text on the preference to avoid transitions from HCFCs to high-GWP HFCs and the willingness to provide flexibility if no other technically proven and economically viable alternatives are available. This suggestion was strongly opposed by one party. After numerous bilateral consultations, parties agreed to include the newly proposed text as the first paragraph in addition to the paragraphs proposed in the morning, retaining specific reference to industrial process refrigeration, removing the bracketed reference to air conditioning from the text and deleting minor duplications.

INFORMAL DISCUSSIONS ON EXEMPTIONS NOT RELATED TO HAT: The informal group on exemptions not related to HAT met from Friday to Saturday, facilitated by Martin Sirois. The group resumed discussions held during the April OEWG 37 session. The draft text considered in April was reviewed, discussed and revised by the group. Issues addressed included: whether exemptions are needed at all, since the phase-down would leave residual HFC production; whether an assessment of the need for, and decision on, a possible mechanism should be left for later once more data becomes available and the situation becomes clearer, and if so, whether it should occur “no later than” or “not prior to” 2030; whether TEAP should be requested to assess the need for exemptions; and whether there should be periodic TEAP reviews of exemptions. The group asked two parties to draft text.

The informal group met on Saturday afternoon to consider the compromise text. After extensive discussion, the group: deleted a chapeau of “Parties agreed,” since the group was to generate solutions, not negotiate text; changed a bracketed reference to 2030 as the date to consider exemption mechanisms to “in 20xx,” as a placeholder for the date to be determined after amendment negotiations set phase-down schedules; and clarified that when exemption mechanisms are considered, the option of multi-year exemptions would be taken into account. The agreed text says that: exemptions would be allowed, such as for essential uses and critical uses, in any HFC amendment; the exemption mechanism, including the possibility of multi-year exemptions, will be considered at a date to be set during amendment negotiations; and TEAP would be provided with information and guidance for its periodic review of sectors where exemptions may be required.

CLOSING SESSION
On Sunday morning, OEWG 37 Co-Chair Paul Krajnik presented the draft report of the meeting (UNEP/OzL.Pro.WG.1/resumed.37/L.1), which was adopted. OEWG 37 Co-Chair Krajnik declared the meeting closed at 3:12 am.

OEWG 38 REPORT
OEWG Co-Chair Leslie Smith (Grenada) opened OEWG 38 on Monday, 18 July 2016. Tina Birmpili, Executive Secretary, Ozone Secretariat, welcomed OEWG 37’s “concrete and positive outcome” on generating solutions to challenges identified under the Dubai Pathway on HFCs. She recalled the previous two ExMOPs were convened to take decisions on the phase-out of methyl bromide and the final phase-out of CFCs, which she described as difficult issues at the time. She stressed both decisions were made without absolute certainty on alternatives, emphasizing that knowledge on alternatives will keep improving.

She urged participants to take action on HFCs.

ADOPTION OF THE AGENDA AND ORGANIZATION OF WORK: OEWG Co-Chair Smith introduced the agenda and the organization of work (UNEP/OzL.Pro.WG.1/38/1).

On agenda item four on the Dubai Pathway on HFCs, Pakistan observed that this item also addresses the amendments. He said the agenda item could not be finalized unless the amendments are resolved.

China introduced a conference room paper (CRP) on the establishment and coordination of an ad hoc standard coordinating group on criteria or standards on substitutes. OEWG Co-Chair Smith said the CRP will be addressed under other matters.

The OEWG then adopted the agenda.

Pakistan, supported by the US, requested no parallel groups be scheduled when considering the Dubai Pathway on HFCs. Saudi Arabia, supported by Kuwait, Egypt, Bahrain and others, requested time for regional consultations.

The Russian Federation questioned the practice of night sessions. Many supported this sentiment, including Egypt, Pakistan and Sudan. Iran suggested night sessions end by 10:00 pm. Argentina requested breaks. Kuwait proposed limiting contact groups to two to three hours.

The US, Senegal, Bahrain, Jordan, FSM and others urged efficiency to minimize night sessions. The US said night sessions could be necessary, distinguishing between night sessions and “marathon night sessions.”

TEAP REPORT ON UPDATED AND NEW INFORMATION ON ALTERNATIVES TO ODS
This item was addressed in plenary from Monday through Thursday. OEWG Co-Chair Paul Krajnik (Austria) introduced this item (UNEP/OzL.Pro.WG.1/38/2 and Add.1) on Monday. TEAP Co-Chairs Lambert Kuijpers (the Netherlands), Bella Maranion (US) and Roberto Peixoto (Brazil) presented the updated report, which, inter alia: further updates information related to the refrigeration and air conditioning (RAC) sector, specifically on RAC and not-in-kind technologies, safety standards and criteria related to “environmentally sound”; and addresses alternatives to fishing vessels’ refrigeration systems. The report further updates HAT information and scenario assumptions, specifically on the outcomes of projects testing.
refrigerants under HAT conditions, and elaborates on scenarios, including annual HFC production reporting by country, considering existing regulations in business as usual scenarios, and calculating the impact of an 18-year manufacturing conversion period.

Responding to questions, the TEAP Co-Chairs reiterated the importance of increasing the comparability of projects testing alternatives under HAT conditions, noting this poses challenges. They clarified that, inter alia: assessment of commercial availability and the expected price of alternatives is challenging as they work with publically available information; carbon dioxide and ammonia systems for vessel refrigeration are medium cost, in part due to the cost of the necessary auxiliary systems required and their complexity; and penetration of hydrofluoroolefins is ongoing, but there are large price-related uncertainties. The TEAP Co-Chairs further clarified: the report only considers HFC production related to the RAC sector; there is limited or no reported information on HFC production for many countries so the report reflects best estimates, but further investigation is warranted; the use of blends has been included in the scenarios by applying GWP averages for the blends; energy efficiency is not included in the scenarios, as it depends on the refrigerant used and the systems and conditions in which it is used; safety and standards for ODS alternatives will be investigated; and fluorinated greenhouse gases (F-gas) regulations will be considered for the next update.

On Tuesday, during the morning plenary, the US said it would be presenting a CRP asking the TEAP to: examine their mitigation scenarios and adjust them to match HFC discussions at OEWG 38; address environmental and climate benefits; and consider the impact of an HFC phase-down on the MLF. The US introduced this CRP (UNEP/OzL.Pro.WG.1/38/CRP.3) during Wednesday morning’s plenary session.

On Thursday, TEAP informed that no further discussions had taken place and that the TEAP will take into consideration comments and guidance received during its plenary presentation when updating the report for MOP 28. OEWG Co-Chair Krajnik then closed the agenda item.

DUBAI PATHWAY ON HFCS

This item was introduced in the OEWG 38 plenary on Monday. The HFC Management Contact Group met from Monday through Thursday.

OEWG Co-Chair Leslie Smith introduced the item, noting that the resumed OEWG 37 had generated solutions to all the challenges identified in the Dubai Pathway on HFCs. He said that the HFC Management Contact Group would reconvene with Patrick McInerney (Australia) and Xia Yingxian (China) continuing as co-chairs.

During Wednesday’s plenary session, OEWG Co-Chair Smith noted a number of new CRPs pertaining to the discussions on a possible amendment had been tabled, including: an Indian submission of text for parties’ consideration for inclusion in decisions under the Dubai Pathway on HFCs (UNEP/OzL.Pro.WG.1/38/CRP.2), and a Pakistani text for consideration by the parties for inclusion in decisions related to the phase-down of HFCs under the Montreal Protocol (UNEP/OzL.Pro.WG.1/38/CRP.4). He said these CRPs would be taken up by the HFC Management Contact Group.

During Thursday’s plenary session, HFC Management Contact Group Co-Chair Xia reported that the contact group was not able to complete its work and required more time. Consequently, OEWG 38 was suspended to afford the contact group more time to reach consensus.

HFC MANAGEMENT CONTACT GROUP: Contact Group Co-Chair Xia opened discussions on Monday afternoon, proposing developing a plan for the negotiations and presenting several documents to guide negotiations on the amendment proposals (UNEP/OzL.Pro.WG.1/38/7 and UNEP/OzL.Pro.WG.1/resumed.37/INF/1).

Bahrain called for identifying priorities and areas on which consensus could be quickly reached and leaving contentious issues for later. Burkina Faso suggested parties present their proposals. Pakistan supported individual discussions on each proposal so that delegates could query proponents on each element. FSM agreed with focusing first on the four existing proposals, but reviewing them issue-by-issue, while bringing in other proposals.

El Salvador, supported by Senegal and South Africa, called for having the consolidated proposals on the screen, reading the proposals, finding areas of overlap and identifying areas of difference. Colombia suggested starting with a read through of each of the four proposals, followed by critical discussion, then discussion by issue, focusing first on areas where the existing proposals already suggest convergence. The US suggested looking at the consolidated proposals to find areas of consensus and focus on those in order to find common ground.

The EU, supported by Cameroon, Canada and Indonesia, suggested separating policy issues from legal issues, leaving legal drafting for a second phase. He called for addressing baselines, followed by the freeze or first reduction step, the overall reduction schedule, finance and exemptions, and other issues related to the implementation of an amendment. Argentina supported the EU approach, but suggested periodically “taking the temperature” to see how closely the suggested options fulfill negotiators’ expectations.

Brazil opposed using the Secretariat’s document (UNEP/OzL.Pro.WG.1/38/INF/1) that consolidates the four amendment proposals on-screen. Saudi Arabia opposed a process based on the four proposals, as the views of all parties have yet to be incorporated. He also objected to discussing issues related to climate change mitigation or adaptation, saying they belong under the UNFCCC. The Russian Federation said the contact group can only discuss options, not amendment proposals, insisting the latter be discussed in the OEWG.

Contact Group Co-Chair Xia reflected on Monday evening’s session, saying the group will proceed by discussing elements, focusing initially on baselines and control measures, and reminded, “Nothing will be agreed until everything is agreed.”

On Tuesday, HFC Management Contact Group Co-Chair McInerney opened the contact group, reminding delegates that they would begin with issue-by-issue discussions.

On baselines for non-Article 5 parties, many, including New Zealand, Canada and Norway, supported using an average over multiple historic years. Several noted such an approach allows for fluctuations over time.
On baseline consumption formulae, Switzerland supported using an average of HFC and HCFC consumption from 2011-13 as in the Island States’ proposal and, with New Zealand, preferred the percentage of the HCFC baseline consumption added to the HFC baseline to be between 10-25%. The US explained that the baseline in the North American proposal, 100% of an average of HFC consumption and 75% of average HCFC consumption between 2011 and 13, recognizes that non-Article 5 countries are already in transition. With Canada, she stressed the proposal is not static and is open to adjustment.

The Russian Federation favored the North American proposal’s baseline consumption formula and said the common methodology agreed upon should be as simple as possible for ease of use. Japan preferred the baseline formula in the EU or Island States’ proposal so as not to disadvantage those who have accelerated their HCFC phase-out.

Australia said that they: agree with including some HCFC component to account for conversions; prefer a baseline set as an average of consumption between 2011-2013; and prefer the Island States’ proposal on the HCFC component, since reflecting actual consumption would be unfair to those who have accelerated their HCFC phase-out. Norway preferred an HFC baseline set after 2004.

In response to a question from China on data accuracy and availability for production and imports, several countries shared their data and reporting processes. The EU said it has collected data on HFC imports and exports since 2006. Australia said it has good data available since 2004 to set a historical baseline. Canada said her country has good HFC consumption data. Norway said her country has solid data on HFC imports and HCFCs in products and equipment. Japan explained that it relies on industry reporting on imports and exports, customs data and consumption data reported to the UNFCCC. Georgia noted the MLF has financed HFC consumption surveys in many countries, observing these surveys produce very good data in his country.

China also asked why the EU proposal uses a four-year data average. The EU responded this average reflects different reporting cycles among their 28 Member States and observed that longer time periods increase the accuracy of the number.

Belarus expressed concern about setting historic baselines, as it does not currently have an accounting system for HFC imports and exports. Noting that all the proposals use carbon dioxide equivalents (CO2e) as a measure of GWP, he called for carefully considering which coefficients are used. Armenia noted they face the same challenge due to a lack of an HFC accounting system, but recalled, supported by Australia, that when CFC baselines were set, most countries also lacked accounting systems and the CFC phase-out was still a great success.

China thanked all countries who explained their baseline proposals, reporting systems and data reliability. She suggested that, based on what she had heard, the baseline parties have chosen for non-Article 5 countries is immaterial, since in most of the proposals the final amount arrived at would be approximately the same. On data accuracy, she suggested creating a mechanism to ensure that data used in baseline calculations is accurate.

Pakistan asked when HFC use peaked in non-Article 5 countries and what their cumulative HFC volume used to date is. The US replied that the world has not yet hit a peak, which is partly why an HFC amendment is needed. She also suggested data on cumulative volume is not readily available.

Kuwait asked if the way the North American and EU baseline proposals are constructed would allow non-Article 5 countries to continue using HCFCs past Protocol phase-out dates. The US assured that none of the proposals were structured to undermine non-Article 5 party commitments on HCFCs.

On baselines for Article 5 parties, FSM clarified that the Island States’ proposal sets a baseline based on the refrigerant needs of Article 5 parties, including using both HFC and HCFC components, and allows for some expected growth. The EU highlighted their proposal takes a global view of HFCs and HCFCs and encourages leapfrogging out of HCFCs.

A number of Article 5 parties, including Egypt, Indonesia, Kenya, Malaysia, and Saudi Arabia, highlighted the challenge posed by lack of reliable data, with some noting they currently do not have HFC accounting systems.

Burkina Faso supported efforts to help countries collect data on HFC use and consumption to facilitate swift action.

Chile informed that her country has a preliminary inventory on HFC and HFC consumption and is preparing a detailed inventory. Observing that not all countries have data, she said the baseline should reflect realities for countries that do not have such data, and supported a three-year period between 2016 and 2020 for a baseline.

Mexico opposed a distant baseline, saying a nearer one would enable early control over HFCs and access to funding. Saudi Arabia supported a later date, underscoring the importance of avoiding double conversions. Indonesia supported the Indian proposal for setting a baseline between 2028 and 2030. Malaysia supported a baseline based on a future year beyond 2020.

Egypt stressed the importance of reflecting the special conditions affecting Article 5 countries’ consumption, such as political and economic upheavals during the baseline period.

Nigeria and Cameroon asked for more clarity on the rationale for baseline calculations and reduction schedules. Lesotho said his country needed time to understand the multiple aspects of baselines, including dates, the HCFC percentage and economic impacts.

On Wednesday morning, delegates resumed discussing Article 5 party baselines.

On a negotiating text, Senegal, supported by Morocco and Mauritania, emphasized the need for a document to form a real basis for further negotiations on Article 5 baselines.

On baseline dates, Senegal proposed a baseline from 2020-2024. The Dominican Republic supported 2017-2022 as a good timeframe. Guatemala supported a baseline from 2016-2019. Colombia, with Cuba, supported using 2020 as the start for baseline dates. Brazil supported a significant time lag between baseline years for non-Article 5 and Article 5 parties, favoring the Indian proposal. China preferred a future date, underscoring that growth in HFC use should be linked to the freeze date.

Argentina urged sufficient time between non-Article 5 and Article 5 phase-downs to allow for conversion to “tried and tested” new alternatives. In response to South Africa, the EU
On country-level implications of various baseline options, Switzerland proposed the Ozone Secretariat establish a “help desk” or interface for countries to inquire on how to calculate baselines. Several parties, including India and Colombia, supported establishing some form of support desk. New Zealand described his delegation’s work in analyzing the Article 5 baselines, offering to share it with the Secretariat and interested parties.

Brazil, with Australia, said one guiding principle in the amendment negotiations is that the Protocol and its subsidiary bodies have worked well in the past, so maintaining its successful modalities in this amendment is important.

Co-Chair Xia opened the Wednesday evening session, which considered the freeze year and phase-down schedules for non-Article 5 parties, followed by those for Article 5 parties.

On the freeze year, Switzerland and Australia supported a phase-down in 2019, with Australia, New Zealand, Norway, and others noting the time needed to enact legislation.

Belarus suggested setting the baseline in 2020, then starting phase-down in 2028, to allow for implementation of regulations and mechanisms.

China and Saudi Arabia worried that no freeze date or a freeze date in 2019 would result in HFC import or production spikes.

On end dates, Switzerland proposed 2034-2035. Australia preferred 2036. The EU noted it proposed 2034 but remained open.

On the residual percentage, Norway, New Zealand, Australia, Canada, and the US supported 15%.

On the phase-down schedule, New Zealand, Norway, Japan, and the US preferred the North American proposal’s schedule.

The EU said it is open to adjusting the schedule in its proposal. Kuwait called for careful coordination of the non-Article 5 and Article 5 phase-down schedules, and asked how the proposed schedule for non-Article 5 parties might affect hydrofluoroolefin production.

Japan suggested a technical review to periodically assess the state of alternatives. The US said its proposal includes a technology review applicable to both non-Article 5 and Article 5 parties.

On Article 5 reduction schedules, India presented its proposal. He highlighted, inter alia, cost concerns, observing the MLF has spent much less to date than the estimated costs of an HFC phase-down. Burkina Faso and Mexico expressed concern that India’s proposal allows for future exponential growth of HFCs.

Observing that alternative technologies are not available, Kuwait preferred a longer reduction schedule such as in the Indian proposal. Malaysia said Article 5 parties need at least a two-year grace period to allow transitions by industry.

The EU described its proposal as the “basket approach.” Saudi Arabia did not support the basket approach and expressed concern about time for industry to transition.

Argentina said the proposals do not respect common but differentiated responsibilities (CBDR).

In response to questions from Argentina, FSM stressed that what matters is the amount of refrigerant allowed.
Mexico emphasized the North American proposal’s structure, which he said includes a reasonable time for freezing of consumption and includes a series of technologies that could be easily and quickly adopted.

Lesotho acknowledged benefits of an early freeze date but questioned additional parameters like GDP and population. Egypt reflected on challenges in phasing out or halting HFCs.

Contact Group Co-Chair McInerney opened Thursday morning’s session, which addressed Article 5 baselines, freeze dates and schedules.

On baseline dates, Rwanda, for the African Group, including Cameroon, proposed 2017-2019. China and Bahrain called for baseline dates between 2019 and 2025. Saudi Arabia suggested 10 years after amendment adoption. Iran and Sri Lanka endorsed the Indian proposal. Cambodia supported a baseline date beyond 2020, suggesting this date be agreed on before a freeze is confirmed. Samoa agreed with early calculation dates for baselines but urged for some flexibility.

On baseline calculations, China said 100% of HFC consumption plus 100% of HCFC consumption was equitable, realistic and easy to understand.

On grace periods, Iran suggested 10-15 years after the start of the non-Article 5 schedule. China called for 10-12 years. Bahrain urged 10 years. Sri Lanka said it needed a long grace period.

On freeze periods, Cameroon said it should start in 2022 but indicated flexibility. China suggested 2025-2030. Sri Lanka endorsed the Indian proposal.

On HFC reduction start dates and schedules, Iran called for each five-year reduction step to be decided five years in advance. China suggested the first reduction be no more than 10% of the baseline, then accelerated thereafter. Rwanda and the EU called for agreeing on the details of an Article 5 schedule after amendment adoption.

Mexico stressed that a lengthy and indeterminate schedule would disadvantage Article 5 countries as they will increasingly lag behind as time goes on and as non-Article 5 countries increasingly use HFC-free technologies. He stressed swift action will result in access to new technologies and timely financing.

On the residual, China called for it to be above 15%, with countries free to determine how to apply the residual. China, noting calls for review mechanisms in an amendment regarding Article 5 parties, said the MOP should also conduct reviews of non-Article 5 HFC data.

Noting many interventions supported 10 years between non-Article 5 and Article 5 schedule steps, Canada said the North American proposal calls for an Article 5 reduction in 2026, stressing commencement of an HFC phase-down has been delayed for many years. He said the final step has a 10-year differentiation. Switzerland noted financial resources for an ambitious phase-down would be more significant, explaining Article 5 producers will be forced to either lose non-Article 5 markets or adopt new technologies without financial support if the Article 5 phase-down schedule extends much beyond that of non-Article 5 parties. The US stated that early finance is key, noting that such support would be associated with early start dates. Kuwait underscored the need for flexibility related to national circumstances.

The EU emphasized that their proposal aims to address several challenges: the lack of data; availability of alternatives; the issue of HFC growth due to the HCFC phase-out; the links to the HCFC phase-out; and the importance of flexibility to address national circumstances.

Pakistan introduced its proposal (UNEP/OzL.Pro.WG.1/38/CRP.4), noting that it aims to set the phase-down target for HFC production and consumption at 50% of the baseline, and that, for Article 5 countries, once the target has been reached, the phase-down will be reviewed with respect to the availability of suitable alternate technologies.

Regarding non-Article 5 baselines and schedules, Iran endorsed the Indian proposal regarding the freeze data and baseline for non-Article 5 parties, but supported the EU proposal’s reduction steps. China said it respected the non-Article 5 baselines and schedules in the North American and EU proposals since they had carefully considered their own situations.

Regarding funding, China called for “perfecting” the funding solutions developed during the resumed OEWG 37 session and implementing them in the MLF.

Senegal urged finding a common ground, suggesting a compilation text containing all the amendment proposals as a way forward. Australia endorsed having the Co-Chairs summarize the positions voiced throughout the week in some sort of paper to help negotiators determine areas of convergence.

Colombia proposed creating a working group to review the baseline, freeze and reduction positions and develop concrete solutions. Saudi Arabia and the US supported continuing discussions in a working group as long as it is in an informal setting. The US reminded participants that OEWG 37 had agreed on outputs on the challenges, which should be considered moving forward, and supported efforts to “crystalize” views on baselines, freeze dates and reduction schedules.

FSM supported discussion in any group that had to report back to the contact group.

The EU, Canada, Saudi Arabia, Australia, and South Africa supported the group. Burkina Faso also supported addressing elements collectively, reflecting that informal groups can be a format for making headway. The EU and Saudi Arabia supported addressing baselines, freeze year and reduction steps as part of a package, with the EU noting that time is passing.

Belarus emphasized that the contact group’s TOR requires discussing two issues not yet addressed: flexibility in implementation; and maintenance of the MLF. He said that these should be discussed in the contact group before an informal group is established, or an additional informal group just on those two issues should be established. China, Kuwait, Pakistan, and others agreed such a group could discuss a range of issues.

India said all discussions on these issues must be conducted in the contact group. Pakistan supported India but expressed flexibility and, supporting Belarus, observed many issues still need to be resolved.

Contact Group Co-Chair Xia noted general support for an informal “setting,” rather than a group, to discuss baselines, freeze and reduction and schedules. India said it could agree to this arrangement if the “setting” would also discuss related issues that remain unresolved following the OEWG 37’s work on
generating solutions, such as technology transfer and intellectual property rights. Contact Group Co-Chair Xia said an informal “setting” would convene at a time to be set by the OEWG plenary and co-facilitated by the Contact Group Co-Chairs.

The “HFC Informal Setting (as part of HFC Management Contact Group)” convened throughout Friday afternoon and Saturday, 22 and 23 July.

A group of non-Article 5 countries put forward a combined proposal with proposed baselines and schedules for Article 5 and non-Article 5 parties.

Responding to questions on the Article 5 baseline, several proponents explained, *inter alia:* the Article 5 baseline level is higher than in the North American proposal; and the proposal aims to address concerns about data availability, including by building in an element of growth. Comparing the new proposal to the Island States’ proposal, one Article 5 party said the baseline level is higher for non-Article 5 parties and lower for the Article 5 parties.

Participants further addressed, *inter alia:* structuring a possible technology review; transitioning limits for industry; and reflecting the economic impact of Article 5 parties using alternatives in proposals. One Article 5 country urged agreement on baselines and schedules, saying his country’s industry needed the CRP’s concept but expressed concern that the TEAP should be given more specific scenarios than the four amendment proposals. Switzerland and Saudi Arabia supported the proposal with proposed baselines and schedules for Article 5 and non-Article 5.

Following the conclusion of the informal setting’s work, Contact Group Co-Chair McInerney reconvened the HFC Management Contact Group on Saturday evening, with discussion focusing on CRPs referred to it by the OEWG. India presented its proposal (UNEP/OzL.Pro.WG.1/38/CRP.2) calling for all ExCom guidelines required by an amendment to be submitted in draft to the parties for their views and input, and the guidelines only to be finalized once they incorporate that input. The CRP was forwarded to MOP 28.

Canada presented a proposal (UNEP/OzL.Pro.WG.1/38/CRP.3) requesting the TEAP to prepare a report for MOP 28’s consideration that would assess the costs and benefits of comprehensive HFC phase-down and take into account the four amendment proposals. Switzerland and Saudi Arabia supported the CRP’s concept but expressed concern that the TEAP should be given more specific scenarios than the four amendment proposals. Australia and the EU suggested it would be helpful to see “the correlation between ambition, costs and benefits.” India said such an analysis would be more meaningful once baseline and phase-down schedules are agreed. McInerney asked interested parties to discuss the CRP on the meeting’s margins.

The Contact Group recommended that UNEP/OzL.Pro.WG.1/38/CRP.4, tabled by Pakistan, asking for the phase-down to stop at 50% for a review, be forwarded to MOP 28.

Pakistan presented a second proposal (UNEP/OzL.Pro.WG.1/38/CRP.6) saying that a decision must be reached on coverage of funding for “additional costs” of mitigation before the amendment negotiations conclude. The US, EU, Canada, and Argentina expressed concerns about the CRP’s language. The Contact Group recommended forwarding it to MOP 28.

Contact Group Co-Chair McInerney then reported on the informal consultations, which took place on Friday and Saturday, and discussed baselines, freeze year and reduction steps. He highlighted the proposal by the EU and the group of Australia, Canada, New Zealand, Norway, Switzerland, and the US (referred to as JUSSCANNZ) on non-Article 5 and Article 5 baselines, freeze years and reduction steps, and observed convergence for baseline calculations on having a range of three consecutive years, expressed in CO2e. He also noted an option had emerged of having two periods that could be selected between or having each party select a three-year point in a range that is appropriate to national circumstances. He outlined the agreement that the baseline would include an HFC component and an, as yet to be discussed, HCFC component, such as a percentage of baseline or actual consumption/production figure. He noted two documents that capture the range of views and options on the table and the EU and JUSSCANNZ proposal.

Mexico, supported by Rwanda, queried whether it would be possible to show a graph reflecting the proposed baselines by a number of Article 5 parties, noting they were still in consultations with the English-speaking Caribbean over a variation of this proposal. He said the new proposal considers the needs of Article 5 parties related to the baseline and accelerated financing. With FSM, he requested the proposal be reflected in the outcome documents, along with an associated graph. Colombia underscored this proposal aims to find a midpoint between some of the Article 5 proposals and requested the opportunity to present it as a package.

The EU welcomed the detailed chart outlining options and associated proposals in the two outcome documents so that ideas are not lost. The US asked to return to informals to allow for elaboration of the proposal.

Contact Group Co-Chair McInerney informed that the rapidly diminishing negotiating time prohibited a return to informals but granted a break so that discussions on the proposal could take place on the margins.

Following these discussions, the US presented a revised document on the proposal for a TEAP report on the costs and benefits of comprehensive HFC phase-down (UNEP/OzL.Pro.WG.1/38/CRP.3/Rev.1) for consideration by the contact group, which she requested be forwarded to ExMOP 3 for its consideration. Co-Chair McInerney confirmed that the CRP would be forwarded to ExMOP 3.

Following this, a number of parties requested additional time for informal negotiations, which was granted. Contact Group Co-Chair Xia re-opened the evening session of the Contact Group at 11:34 pm, by asking for a report from the informal setting. Saudi Arabia reported that the informal setting had produced six different proposals for baselines and freeze dates for Article 5 countries and one for non-Article 5, presented in a chart. Xia suggested that the chart, and the prior one, be submitted to ExMOP as an annex to the meeting report.

Pakistan asked to put the entire chart in brackets, saying there are still issues of equity and parity to discuss. Contact Group Co-Chair Xia replied that it was not a negotiating text, but rather would be an information document annexed to the meeting report that can be referenced going forward.

Belarus, with the Russian Federation, asked for adding a row to the chart to reflect that countries with economies in transition wanted a baseline of 2009-2013, with a freeze in 2020 rather than a reduction step of 10% in 2019.
The US asked for the Secretariat to update its consolidation document to include the results of the informal setting, and either integrate the elements of the solutions document developed by the resumed OEWG 37 in the consolidated document or to draft decision text on the solutions to advance discussion in Kigali. He also suggested authorizing the Secretariat to conduct, subject to the availability of funding, intersessional discussions before Kigali. Iran expressed concern over a possible intersessional meeting.

El Salvador noted that Cuba should be listed with English-speaking Caribbean rather than “like-minded Latin America.” Parties agreed to an additional line reflecting the Belarus and Russian Federation proposal for non-Article 5 parties.

Saudi Arabia opposed the Secretariat developing draft decision text relating to the outcome of OEWG 37 on solutions to challenges, saying parties should discuss this text first. India opposed a decision on this issue, saying it should be treated as an outcome rather than decision.

The Contact Group adjourned at 12:26 am on Sunday morning.

**TEAP 2016 REPORT**

Delegates addressed this agenda item during Monday’s plenary session. TEAP Co-Chair Ashley Woodcock presented the Flexible and Rigid Foams Technical Options Committee (TOC) analysis of challenges in the transition to low-GWP substances in the foam sector. Woodcock also noted that the RAC and Heat Pumps TOC section provides a status report by sub-sector.

Sergey Kopylov, Co-Chair, Halons TOC, provided an update on agents’ development, progress in developing alternatives for military and aviation uses and information submitted in response to decision XXVI/7 regarding information on civil aviation uses. He said the data all provide a single message—the likely supplies of recycled halons may become insufficient to satisfy aviation needs in the near future.

Marta Pizano, Co-Chair, Methyl Bromide TOC (MBTOC), reported on controlled and exempted uses 1999-2014, noting quarantine and pre-shipment consumption has remained stable and that controlled uses still face major challenges, including illegal trade, stocks reporting, and non-reported uses.

Medical and Chemicals TOC Co-Chairs Helen Tope and Jianjun Zhang reported that metered dose inhalers (MDIs) are nearly CFC-free and recommended updating information on 11 process agent uses.

Lambert Kuijpers, Co-Chair, Decision XXVII/5 Working Group, reported on the Working Group’s estimates on the possible need for essential use, servicing or basic needs production of HCFCs after 2020. He said the TEAP concluded that: in RAC and foams, no potential essential uses after 2020 have been identified; HCFC-123 for fire protection may require up to 750 tonnes annually; and small amounts of HCFCs may be needed for laboratory and analytical uses and for solvent uses.

Responding to questions from delegates, TEAP: asked the Russian Federation for a bilateral consultation on MDI data; agreed that TEAP should clarify what it means in the report when saying alternatives in HAT countries look “promising”; asked Tunisia to discuss bilaterally how to handle disposal of methyl bromide cylinders; agreed to an EU request for sideline discussions on illegal trade, stocks reporting and non-reported uses; and explained how TEAP derived its estimates of feedstock emissions.

OEWG 38 took note of the report.

**ISSUES RELATED TO EXEMPTIONS UNDER ARTICLES 2A-21 OF THE MONTREAL PROTOCOL**

Delegates addressed these items in the OEWG 38 plenary on Monday and Thursday.

**NOMINATIONS FOR EUES FOR 2017: OEWG Co-Chair Smith introduced the agenda item on Monday, congratulating parties for achieving the CFC phase-out. He informed that China has requested an EUE for 65 tonnes of CTC for 2017. China provided an update on its efforts towards alternatives. The EU queried why China has not applied the standards described in the TEAP report. Noting that China intends to present a CRP, OEWG Co-Chair Smith said OEWG 38 would return to the agenda item.**

**NOMINATIONS FOR CUES FOR 2017 AND 2018:** OEWG Co-Chair Smith introduced the agenda item on Monday, informing that five parties submitted eight critical use nominations (CUNs) for methyl bromide. Canada, Australia and South Africa provided updates on their nominations and research to find alternatives to methyl bromide. Observing that the MBTOC report states that Canada did not submit the results of a groundwater study, Canada said it submitted the results in August 2015. She further requested the MBTOC to update a text box on pesticide use in Canada, based on information her country provided in March 2016.

Nigeria supported South Africa’s CUN. The EU lauded parties for their progress on phasing out methyl bromide. He welcomed further discussion with the MBTOC and parties in understanding the rationale behind the nominations and recommendations put forward. He urged Argentina and South Africa to submit national management plans prior to MOP 29 to ensure clarity on a way forward once the recommendations and nominations become final.

OEWG Co-Chair Smith encouraged parties and the MBTOC to engage on these issues.

On Thursday, 21 July, OEWG Co-Chair Smith observed that parties had not provided additional information and said these would be considered further at MOP 28.

**ISSUES RELATED TO THE PHASE-OUT OF HCFCs**

OEWG Co-Chair Krajnik introduced this item on Monday in plenary. The EU stated that EUEs should only be allowed in exceptional cases, saying that some servicing needs will still exist. He queried whether the TEAP should be encouraged to continue its work on servicing needs in non-Article 5 countries beyond 2020, saying that it could possibly report back on this issue in 2018 when the TEAP reports on laboratory and analytical procedures that can be performed without using ODS.
The EU, with Australia, stated that there was no need for further production for basic domestic needs. Canada said they will discuss this issue bilaterally. Australia, with Canada, urged maintaining the “servicing tail” and removing the restriction on use in sectors beyond the RAC sector. She further suggested that parties take possible EUEs into account.

Canada also called for EUEs for laboratory and analytical uses beyond 2020, but stated that she does not see a need for EUEs beyond this usage.

Saudi Arabia noted that extensive discussions had been held on the linkages between HFCs and HCFCs during the resumed OEWG 37 session and called for these discussions to be referenced in the TEAP report. OEWG Co-Chair Krajnik confirmed this request will be noted in the OEWG 38 report.

The US stated that the situation should be monitored and encouraged continued cooperation to see if any of the suggested changes need to take place in the near term.

OEWG Co-Chair Krajnik encouraged further consultation on the margins, saying that parties should take the opportunity to develop a CRP, if needed, while all parties are present.

During the OEWG 38 morning plenary session on Thursday, OEWG Co-Chair Krajnik closed this agenda item, noting no CRP on the issue had been submitted.

**AVAILABILITY OF RECOVERED, RECYCLED OR RECLAIMED HALONS**

OEWG Co-Chair Smith introduced this agenda item on Monday in plenary. The EU expressed disappointment with the slow progress made by the aviation industry in phasing out halons and finding suitable alternatives. He urged sending a strong political signal encouraging further progress in this area.

Noting an International Civil Aviation Organization (ICAO) resolution establishing non-mandatory standards for halon use, the EU suggested the Montreal Protocol encourage parties to incorporate these standards into national legislation. He stated that recycled halons should be used for aviation processes to avoid new halon production for use in the near term. He encouraged collaboration among the TEAP, the Secretariat and ICAO on this issue.

Cameroon queried how halons can be recovered and transported for further use.

OEWG 38 took note of the discussion.

**TOR FOR THE STUDY ON THE 2018–2020 REPLENISHMENT OF THE MLF**

Delegates addressed this agenda item in plenary on Monday, Wednesday and Thursday. The contact group met from Tuesday to Wednesday.

On Monday, OEWG Co-Chair Krajnik introduced this agenda item in plenary. Canada, supported by Australia, the EU, Brazil, and Pakistan, suggested using the TOR from previous replenishment studies, as contained in decision XXV/8 (TOR for the study on the 2015-2017 replenishment of the MLF of the Montreal Protocol), as a starting point for discussion. Australia, supported by Samoa and many parties, proposed establishing a contact group, with Samoa suggesting discussion on guidelines where no action has been taken. The US supported a robust, well-grounded estimate from the TEAP on resource needs for the MLF. Belarus proposed the TOR include a paragraph on ensuring that the three-year replenishment corresponds to the UN scale of assessments.

Brazil, supported by the US and FSM, recommended including a provision for possible early action that parties might take on HFCs.

OEWG Co-Chair Smith confirmed establishment of a contact group that will use the previous TOR as a starting reference.

The contact group met for the first time on Tuesday, nominating Philippe Chemouny (Canada) and Obed Baloyi (South Africa) as its Co-Chairs. Parties discussed draft text based on the TOR for the study on the 2015-2017 MLF replenishment contained in Annex III of UNEP/OzL.Pro.WG.1/38/2/Rev.1. Parties agreed to, *inter alia*, update references to the relevant MOP and ExCom meetings and update the replenishment period in question.

On allocating resources to enable Article 5 parties to maintain compliance, parties discussed a placeholder to reflect a possible HFC amendment. They agreed to place brackets around text on dividing funding relating to HCFC production and consumption equally between the 2015-2017 and 2018-2020 replenishment. They also addressed: allocating resources to activities in the servicing sector in HCFC Phase-out Management Plans (HPMPs); and referencing the UN scale of assessments.

On providing indicative figures for additional resources to enable Article 5 parties to gradually avoid high-GWP alternatives to ODS, one non-Article 5 party proposed adding “and the key issues related to funding being considered by the parties” as placeholder text for an HFC amendment. Another suggested adding: “provide information on methodology and cost calculation associated with expanding the list of eligible costs in the servicing sector when phasing down HFCs.” Following discussion, parties agreed that text related to an HFC amendment should be separate from text addressing the HCFC phase-out.

During Wednesday’s contact group meeting, parties made additional updates to the text. Participants also discussed, *inter alia*, the relationship with a possible HFC amendment and whether to reference Stage Three HPMPs. Participants agreed to leave bracketed text for discussion by the MOP.

During Thursday morning’s plenary session, Contact Group Co-Chair Baloyi said the group finalized a submission for MOP 28’s consideration. He noted a discussion on the UN scale of assessments needed to be resolved outside the group. Co-Chair Smith recommended participants address this issue in the meeting margins.

OEWG 38 forwarded the draft decision to MOP 28 for its consideration.

**TEAP AND SAP REPORT ON ANALYSIS OF THE DISCREPANCIES BETWEEN OBSERVED ATMOSPHERIC CONCENTRATIONS AND REPORTED DATA ON CTC**

OEWG Co-Chair Smith introduced this item during the OEWG 38 plenary on Monday. Paul Newman, Scientific Assessment Panel (SAP), informed that a report on the issue is available electronically and the SAP will present the full report at MOP 28.

OEWG 38 took note of the report.
DESTRUCTION OF ODS BANKS

On Monday, OEWG Co-Chair Krajnik introduced this agenda item, reminding delegates that Article 5 parties raised the issue at MOP 27 and agreed to discuss it at an OEWG in 2016.

Samoa said that, with the continued storage of ODS without proper destruction, stocks continue to build up and may lead to accidental venting, thus causing harm to the environment. She noted that this situation poses particular challenges for Article 5 parties, including as a result of insufficient capacity and inadequate infrastructure. She underscored that with an HFC phase-down, stockpiles of HFCs could further exacerbate the situation. She said that Samoa recognizes that decisions have been taken allowing for requests for assistance to be made through the ExCom, among others, and noted that the issue is also addressed in the Dubai Pathway on HFCs. Noting that a CRP will not be submitted, she requested keeping the agenda item open so that the issue can be discussed and requests for assistance can be made.

The EU recognized the challenges this issue poses, particularly for least developed countries (LDCs) and small island developing states (SIDS). With Samoa, she said that lessons can be learned from current activities. She also underscored opportunities for synergies with other chemicals agreements and agencies, which can contribute to further progress. She suggested that the Secretariat engage with these secretariats and agencies by elaborating on potential synergies.

OEWG Co-Chair Krajnik closed the agenda item, suggesting further bilateral discussion on the matter.

TEAP ORGANIZATIONAL MATTERS

Delegates addressed this agenda item on Tuesday and Thursday in plenary.

On Tuesday, OEWG Co-Chair Krajnik noted the need for more TEAP members and the submission of a nomination by India. He asked parties to discuss possible nominations with TEAP on the meeting’s margins, saying the OEWG would return to the matter later in the week.

On Thursday, observing no CRP had been submitted, OEWG Co-Chair Krajnik noted this would be further discussed at MOP 28 and closed the agenda item.

OTHER MATTERS

OEWG Co-Chair Leslie Smith introduced the Chinese proposal to establish an ad hoc coordination group on standards in plenary on Tuesday. Discussions took place on Wednesday and Thursday.

China presented its proposal on an ad hoc coordination group on standards (UNEP/OzL.Pro.WG.1/38/CRP.1). Noting revisions of international standards will have important implications for an HFC phase-down, she said the proposed group could discuss this with relevant standardization organizations and update parties on these revisions. She noted the CRP calls for a workshop on standardization in 2017.

Switzerland and India supported the CRP. Burkina Faso, the EU, the US, Japan, Canada, and Venezuela said it was a good basis for further discussion. Saudi Arabia expressed concern that the CRP might seek to lower international safety standards. Kuwait and Bahrain called for ensuring the CRP does not compromise safety. OEWG 38 Co-Chair Smith suggested delegates take time to examine the CRP before deciding on how to proceed.

During informal group discussions, parties welcomed the intent of the CRP on establishing a standards coordination group, but several raised concerns about modalities, particularly creating a new group. Some suggested that existing Protocol institutions, such as the Secretariat and TEAP, could perform the tasks. All welcomed the idea of a 2017 workshop, subject to funding availability. Most welcomed some type of interface with international and regional standards bodies and helping national ozone officers liaise with national standards bodies. Several parties asked for further reflection on modalities, perhaps intersexitionally prior to addressing it at MOP 28.

CLOSING PLENARY

OEWG Co-Chair Krajnik introduced the report of the meeting (UNEP/OzL.Pro.WG.1/38/L.1) on Thursday, which was adopted. He then suspended OEWG 38 at 5:45 pm for the purpose of enabling further negotiations on the agenda item on the Dubai Pathway on HFCs.

EXMOP 3 REPORT

MOP 27 President Virginia Poter (Canada) opened ExMOP 3 on Friday, 22 July, noting progress made at the preceding OEWGs. She urged all participants to “seize the moment,” bridge differences and forge consensus between Article 5 and non-Article 5 parties to develop a roadmap on how to proceed to Kigali.

Andrä Rupprechter, Federal Minister of Agriculture, Forestry, Environment and Water Management, Austria, noted that, while the Montreal Protocol has helped heal the ozone layer, it has concomitantly created a global climate change challenge. He urged forging a global agreement on HFCs with strong science, incentives for compliance and a commitment to equity.

Li Yong, Director-General, United Nations Industrial Development Organization (UNIDO), said that the Protocol’s accomplishments would not have been possible without strong partnership among the UN agencies, the MLF, World Bank, and Global Environment Facility (GEF). He underscored UNIDO’s role in implementing 35% of MLF-funded projects. He urged negotiators to work in the “convivial and decisive manner that the Montreal Protocol is known for, since the outcome of this meeting will have a profound effect on the future of the climate regime.”

Ibrahim Thiaw, Deputy Executive Director, UNEP, cautioned that continuing to debate the differences in approaches to a possible amendment could cancel out the climate benefits of an ODS phase-out. He urged choosing to go down the Dubai Pathway on HFCs and taking decisive steps to secure a turning point at MOP 28.

The ExMOP adopted the agenda (UNEP/OzL.Pro. EXMOP.3/1) and approved the organization of work.

REPORT OF THE CREDENTIALS COMMITTEE: On Saturday, 23 July, the Secretariat reported that the Bureau had examined the credentials presented by 150 parties and found 93 in good order, including those being submitted by the head of state, government or foreign minister. The Secretariat requested those parties with credentials not in proper order to resubmit
DUBAI PATHWAY ON HFCs

MINISTERIAL ROUND TABLE: “MOVING FORWARD TO DELIVER IN 2016 ON THE MANDATE OF THE DUBAI PATHWAY ON HFCs”
Moderator John Barkat, UN Assistant Secretary-General and UN Ombudsman, opened the session on Friday, 22 July, asking parties to discuss what the ExMOP needs to do to ensure implementation of the Dubai Pathway on HFCs.

Rajani Ranjan Rashmi, Additional Secretary, Ministry of Environment, Forest and Climate Change, India, recommended putting low-GWP technologies to use to ensure national economies’ development. He called for ensuring a cost-effective transition that avoids double conversions and addresses licensing cost issues to ensure a robust support process.

Catherine McKenna, Minister of the Environment and Climate Change, Canada, called for leaving the ExMOP with a simple text that addresses key issues, by narrowing the gaps between options in a way that balances the need for ambitious schedules while avoiding undue hardship.

Mohamed Mubarak Bin Daina, Chief Executive, the Supreme Council for Environment, Bahrain, said the Indian amendment proposal for Article 5 parties, with some modifications, would be acceptable to most.

Gina McCarthy, Administrator, US Environmental Protection Agency, emphasized relying on the “tried and trusted” MLF, saying that ambitious commitments to phase down HFCs will be matched by support to find cost-effective solutions.

Ibrahim Jibril, Minister of State Environment, Nigeria, called for funding for regional and national demonstration projects to identify alternatives and for destruction and disposal of stocks.

Nur Masripatin, Director General, Climate Change, and National Focal Point for ODS, Ministry of Environment and Forestry, Indonesia, supported capacity building for technicians in the manufacturing and servicing sectors.

Miguel Arias Cañete, European Commissioner for Climate Action and Energy, recommended combining the best elements of each amendment proposal to reach agreement in Kigali and urged sending an early policy signal on phasing down HFCs. He said the EU is flexible on the terms, but negotiations must result in solutions to challenges.

During OEWG 38, he said that discussions had continued on baselines, freeze dates and phase-down schedules, with a variety of options related to the HFC baseline discussed and captured in a document that will be attached to the meeting report. He noted the group also considered four CRPs submitted by India, Canada and the US, and two by Pakistan, underscoring that full consideration of these CRPs had not been undertaken and that they would be forwarded for further consideration. He noted a further request still under discussion for the Secretariat to convert the solutions document into decisional text, noting no agreement at the time of the contact group’s conclusion.

MOP 27 President Poter thanked McInerney for his report. She noted that the proposal by the US and Canada for a TEAP to MOP 28 assessing climate benefits and MLF financial implications of proposed HFC phase-down schedules had been revised and submitted to the ExMOP. Delegates adopted the draft decision.

She then noted recommendations by the Contact Group and OEWG to: annex the resumed OEWG 37 text on solutions to the challenges in the Dubai Pathway as an annex to the meeting report; and Article 5 parties want “crystal clear” amendment provisions on baselines, freeze, phase-down and funding.

GENERAL DEBATE: The ExMOP 3 General Debate took place on Friday and Saturday, 22-23 July 2016.

John Kerry, US Secretary of State, said amending the Protocol to phase down HFCs is one of the single most important unitary steps that the world can take to address climate change. He said...
the US, the Group of 7 (G7) and Nordic countries, or about 75% of the MLF donor base, have promised to provide additional funding to help developing countries implement an HFC amendment.

Many parties described national efforts to phase down ODS usage, including Burkina Faso, Cameroon, Dominican Republic, Myanmar, the Philippines, and Tunisia. Mexico noted recent pledges by North American leaders to reduce HFCs and stressed it does not support schedules starting far in the future, explaining this delay would inhibit technological transformation.

Rwanda called for developing a draft text as the basis for HFC amendment negotiations in Kigali.

Slovakia, for the EU, said the EU is ready to provide additional MLF resources for HFC amendment implementation and remains open-minded about amendment provisions.

Guatemala called for adopting an HFC amendment as soon as possible, with a baseline for Article 5 parties of 2016-2018, and a freeze in 2022 or 2023. Côte d’Ivoire favored the adoption of an HFC amendment in 2016 that takes into account challenges faced by Africa.

Ethiopia underscored that HFCs should be limited across the world, noting their ambition to reduce 64% of GHG emissions by 2030 from a 2010 base year.

Nigeria observed major milestones towards consensus, noting the need to flesh out details on, inter alia, intellectual property rights.

Haiti asked parties to bear in mind the special circumstances of SIDS as ODS importers.

Canada reiterated the need for concrete text with options on baselines, freeze dates and schedules for all parties.

India emphasized the need for national flexibility in defining the phase-down schedules and substantially augmenting resources for the MLF.

Norway urged working to find a solution for an amendment that includes a fast and ambitious phase-down of HFCs.

Bangladesh stressed that the MLF will need to support countries in finding suitable alternatives to HFCs in a number of sectors. Kenya highlighted that alternatives should be evaluated holistically so that they do not solve one environmental problem to the detriment of other environmental, social, health, and safety aspects.

Japan said that parties should, to an extent, be able to decide if they continue to use HFCs in certain sectors, within an allowed level determined by the amendment.

Senegal, with Zimbabwe and Sudan, said that technology transfer, capacity-building support and awareness raising for an HFC phase-down are key.

Afghanistan called for the WCO to establish a specialized category for HFCs and products using HFCs.

Venezuela stressed the current global crisis is due to the capitalist system and urged the Montreal Protocol to remain at the political vanguard through an HFC amendment.

Argentina noted the need to avoid reconverters of enterprises and ensure flexibility on technologies and additional financing.

China underscored the need for technical solutions that are robust and viable and said they are ready to work with the international community towards an amendment based on CBDR.
the long meetings made tentative steps towards an amendment but did not produce the bold or decisive move that some had hoped.

This brief analysis takes stock of the resumed OEWG 37, OEWG 38 and ExMOP 3, reflecting on progress made on the Dubai Pathway on HFCs, particularly on financing and baselines, and considering the next steps towards Kigali and the HFCs amendment. It examines how the constant shift in modalities through the series of three meetings shaped progress in Vienna, assesses in the end whether the return “home” to Vienna provided the necessary momentum and inspiration to reach an amendment and considers the best path forward to keep the promise of adopting an amendment in Kigali alive.

**PRESSURE TO DELIVER?**

The Dubai Pathway on HFCs set the Montreal Protocol solidly on the road to addressing HFCs in 2016, a historic year for both efforts to protect the ozone layer and to address climate change. Fresh off the signing of the Paris Agreement on Climate Change and news that multilateral efforts to protect the ozone layer are beginning to substantially repair the ozone hole, hopes for the meetings in Vienna were high; as some put it, there was simply no better time.

Many arrived in Vienna with mandates to secure sufficient progress to ensure that an amendment could be adopted in 2016. Furthermore, participants recognized that the Dubai Pathway specifically states that parties agree to work towards an amendment in 2016. With MOP 28 less than three months away, many observed that the discussions in Vienna represented a “make or break” moment.

Most expressed general optimism that the technical discussions were finally taking place, at least at the beginning of the meetings. Furthermore, the general tone of the meeting has returned, on the whole, to a collegial, familial feel, with parties listening to the perspectives of others and expressing respect for different opinions and perspectives.

More than one proposal proponent stated a willingness to remain flexible and adjust baselines and freeze dates, depending on the preferences of others. The EU, for instance, said it had “listened carefully to delegations and heard very few, if any” supporting its “basket approach.” The EU then demonstrated its willingness to put the harmony of the ozone family, and indeed the planet’s well-being, first by moving away from their proposal to allow parties to choose from a “basket” of gases and supporting a common approach forward. Such flexibility played a key role in helping the negotiations to continue moving forward, even at moments when complete standstills seemed possible.

“Finance is the lynchpin,” Ozone Executive Secretary Tina Birmpili observed at the opening of OEWG 37, urging delegates to agree on finance as a matter of priority so that discussions on any proposed amendment could move forward on the technical issues. It took until after 2:00 am, Sunday, 17 July, for participants to agree on finance, but members of the informal group emerged victorious, telling OEWG 37, “We have a solution to this challenge!” Although agreement on a few issues, including eligible costs in the servicing sector, were deferred, the Vienna solutions for challenges on funding issues and flexibility of implementation agree on a number of overarching principles and timelines, and provide guidance to the ExCom on incremental costs, particularly in the consumption manufacturing and production sectors. This agreement allowed delegates to continue the approach of “locking down progress” by capturing small but concrete aspects of an amendment text, similar to the way in which parties reached agreement on the HAT exemption text in Geneva, which has not been re-opened.

By all accounts, however, the eight-days of meetings took their toll on delegates, with one insider explaining, “Delegates are tired. They’ve been working into the night, not only here, but for years, it seems.” While many felt initially energized by a concrete step forward on finance at the end of the extended OEWG 37 session, the expected momentum toward reaching agreement on the solutions to challenges quickly dissipated.

OEWG 38 opened with a “backlash against the marathon session,” with the majority of participants expressing a strong desire to reign in the late-night, open-ended sessions. OEWG 38 then proceeded at a calm pace, perhaps too slow for real progress. As one seasoned diplomat reminded participants, however, “Negotiations are not fast.” Still, those participants who arrived in Vienna hopeful that the series of meetings could develop draft text on all the elements of an amendment downgraded their expectations as the meetings progressed, with some delegates expressing unhappiness with the pace and lack of progress.

Following general agreement on HFC challenges and solutions, participants shifted gears to address key elements of a proposal at OEWG 38, with parties openly stating their preferences on various baselines, freeze dates and reduction schedules. This discussion represented the first time that Montreal Protocol parties went beyond a discussion of whether to even discuss HFCs, a topic that consumed several years, and then beyond addressing challenges, which consumed discussions in Dubai and Geneva, and instead engaged in a real back-and-forth on details. This exchange initially appeared to represent real progress in moving towards consolidated text—or at least recognition of the divergence of views among parties. Despite this open discussion, delegates were unable to reach agreement on an outcome in time for ExMOP 3 and, instead, were forced to suspend OEWG 38, leaving more than one delegate to grumble over whether the Protocol was setting a new precedent of “constantly suspending its sessions.”

Optimism on progress ebbed and flowed throughout OEWG 38 and ExMOP 3. The presentation of a compromise amendment by the EU, Australia, Canada, Japan, New Zealand, Norway, Switzerland, and the US at first seemed to represent a possible way forward and a chance to “save the meeting” by giving delegates a new text to possibly rally behind. However, the 25% HCFC baseline for Article 5 and non-Article 5 parties in this proposal puzzled many, who asked for clarification on its logic, and angered a few, who felt that their Article 5 baseline had become smaller. The proponents hastened to say that the intention was not to make the situation more difficult for Article 5 countries but rather to increase the Article 5 baseline.

The proposal, and a second compromise proposal presented by the African Group and some members of the Latin American and Caribbean Group, ultimately caused a split among Article 5 parties, with some openly supporting the proposals and urging
action, some expressing a willingness to work on compromise text but questioning whether this text represented the best way forward, and a few parties vehemently opposing to work with this text. Some delegates expressed surprise at the divergent views that emerged from Article 5 parties, with countries grouping themselves as proponents of six different baselines and freeze dates, some of which have not previously been seen at the Montreal Protocol: Gulf Cooperation Council; China and Pakistan; India; the African Group, Pacific Island Countries, Latin America Like-Minded, EU and JUSSCANZ; Malaysia, Indonesia, Brazil, Argentina, English-speaking Caribbean and Cuba; and Iran. These baselines and freeze dates were captured in a table that will be forwarded to MOP 28 as an informal document.

“We underestimated the complexity of baselines for Article 5 parties,” one seasoned delegate reflected, observing that agreements on baselines were harder to achieve than many had predicted. The informal setting and the Contact Group, which initially hoped to resolve baselines, freeze dates and reduction schedules, barely reached an agreement. The table resulted in an increase of baselines and freeze date options for Article 5 parties and a decrease in options for non-Article 5 parties, compared with the initial four proposals. This table represents, as one delegate put it, “half a step forward.”

One of the more optimistic proponents underscored wide agreement on the baseline of 2017-2019 for Article 5 parties, pointing out that the African Group, Pacific Island countries, 14 Latin American like-minded countries, the EU, and the JUSSCANZ group represents 121 parties. Several expressed concern, however, about the proposals by Iran, India, and China and Pakistan, pointing out that freeze dates of 2029, 2031, or 2025-2026, particularly for large producing countries, is not a reason for optimism. Another insider agreed, saying the baselines and freeze dates do not represent real ambition, lamenting that an amendment will not achieve the hoped-for climate objective.

The Dubai mantra, “nothing is agreed until everything is agreed,” means that all the elements of a proposal must come together as one single package. A few delegates pointed out that parties are tackling the most difficult elements first, predicting that “agreements will become easier and easier as we move through the remaining sets of issues.” Still, by many accounts, negotiators who arrived in Vienna hoping the July meetings would result in a negotiating text for an amendment did not achieve their goal. Many unanswered questions regarding phase-down schedules, phase-down targets, technology transfer and a possible technology review, intellectual property rights, legal synergies, and more details on financing, such as funding for additional import costs and incremental costs for some sectors, remain unaddressed or unresolved.

**RENDERING AN ACCOUNT**

“We have a clear signal that we will have an amendment in 2016,” one tired participant said as the negotiations in Vienna reached their conclusion. “Now, we’re just fighting for the content,” explained another, saying “It’s one thing to have an amendment, it’s another thing to have an ambitious amendment.” As another party put it, “We’re not willing to agree to an amendment at any cost.” Indeed, as another noted, the real danger is reaching agreement on an amendment that is not ambitious enough to phase down HFCs to an ambitious-enough level and make a real contribution to climate change mitigation.

As negotiators reflect on how to move forward, it became clear during the series of meetings that a long session of back-to-back meetings may not be an effective approach, with some pointing to the challenge of constantly shifting modalities and the down-time that results from commencing and concluding the rapid succession of meetings. While several pointed to OEWG 37’s agreement on financing, one of the final remaining challenges outlined in the Dubai pathway, as the highlight of this series of meetings, delegates lost their momentum and footing as OEWG 38 turned to more technical discussions for which more than a few delegations appeared unprepared, with some requesting more time to consider baseline dates for their national circumstances and others openly admitting their confusion in statements from the floor.

“We lacked a strategy for how to move forward,” one negotiator reflected, explaining that delegates had focused so much on achieving solutions to the challenges that they had failed to set short- and medium-term negotiating goals along the road to an amendment. The absence of such a strategy, combined with the backlash against marathon sessions, resulted in participants not putting in the hours early in the week during OEWG 38, reaching Saturday without any clear agreement and leaving a few committed proponents to scramble to emerge with some sort of substantive outcome from OEWG 38.

Absence of a clear negotiating text, which many had hoped to emerge in Vienna, makes the path to a Kigali amendment much more challenging. Delegates needed such a text, mapping out all the possible options, to return to their capitals and assess what the numbers mean and figure out their preferences. However, without such a text, they must instead try to intuit the landscape of a possible amendment from a morass of less formal outcomes. Unfortunately, this situation means that negotiators arriving in Kigali have to prepare themselves for far more contingencies and maybe even have to understand options that may not even be on the table yet.

However, “there is no Plan B.,” a seasoned insider reflected, tiredly questioning if and how delegates can continue to hammer out the details of an amendment to achieve their 2016 deadline. Parties left Vienna wondering how to best undertake their homework and whether further intersessional meetings would take place as several requested. It was clear to many, however, that the return to the ozone regime’s historical home in Vienna, while prefaced by successful first steps at the end of the extended OEWG 37, had not provided the necessary momentum toward agreement on an amendment in Kigali as originally hoped. The challenge then is to refocus during the intersessional period and ensure that each party arrives at MOP 28 equipped with both the ambition and an understanding of how each possible proposal will affect them in order to make Kigali the home of the HFC amendment.
UPCOMING MEETINGS

Twelfth Gustav Lorentzen Natural Working Fluids Conference: This conference will address fundamental issues about what the vision for the future of natural working fluids in 2016 and beyond should be and will encourage the development of the industry’s thinking about how natural refrigerants are used. Themes will include issues regarding: natural working fluids; sustainability with natural working fluids; and alternative cycles. dates: 21-24 August 2016 location: Edinburgh, UK contact: Institute of Refrigeration phone: +44-20-8647-7033 email: gl2016@ior.org.uk www: http://www.ior.org.uk/GL2016

Quadrennial Ozone Symposium 2016: The next Quadrennial Ozone Symposium will include scientific papers on all aspects of atmospheric ozone such as: tropospheric ozone; past and future budgets and trends and long-range transport; observations and budgets of trace constituents related to atmospheric ozone; and ozone chemistry, sources, sinks, and budgets. dates: 4-9 September 2016 location: Edinburgh, UK contact: Dr. Stefan Reis, Chair, Local Organizing Committee email: srei@ceh.ac.uk www: http://www.ozone-symposium-2016.org/

Twelfth Meeting of the Rotterdam Convention Chemical Review Committee (CRC-12): The CRC will convene to consider, inter alia: notifications for atrazine, and decision guidance documents for carbosulfate and carbofuran. It will also consider notifications found to meet Annex I criteria. dates: 14-16 September 2016 location: Rome, Italy contact: BRS Secretariat phone: +41-22-917-8729 fax: +41-22-917-8098 email: brs@brsmeas.org www: http://www.brsmeas.org

Twelfth Meeting of the Persistent Organic Pollutants Committee (POPRC-12): POPRC-12 will convene to consider, inter alia: the draft risk profiles for dichofol and perfluorooctanoic acid (PFOA); further information related to Annex F for decabDDE; and the draft risk management evaluation for short channel chlorinated paraffins (SCCPs). dates: 19-23 September 2016 location: Rome, Italy contact: BRS Secretariat phone: +41-22-917-8729 fax: +41-22-917-8098 email: brs@brsmeas.org www: http://www.brsmeas.org

ICEF 2016: The Innovation for a Cool Earth Forum (ICEF) 2016, hosted by the Government of Japan, is being held with a view to address climate change through innovation. The Forum will bring together policymakers, business leaders and researchers for “an energy- and environment-focused version of the World Economic Forum.” dates: 5-6 October 2016 location: Tokyo, Japan contact: ICEF Secretariat email: icef-reg@congre.co.jp www: http://www.icef-forum.org/


28th Meeting of the Parties to the Montreal Protocol: MOP 28 is scheduled to consider a number of issues, including HFCs management and nominations for critical- and essential-use exemptions. OEWG 38 may reconvene prior to MOP 28, subject to the availability of funds. dates: 10-14 October 2016

GLOSSARY

CBDR  Common but differentiated responsibilities
CFCs  Chlorofluorocarbons
CO2e  Carbon dioxide equivalents
CRP  Conference Room Paper
CTC  Carbon Tetrachloride
CUE  Critical-Use Exemption
EUE  Essential-Use Exemption
ExCom  Executive Committee
ExMOP  Extraordinary Session of the Meetings of the Parties
FSC  Federated States of Micronesia
GWP  Global warming potential
HAT  High ambient temperatures
HCFCs  Hydrochlorofluorocarbons
HFCs  Hydrofluorocarbons
LDCs  Least developed countries
MBTOC  Methyl Bromide Technical Options Committee
MLF  Multilateral Fund
MOP  Meeting of the Parties
ODS  Ozone-depleting substances
OEWG  Open-Ended Working Group of the Parties to the Montreal Protocol
RAC  Refrigeration and air conditioning
SAP  Scientific Assessment Panel
SIDS  Small island developing states
TEAP  Technology and Economic Assessment Panel
TOC  Technical Options Committee
TOR  Terms of reference
UNEP  UN Environment Programme
UNFCCC  UN Framework Convention on Climate Change
WCO  World Customs Organizations