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SUMMARY OF THE THIRTY-SEVENTH MEETING OF THE OPEN-ENDED WORKING GROUP OF THE PARTIES TO THE MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER: 4-8 APRIL 2016

The thirty-seventh meeting of the Open-Ended Working Group (OEWG 37) of the parties to the Montreal Protocol on Substances that Deplete the Ozone Layer convened in Geneva, Switzerland, from 4-8 April 2016. Over 350 participants representing governments, UN agencies, Montreal Protocol expert panels and committees, non-governmental organizations, and industry attended the meeting.

At OEWG 37, delegates heard an update on the Technology and Economic Assessment Panel (TEAP) on alternatives to ozone depleting substances (ODS). The rest of the meeting was dedicated to the work of the Hydrofluorocarbon (HFC) Management Contact Group and the mandate outlined in the Dubai Pathway on HFCs.

Delegates made slow and steady progress throughout the week, with many lauding discussions for moving from a general nature to addressing specific challenges. Although the contact group was not able to complete its mandate, a sense of optimism remained after the closing session with expectations that the next round of negotiations would continue to make significant progress and provide concrete steps towards adopting an amendment on HFC management in 2016.

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 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.

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,

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as well as carbon tetrachloride 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 clearinghouse functions. The Fund is replenished every three years.

COPENHAGEN AMENDMENT AND ADJUSTMENTS:

At MOP 4, held in Copenhagen, Denmark, in 1992, delegates tightened existing control schedules and added controls on methyl bromide, hydrobromofluorocarbons and hydrochlorofluorocarbons (HCFCs). MOP 4 also agreed to enact non-compliance procedures. 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 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 for the 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 service 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 of RC-316c, a chlorofluorocarbon 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 amendment of the Montreal Protocol to include HFCs.

MOP 25: MOP 25 was held in Bangkok, Thailand, in 2013. The MOP adopted 21 decisions, including on: terms of reference 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 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. It adopted a number of substantive and procedural decisions. Substantive decisions included: essential-use and critical-use exemptions; avoiding the unwanted import of products and equipment containing or relying on HCFCs; and a TEAP report on ODS alternatives. Procedural decisions addressed on the budget and membership of Montreal Protocol bodies for 2015.

The two-day resumed session of OEWG 36 had agreed on a mandate for a contact group on the feasibility and ways of managing HFCs. The contact group was established at MOP27 and met throughout the week. Following protracted negotiations that concluded in the early hours of Friday morning, parties agreed to and adopted the Dubai Pathway on HFCs; this agreement included provision for an additional OEWG meeting and an extraordinary MOP (ExMOP) in 2016.

OEWG 37 REPORT

On Monday morning, 4 April 2016, OEWG 37 Co-Chair Paul Krajnik (Austria) opened the meeting. Tina Birmpili, Executive Secretary, Ozone Secretariat, led delegates in one minute of silence for the late Mostafa Tolba (Egypt). Recognizing his "groundbreaking work" to bring the Vienna Convention for the Protection of the Ozone Layer to life as UNEP Executive Director, she stated that it was a privilege to work closely with such a visionary person.

Noting that there was only one item on the agenda, Birmpili urged delegates to move forward on the implementation of the Dubai Pathway on HFCs. She underscored the need to bridge different perspectives and legitimate concerns to reach a common understanding on, *inter alia*: the need for flexibility; second and third stage conversions; capacity building; the MLF as the funding mechanism; the relationship between HFC phase-down and HCFC phase-out; and the need for safe, energy efficient HFC alternatives. She highlighted two important issues: intellectual property concerns for developing country industries;

and the need to ensure legal synergies between the climate and ozone regimes. She pointed to a background document on the issue, on which the UN Framework Convention on Climate Change (UNFCCC) was consulted.

OEWG 37 Co-Chair Leslie Smith (Grenada) explained the organization of work, underscoring that much of the time would be spent in the Contact Group on the Feasibility and Ways of Managing HFCs (HFC Management Contact Group). He said the contact group would continue to be co-chaired by Patrick McInerney (Australia) and Xia Yingxian (China).

Jordan, with the Russian Federation, Kuwait, Côte d'Ivoire, Egypt, Senegal, Kenya, Syria, Morocco, Iraq, and Mauritania, underscored the importance of simultaneous interpretation during the contact group discussions to increase the understanding and participation of all parties. Co-Chair Smith confirmed that interpretation would be provided, within normal meeting hours. He further suggested, as proposed by Kuwait, that interpretation be addressed on a case-by-case basis for future meetings.

Jordan and others reiterated their request, noting that parties are discussing major issues with major consequences and full participation is necessary.

Pakistan asked who was welcome in the contact group. OEWG 37 Co-Chair Smith responded that it was open to all participants.

REPORT BY THE TEAP ON INFORMATION ON ALTERNATIVES TO ODS

On Monday, OEWG 37 Co-Chair Smith introduced the agenda item on Report by the TEAP on information on alternatives to ODS.

TEAP Co-Chair Bella Maranion (US) presented the report. She explained that reliable data for business-as-usual and mitigation scenarios are available for the refrigeration and air conditioning (RAC) sector but limited for other sectors; consequently, the OEWG 37 report only addresses RAC. She said the TEAP will prepare a second report for OEWG 38, based on OEWG 37 discussions and information available on refrigeration in fishing vessels in small island states and additional scenarios, and a final report for MOP 28.

TEAP member Lambert Kuijpers (the Netherlands) presented key updates and issues for refrigerants, saying 15 new fluids have been introduced since September 2015, all of which are blends. He outlined parameters, such as system configuration and operating conditions, which influence energy efficiency.

TEAP member Roberto Peixoto (Brazil) shared test results from high-ambient temperature (HAT) conditions. He highlighted: difficulties in comparing HAT project results; new refrigerants showing promise in meeting RAC equipment requirements for operation under HAT conditions; the need for a comprehensive risk assessment for flammable alternatives at HAT installations, servicing and decommissioning; and commercial availability of new refrigerants and optimization components of RAC equipment that will affect transitions.

Concluding, Kuijpers stressed that the results show the impact of an earlier start and a rapid conversion, underscoring that delaying and/or extending the conversion for the dominant

stationary AC sector significantly increases the overall climate impact.

In the ensuing discussion, a number of parties asked for clarification on the report. Egypt sought clarity on how the 15 proposed alternatives could replace HFCs. Switzerland, with the European Union (EU), queried additional comparison information between chlorodifluoromethane (R-22) and R-410A as potential alternatives to HFCs. He further requested more detail on the high economic costs of system modification, and asked about past costs and experiences. Noting that many replacement refrigerants still have high global warming potential (GWP), he queried how these replacements would assist in reaching an 85% reduction of global GWP.

Switzerland, with Pakistan, Canada and the EU, and welcomed by the TEAP, suggested creating a matrix referencing, *inter alia*, all refrigerants being tested, the types of equipment they are suitable for, the potential of improvement for each of the refrigerants, and how improvements could be made.

Jordan asked for more information on the percentage of alternatives available and questioned whether project testing for suitability in Article 5 countries would be able to fully assess the range of questions being asked.

India queried the baseline figures from which reductions or increases would be measured.

Lesotho noted that the economic efficiency of alternatives is not yet clear and asked how this lack of clarity would impact progress.

The US sought explanation on the consistency of comparison between alternatives. She also called for the TEAP to consider how best to reflect change in regulatory and legal regimes, as well as industrial change.

The TEAP responded that they do not develop or produce new knowledge or results, which is why there is no comparison between R-22 and R-410A. He further noted that only 15 fluids had been mentioned, as these were included subsequent to the last report update, having been proposed by the chemical and refrigerant industry and/or are potential natural refrigerants. He said that many of these are not yet commercial, but that they have potential for the future.

Regarding low-GWP substances, the TEAP said that there is no "magical limit or number," which dictates where a substance should be replaced with a low-GWP substance. The TEAP also said that its role is not to make subjective claims on what is, or is not, feasible and possible. He further noted that the components of the machinery would have to change if the refrigerant changes, which affects economic efficiency.

Pakistan, supported by Kuwait, asked for additional information about costs, noting that some systems will have to be redesigned. The TEAP responded that the cost dimension would be further addressed. Saudi Arabia suggested the TEAP take a closer look at safety concerns and noted their preference for a comprehensive risk assessment on HFC alternatives. He questioned whether energy efficiency potential is limited by cost.

China addressed, *inter alia*: technology comparisons and safety standards for different RAC sectors, noting variation in

the volumes and the use of different refrigerants; feasibility of achieving different scenarios in short time periods; and the need for clarifying the availability of HFC alternatives in HAT zones.

The TEAP said that the scenario timelines are arbitrary, conducted as a mathematical exercise, and include a number of parameters. Regarding HFC alternatives in HAT zones, he said that initial studies are promising.

Burkina Faso underscored the need for better explanation of costs related to market penetration, in particular within the African region. Sierra Leone asked the TEAP to discuss toxicity and health implications of HFC alternatives.

Stating that the discovery of radically different refrigerants is unlikely, Norway asked whether not-in-kind alternatives—alternatives that achieve the same product objective without the use of halocarbons, typically with an alternative approach or unconventional technique—would be more comprehensively addressed. The TEAP confirmed that the next version of its report would do so.

The US highlighted the report's finding that delaying action on HFCs will result in significantly greater impacts. The EU highlighted the TEAP's finding that a rapid conversion will have the greatest environmental impact, calling for swift action.

Indonesia said her country should be categorized as a HAT country, and called for an extensive study on the circumstances of HAT countries, a comprehensive risk assessment on alternatives, and the development of training systems on costs and certification.

The EU observed that the report comprehensively addresses chemicals, but does not provide sufficient detail on other technologies. On flammability and standards, he called for updating relevant standards and ensuring that work in standardization bodies is technologically neutral.

In response to questions by India, the TEAP explained, among others, that it examines the amount of refrigerants and fluids available in equipment rather than the operation of the equipment.

Delegates agreed to the proposal of Switzerland, supported by the US and the EU, to continue discussions with TEAP members in an informal group.

On Friday morning during plenary, OEWG 37 Co-Chair Krajnik requested the TEAP to report back on the informal discussions. TEAP Member Kuijpers informed participants that the TEAP will be drafting, reviewing and finalizing its report for OEWG 38. He said the TEAP will, *inter alia*: address requests for updates on refrigerants, including information on not-in-kind technologies and safety considerations; highlight positive findings on HAT conditions in the Executive Summary; include any new updates from the testing programmes; and respond to other requests by the parties, including suggestions on scenarios.

Co-Chair Krajnik thanked the TEAP for its efforts and asked parties to consult directly with the TEAP on any suggestions.

Returning to the TEAP Report on Friday evening, OEWG 37 Co-Chair Smith reminded parties that outstanding issues were discussed bilaterally with the TEAP.

The TEAP acknowledged comments received during OEWG 37, after the draft report was posted, and reminded parties that additional comments should be submitted in writing by 15 April

2016 to the Secretariat, which would then send them to the TEAP. Pakistan queried, and the TEAP agreed, that this deadline could be extended by several days, if needed.

DUBAI PATHWAY ON HFCs

On Monday, OEWG 37 Co-Chair Krajnik introduced the agenda item on the Dubai Pathway on HFCs, reminding delegates of the contact group's mandate.

HFC Management Contact Group Co-Chair McInerney opened the discussion, calling on participants to "lock-in" the progress made at MOP 27 in November 2015, and during OEWG 37 to achieve a product that can set the tone for a path forward. Several parties suggested beginning the discussion by focusing on challenges that had not yet been discussed, including commercial provisions and ecological effects.

Recognizing inherent challenges, parties urged each other to work together in a spirit of cooperation to address HFCs under the Montreal Protocol as soon as possible.

RESOLVING CHALLENGES BY GENERATING SOLUTIONS ON THE FEASIBILITY OF MANAGING HFCs:

These discussions took place from Monday through Friday. Delegates initially held general discussions, followed by a more detailed discussion addressing the list of challenges agreed to under the Dubai Pathway on HFCs. Stocktaking plenaries were held throughout the week to update the OEWG on progress. The discussions are outlined below, according to topic.

Delegates recognized the *relevance and recognition of the special situation of developing countries*, proposing to use differentiated schedules and financial assistance. Suggestions to address this challenge included using "basic domestic needs" to ensure that developing countries are able to meet their consumption needs. One party highlighted that, as there is no one definition of a developing country, this method could influence the financial burden of a country. Others, noting the potential economic impacts on the RAC production sector, cautioned that with the phase-down of HFCs, small industries and developing country economies may face possible economic instability.

On a possible amendment, many called for a ten-year grace period for developing countries. Some cautioned, however, that solutions are only possible if countries meet their responsibilities according to their current capacities. They also highlighted the need to address the disposal of unwanted ODS. Referring to how developing countries will grapple with the replacement costs when moving away from HFCs, one party noted the social impacts of a possible HFC phase-down.

On *financial support*, delegates stressed the importance of maintaining the MLF to support Article 5 countries. One delegate suggested the MLF remain the funding mechanism for agreed incremental costs for the HFC phase-down, as well as for enabling activities such as capacity building and training.

Delegates also sought clarification on: what "additional financial resources" refers to; voluntary contributions; and what constitutes "stable and sufficient" funding. One asked for additional details on a funding mechanism, including on how funding for HFC management will relate to existing funding baskets. Another suggested that "additional funding" should be used to meet the requirements to comply with the HFC

requirements that are additional to those required to comply with the HCFC or ODS regime. Delegates said additional details needed to be agreed for many issues, including on guidance to the Executive Committee (ExCom) and details on enabling activities, particularly for the manufacturing sector. They also suggested discussing cut-off dates in further detail.

Delegates highlighted a number of other concerns relating to financing, including: amending Article 10 to address the phase-out of greenhouse gases as opposed to just ODS; defining incremental costs; the financing of phase-downs, saying that Article 5 countries “essentially finance phase-downs by purchasing non-Article 5 technologies”; and ensuring country flexibility to choose particular technologies. Some addressed developing country representation in the ExCom, with one delegate suggesting the relevant party should be present in the ExCom meeting when a project in its country is being considered.

Stating that HFCs are the “most complex and important challenge” to face the Montreal Protocol, many parties expressed support for flexible and innovative approaches for an HFC phase-down, with financial support for conversions. Parties also suggested that the MOP could provide guidance to the MLF. One delegate suggested that once a phase-down quantity is proposed, countries could be supported, for example, for the tonnages phased down.

On a HAT exemption, another clarified that funding would be available once countries move out of any exemption towards phase-down. He suggested the MLF could support, *inter alia*, financial and technical assistance on consumption and production, capacity building, institutional strengthening, or illegal trade reduction, and encouraged a “big picture solution.” Others suggested that, for HAT countries, it would be useful to consider financing during exemption periods.

With many requesting increased levels of funding, delegates noted that it is difficult to estimate funding levels because of unknown parameters such as baselines, the freeze levels and phase-down, and the freeze start date. Delegates also suggested: producing a forecast with varying models; including information on the current levels of funding available through the MLF; setting a maximum limit on financing and dollar terms per carbon dioxide equivalent; and tasking the TEAP with estimating costs based on the schedules proposed in the draft amendments. One party reminded participants of the economic challenges faced by transitional countries that are not Article 5 countries.

On energy efficiency, one delegate observed that the MLF has not funded some projects in the past because of the financial savings generated by greater energy efficiency of new equipment, and suggested reflecting on how best to avoid discouraging such projects. Another proposed applying a principle that states that projects should not backslide on energy efficiency, and proposed that the ExCom develop guidelines or a methodology for addressing this issue. Several suggested flexibility for countries in choosing technology, with some noting that such flexibility is important to avoid double conversions.

On the calculation of conversion costs, one delegate said that while the ExCom has begun to consider the calculation of conversion costs, it is still open to guidance from parties on

how to proceed. Another supported providing small amounts of finance for demonstration projects on HFC alternatives. A few suggested gathering lessons learned from demonstration projects on the disposal of unwanted substances, from projects approved by the ExCom, and further suggested the Ozone Secretariat reach out to other secretariats to identify challenges, best practices and possible synergies.

Several delegates observed that some technologies and alternatives are not available in Africa, which increases the costs of transitions for African countries. One delegate, noting that Africa is the second highest consumer region, cautioned that a transition to HFC alternatives might lead to a black market that could facilitate the illegal trade of HFCs. Another said this challenge should be recognized in funding considerations and MLF replenishment, and urged parties to agree on funding, maintain momentum, and adopt an amendment in 2016.

One delegate proposed that the MOP provide guidance to the ExCom to formulate a guidance document on concerns regarding the TEAP, requesting that it update its financial estimates, including specific costs that will be covered under the MLF and concerns related to cost effectiveness and cut-off dates.

Some parties called for building on lessons learned from previous transitions and underscored the lack of alternative technologies available in HAT zones and tropical countries. One suggested carrying out a comprehensive scientific assessment on the issue. Another highlighted technology challenges, saying that funding considerations should take into account cost effective measures and emission control technology.

Others, noting the high cost of conversion to low-GWP technologies, queried when particular funds would be made available to facilitate the phase-out of HCFCs.

On capacity building, one delegate stated that it is critical to ensure safe management of HFCs. Another called for continued discussion on: certification programmes; compliance issues; illegal trade; and the introduction of climate-friendly alternatives. Many urged further discussion, including on training for technicians and needed financial assistance. One suggested “categorically different training” conducted in local languages and within illiterate communities.

Delegate also suggested highlighting the special concerns of small island developing states, and called for special financial assistance and compensation for companies to phase-out HCFCs and HFCs, and adapt to new technologies.

On Thursday, a draft text was presented entitled ‘Text for consideration by the Parties for inclusion in decisions related to funding under the Dubai Pathway on HFCs under the Montreal Protocol on Substances that Deplete the Ozone Layer’ (UNEP/OzL.Pro.WG.1/37/CRP.1). The proponents highlighted that the text: includes decisions related to financing for the manufacturing and servicing sector; asks the TEAP to provide estimates on additional financing required to implement an amendment; and requests the ExCom to increase financing, with the aim of having funding available as soon as possible after the adoption of an amendment. They concluded by expressing their flexibility on the text and reiterated their willingness to have a constructive discussion on the document, taking into account the concerns of all stakeholders.

Some parties observed that they had not been consulted on the text and would need additional time to consider the conference room paper (CRP). Others welcomed the CRP as a first step. They also stated that when countries send a signal that they are willing to move forward on obligations under an amendment, donor countries are also more willing to provide financial and technical support.

Several parties suggested strengthening coordination among Article 5 countries, noting several common concerns, *inter alia*: financing; standardization and legal issues; energy efficiency; and funding projects with an HFC agenda. One said that several of the CRP's issues are relevant to many least developed countries, particularly, *inter alia*, training, capacity building and ODS stocks. Noting that the CRP appears aimed at servicing in low consumption countries, another identified aspects for wider discussion relating to consumption and production sectors. Delegates also identified that many of the suggestions in the CRP for the MLF and the ExCom were agreed to using other mechanisms for ODS, proposing additional issues for discussion at the ExMOP.

On Friday evening, one party, on behalf of an informal group discussing the finance challenges, informed the HFC Management Contact Group on the discussions. She regretted that the group was unable to complete its work, in part due to a lack of time. The group did agree to solutions to some challenges, detailed below, including on overarching principles and timelines related to finance, principles on second and third conversions, sustained aggregate reductions and enabling activities. She said a number of solutions still require work, in some cases significant work. She concluded by expressing hope that the group laid the groundwork for the finalization of financing issues at its next meeting.

The document, "Solutions from the Informal Group consulting on challenges regarding funding issues and flexibility in implementation," includes four sections that address, *inter alia*:

- overarching principles and timelines, wherein parties agree to: revise, within one year after the adoption of the amendment, MLF procedures, criteria and guidelines to address an HFC phase-down; revise the ExCom rules of procedure with a view of building more flexibility for Article 5 parties; and request the Chair of the ExCom to report to the MOP on progress made;
- principles on second and third conversions, which: define first conversions, in the context of an HFC phase-down, as conversions of enterprises to low-GWP or zero GWP alternatives that have never received direct or indirect support, in part or in full, from the MLF, including enterprises that converted to HFCs with their own resources; note that enterprises that have already converted to HFCs in phasing out CFCs and/or HCFCs would be eligible to receive funding to meet agreed incremental costs in the same manner as enterprises eligible for first conversions; and outline additional scenarios in which enterprises will be available for support;
- sustained aggregate reductions address: remaining eligible consumption for funding in tonnage, determined on the basis of the starting point of national aggregate consumption, less the amount funded by previously approved projects, in future

multi-year agreement templates for HFC phase-down plans; and

- enabling activities supported by the MLF in an HFC phase-down agreement would include, *inter alia*: capacity building and training for handling HFC alternatives; institutional strengthening; licensing; reporting; demonstration projects; and national strategy development.

One party expressed concern, underscoring the formal rules of procedure, saying that discussions should be open to all parties.

HFC Management Co-Chair Yingxian thanked the group, expressing regret that the HFC Contact Group could not conclude its mandate, but observing that parties did "lock in some progress."

One party suggested continuing the contact group's work on finding solutions to challenges prior to OEWG 38 in accordance with the mandate of the contact group. Yingxian noted that the OEWG will have to make this decision.

On *intellectual property rights (IPR)*, some expressed concerns on the cost of, and developing countries' access to, alternative technologies, saying that the high incremental costs of alternatives could have negative impacts on national economies. Another said the diversity of alternatives poses challenges for traditional manufacturers of chemicals, which could lead to negative effects, such as mass unemployment throughout industrial chains.

Many delegates stressed IPR as an important and sensitive issue, with some saying, *inter alia*, that patents should not prevent local technological innovation. One delegate urged balancing the protection of IPR with the need for environmental protection, suggesting that companies with patents could provide technology on a voluntary basis, and calling for cooperation among developed and developing country industries.

Another suggested including language in an amendment that provides for a conclusive review of available alternatives, particularly for HAT countries, in line with Article 2 (control measures), saying such language would allow parties to make further adjustments on production, control and timelines as new alternatives become available. Delegates said that HAT issues are relevant and important for all countries and expressed optimism that technologies will likely become available for HAT countries and regions.

One pointed to several available sources of information and guidance on IPR, including the North America amendment proposal and the Secretariat's briefing note on IPR and the Montreal Protocol. Another suggested sending a clear message to industry, stating his country would not invest in new technologies if no one intends to switch to them. Expanding the TEAP's Terms of Reference to address HCFCs and environmental impacts was suggested. There was also a suggestion, met with hesitation by some, that a new mandate could be developed for the TEAP to address missing elements, such as the cost of alternatives.

Others highlighted concerns on safety, with one party suggesting the TEAP, or relevant international organizations, develop international and national safety standards, proposing that such organizations consider how developing countries could

create regulatory frameworks for controlling refrigerants and address ways to recycle and reuse refrigerants.

Delegates also queried whether parties have the ability to subsidize IPR, urging parties to be specific in their requests and concerns, and suggested informal discussions with industry stakeholders and non-governmental organizations present at OEWG 37, as they are aware of standards and possibilities.

On the cost of hydrofluoroolefins (HFOs), parties suggested the MLF support developing new processes at a lower cost to bring down total conversion costs, compensate displaced workers, and help enterprises develop new alternatives.

On *flexibility in implementation*, delegates underscored the importance of being able to select technologies when implementing the amendment. Many, emphasizing the progress made on flexibility at MOP 27, emphasized the need for “full” flexibility in a potential HFC phase-down and stated that it should be a country-driven approach where parties are allowed to prioritize their choice of sectors and chemical alternatives among other issues. Others also expressed support for Article 5 parties to have flexibility and ownership, and urged using a “balanced approach” in selecting technologies, based on, *inter alia*, GWP, safety and energy efficiency.

Another noted that the MLF’s decision-making process has “several layers” and that flexibility should not only be reflected in the outcomes, but throughout the process.

Delegates reiterated the need for technology transfer and capacity building to facilitate an HFC phase-down, while some said that limiting flexibility to an HFC phase-down only is not flexible, and called for linking this to the HCFC phase-out. They also suggested a HFC phase-down coincide with countries’ fiscal calendars.

Delegates suggested flexibility for grace periods, saying that grace periods could also address licensing systems, and be used to comply with new obligations.

On *the relationship of an HFC amendment with the HCFC phase-out*, many delegates expressed concerns about how countries will address an HCFC phase-out and an HFC phase-down, particularly in HAT countries, with some underscoring potential economic consequences. One delegate called for clearly defining the linkages between the HCFC phase-out and HFC management.

In response to concerns about the relationship between the HCFC phase-out and HFC phase-down, one delegate recognized that some countries may need to transition from HCFCs to HFCs and proposed a combined baseline that would include both an HCFC and an HFC component. Delegates also suggested that the MLF could provide incentives for countries to avoid transitions to HFCs, pointing to existing incentives for transition to low-GWP alternatives for small and medium enterprises.

Delegates also supported further discussion on the relationship between phasing out HCFCs and phasing down HFCs, pointing to failures experienced in previous phase-outs, and asking about available technology. Other issues highlighted included: avoiding confusion and inconsistency in the private sector and ensuring that “the rules of the game are not changed midway”; including

“buffers” where HCFC phase-outs and HFC phase-downs occur simultaneously; and combining HCFC phase-outs and HFC phase-downs, to promote synergies.

One party elaborated on its amendment proposal’s concept of a combined baseline, saying this approach recognizes that there will be some transition to HFCs from HCFCs, and allows for some growth in Article 5 countries. He explained that the baseline uses weighted-GWP values for both HCFCs and HFCs, and, observing that some alternatives are already available, stated that countries could begin phase-downs in some areas while waiting for alternatives to emerge in others.

On *non-party trade provisions*, parties underscored that non-party trade provisions are crucial to secure a phasedown of HFCs, with some stating that these could be “packaged” with other items, including a HAT exemption and HCFC phase-out. One delegate suggested a longer-term deferral for trade provisions.

On *the legal aspects, synergies and other issues related to the UNFCCC in the context of HFC management under the Montreal Protocol*, parties cautioned on the need to clarify the legal aspects between the two conventions. Others stressed that the rights and obligations of parties under the UNFCCC are not impinged on by addressing HFCs under the Protocol.

Some delegates highlighted the opportunity to create synergies that also benefit the climate through maximizing the efficiency of the RAC sector. They also pointed to an information paper released by the Secretariat, which had been reviewed by the UNFCCC, saying that the paper addresses a number of the concerns raised. One party said that while HFCs should only be dealt with by the UNFCCC, they are willing to negotiate based on the fact that the UNFCCC will have to address and/or recognize this issue at some point in the future. Another urged for others to not prejudice how this issue is addressed under the UNFCCC.

Delegates then addressed the issue of *exemption processes and a mechanism for periodic review of alternatives*. On HAT exemptions, there were suggestions for a targeted accommodation for countries with extreme temperature conditions that affect performance and for additional time for transitions for some sectors, such as ones that use HCFC-22 in the RAC sector.

On adopting an HFC amendment, there were calls to ensure sufficient time for developing low-GWP technology in the RAC sector, recognizing that without such time many Article 5 countries could be at risk of non-compliance. Other concerns raised included: enterprises’ eligibility for funding; the availability of funding for conversion to low-GWP substances; and the calculations used for determining combined baselines.

Responding to these concerns, some delegates underscored, *inter alia*, the Montreal Protocol’s existing deferral mechanism, which refers to exemptions and pointed to the Secretariat Briefing Note on Exemption Mechanisms under the Montreal Protocol.

On the issue of a possible increase in HFC production and consumption in the short-term, delegates noted that while such an increase was likely unavoidable, the phase-out of HCFCs would also have climate benefits. One delegate said that a longer

grace period would facilitate a longer period in which HFC production and consumption would rise, suggesting a need to discuss how to balance the needs of Article 5 countries with the need to limit emissions.

Other issues addressed included, *inter alia*: exemption schemes based on specific, concrete criteria and subject to regular review; regulatory regimes leading to an increase in alternatives available on the market; identification of alternative technologies, rather than exemptions, to address HAT concerns; and the need for fair and flexible baseline calculations.

On Wednesday evening, following discussions, parties presented compromise text. A proponent said that while the issue is broad, the proposal only addresses an exemption for parties with HAT conditions, where suitable alternates do not exist. The proposal, *inter alia*:

- is distinguished and separate from critical-use exemptions (CUEs) and essential-use exemptions (EUEs) of the Protocol;
- specifies that the exemption will be available at the commencement of the HFC freeze or other initial control obligations with a duration of four years;
- applies to Article 5 countries with an average of at least two months per year, over 10 consecutive years, with a peak monthly average temperature above 35 degrees Celsius, and formally notified use of this exemption to the Secretariat no later than one year before the HFC freeze or other initial control obligation, and every four years thereafter, should it wish to extend the exemption;
- calls for any party operating under the HAT exemption to report separately the production and consumption data for the sub-sectors to which a HAT exemption applies;
- states that any transfer of production and consumption allowances for the HAT exemption shall be reported to the Secretariat under Article 7 (reporting of data);
- says that amounts of Annex F substances that are subject to the HAT exemption are not eligible for funding under the MLF while they are exempted for that party;
- calls on the Implementation Committee and the MOP, for 2025 and 2026, to defer the consideration of the HCFC compliance status of any party operating under a HAT exemption; and
- states that parties should consider, no later than 2026, whether to extend the compliance deferral for an additional period of two years, and may consider further deferrals thereafter, if appropriate.

Many lauded this compliance deferral approach as a way to move forward on HFC management, with one expressing “renewed hope” in the spirit of consensus.

The proponents clarified that 34 countries would qualify for the HAT exemption. The proponents also said that while the exemption was currently placed within the North American amendment proposal, it is a standalone item and not “locked into” any specific amendment proposal.

In response to the proposal, delegates suggested a scientific vetting process to ensure a more inclusive definition of what constitutes a HAT country, with some highlighting concerns of high humidity and acknowledging that HAT zones may exist in

particular regions of a country. They suggested the list be left open, wherein other countries could apply, based on a set of parameters.

Echoing one party’s suggestion regarding a more general exemption process, several parties recommended further discussions on a broader exemption process based on EUEs or CUEs, noting there may be other exemptions that have merit, such as metered dose inhalers, fishing vessels or fire extinguishers. One delegate also identified that the exemption procedure might be different for HFCs, as it relates to a phase-down, not a phase-out. HFC Management Contact Group Co-Chair McInerney noted that the informal TEAP discussions may provide an opportunity to discuss the other issues raised.

CLOSING SESSION

Delegates reconvened in plenary on Friday evening, noting interpretation would terminate at midnight. They adopted the Report of the Meeting (UNEP/OzL.Pro.WG.1/37/L.1), noting that the sections on the HFC Management Contact Group would be completed after the meeting. Pakistan requested an addition to the meeting report to reflect his comment that the TEAP Report was not “user-friendly” and should include the cost of HFC alternatives.

HFC Management Contact Group Co-Chair McInerney reflected on efforts to address the Dubai Pathway on HFCs over the course of OEWG 37, including: a “lock in” HAT exemption; a strategy to address consumption and production, wherein HAT countries could transfer allowances to non-HAT countries to produce refrigerants; and that the TEAP and the Scientific Assessment Panel were requested to provide a scientific and inclusive definition of HATs. On funding, HFC Management Contact Group Co-Chair McInerney requested additional time for the contact group.

OEWG 37 Co-Chair Smith suspended the contact group, recommending to resume OEWG 37 prior to OEWG 38, pending budgetary implications. Delegates agreed. The EU, with Kuwait, requested the Secretariat to inform parties of the dates of the resumed session.

Noting informal discussion on the need for broader exemptions, Canada presented text, stating: “to address the possibilities or need for exemptions from the HFC phase-down schedule not later than 2030.” Commending the text, Saudi Arabia, with Pakistan, urged for discussion by a contact group, before seeking approval from plenary, as is common practice. The plenary took note of Canada’s remarks.

The US suggested parties request the Secretariat to provide an information document comparing the different HFC amendment proposals for review at OEWG 38.

Lauding progress, OEWG 37 Co-Chair Smith suspended the meeting at 12:40 am on Saturday, 9 April.

A BRIEF ANALYSIS OF OEWG 37

There are no extra pieces in the universe. Everyone is here because he or she has a place to fill, and every piece must fit itself into the big jigsaw puzzle. - Deepak Chopra

After more than five years of deliberation on whether to even discuss HFCs under the Montreal Protocol, delegates from both sides of the debate arrived in Geneva with cautious optimism and fully charged batteries, cognizant of the workload ahead. The agreement on the Dubai Pathway on HFCs at MOP 27 had signaled that parties were willing to put aside some of their previous reservations and actually discuss the HFC issue in a formal contact group. OEWG 37 participants discussed the many challenges of addressing HFCs under the Protocol and began to flesh out concrete solutions to those challenges. Nonetheless, as OEWG 37 demonstrated, these challenges represented only the first few pieces in a very complex puzzle.

It quickly became apparent that before parties can finally agree on an HFC amendment, addressing the numerous challenges—including how the HCFC phase-out and potential HFC phase-down fit together—time, patience and, certainly not least, financial support would be needed.

OEWG 37 made progress on a number of the HFC puzzle pieces, namely: a formal exemption and a linked deferral procedure for high-ambient temperature (HAT) countries; discussions on other EUEs over the course of HFC phase-down, and funding replenishment under the Dubai Pathway via the Multilateral Fund.

This brief analysis will consider the main points of discussion at OEWG 37. It assesses how participants “locked-in” progress, cementing some of the trickier pieces of the puzzle, a move that signals positive progress towards an HFC amendment within the Montreal Protocol in 2016.

LIKE A PIECE IN A PUZZLE, YOU HAVE A UNIQUE POSITION TO OCCUPY

Several factors came together to make OEWG 37 significant: its singular focus on HFCs; high-level intersessional work; and the re-unification of the “ozone family.”

With an agenda solely dedicated to the Dubai Pathway on HFCs, OEWG 37 demanded that parties focus on putting together some of the HFC puzzle pieces; as a result, discussions advanced from “whether” to discuss HFCs, towards “how” to address them “now.” As observed by some delegates, previously vociferous parties focused less on their arguments that “HFCs are not ODS,” while others were quieter on the legal ramifications on addressing HFCs under the Montreal Protocol rather than the UNFCCC. As one insider put it, “people who refused to discuss an amendment now have ‘amendment’ in their vocabulary.”

Many delegates alluded to significant intersessional work among parties prior to and since MOP 27, with countries raising the issue of HFCs during multilateral and bilateral meetings, including at Group of Seven (G7), Group of Twenty (G20) and Gulf Cooperation Council meetings. Some insiders revealed that the Obama administration’s desire to “get this done” in 2016 played an instrumental role in this forward momentum. Others pointed to the Paris Agreement on Climate Change as a

significant step that eliminated at least a few parties’ refusals to discuss an amendment. At least one party had repeatedly insisted that his country was unwilling to discuss an amendment to the Montreal Protocol until after a climate agreement. With Paris “out of the way,” as one seasoned observer put it, this party’s rationale for refusing to discuss an amendment is no longer valid.

Likewise, for years the Montreal Protocol has prided itself on being one big “ozone family.” Over the last few years, however, disagreements over HFCs have contributed to internal arguments, leaving some seasoned participants to question “the family’s” foundations and whether there really was room for each unique party. At OEWG 37, as a more positive tone again emerged, this familial feeling resurfaced, with participants showing patience towards each other, although, as one delegate stated, “It’s a dysfunctional family at best.” Dysfunctional, dynamic or otherwise, once again the ozone family has moved forward together in its famed spirit of inclusiveness, compromise and trust.

These factors proved to be a solid basis for starting to address the trickier pieces of the HFC management puzzle, particularly the HAT and funding issues.

THE MORE PIECES, THE HARDER IT IS TO SOLVE

OEWG 37 began by tackling one of the more heated puzzle pieces—the issue of exemptions, namely a possible HAT exemption, which was eventually agreed to using a “compliance deferral” approach. A growing number of countries used the HAT argument to try to position themselves as HAT countries, or countries with HAT zones. While some were dismissive of this bid at first, the initial list of HAT countries grew to 34, a much higher number than initially predicted, by the time a proposal was put on the table.

Additional countries continued to plead their case for inclusion within the HAT list, leading to tangled discussions of humidity, and hot and arid zones, as well as muted frustrations by some parties who felt they had already made significant concessions by agreeing to an expanded list of 34. One seasoned participant joked, “Will we all eventually qualify for an exemption?” Despite a few disgruntled mutterings, parties’ willingness to address HAT concerns head on, halfway through the meeting, raised hopes that some of the tricky pieces of the puzzle were sliding into place.

During the HAT exemption discussion, a second debate began on a broader exemption procedure, using the notion of CUEs or EUEs, already a commonly-used approach under the Montreal Protocol, including for exemptions on metered-dose inhalers or fishing vessels. Although OEWG 37 did not resolve this issue, many anticipate discussion on a broader exemption procedure at OEWG 38.

With so many sticking points, however, the initial optimism of OEWG 37 collided with reality during the lengthy finance discussions, leading to late night informal discussions. While some parties aptly characterized finance as a “chicken versus egg” conundrum on whether parties should first agree to obligations on HFCs or whether funding allocations should first be put on the table, the African Group’s midweek proposal on funding concerns under the Dubai Pathway cemented financing’s

central role in the process. Nevertheless, initial discussions were positive, with a few parties welcoming the topic and others suggesting further discussions.

A few tensions and misunderstandings surfaced during Thursday's afternoon and evening funding discussions, but most parties accepted this backward progress as par for the course, noting that any discussion on financing would generate heated debate. A few parties voiced concerns that the suspension of the contact group for informal discussions means that not everyone was in the room, particularly as the informal discussions on financing shifted to what some described as an "eight by eight" negotiation, where eight Article 5 parties and eight non-Article 5 parties engaged in more private discussions. Other seasoned delegates were more sanguine, accepting that a select few individuals will have to place some of the final puzzle pieces.

As one delegated explained, "There is only one real sticking point: the cash. Once that is decided, everything else will fall into place." On the whole, most participants seem to accept that the financing issue is really not a question of yes or no, but of how much and when the replenishment will be allocated.

While financing through the Multilateral Fund represents one of the more challenging issues to resolve, several other challenges remain to be addressed, either intersessionally or at the upcoming OEWG sessions in order to reach agreement on an amendment. Key outstanding issues include: baselines; freeze dates; grace periods; issues related to IPR and industry; and the relationship between HCFCs and HFCs. Although delegates engaged in some discussions on these challenges, significant discussion is still needed to reach agreement on these topics, as well as on questions on synergies and trade-offs, such as how to balance ambition with flexibility.

EVEN THE MOST DIFFICULT PUZZLES HAVE A SOLUTION

During the late hours Thursday and Friday, most parties remained "cautiously optimistic" that the 28th session of the MOP, to be held in Kigali, Rwanda, in October 2016, would adopt an HFC amendment, although the continual delays in Friday evening's contact group and plenary sessions did at times cause delegates to be more cautious than optimistic. As one seasoned delegate said, "An amendment is ambitious, but not too ambitious. If parties really want it to happen, it's possible." In addition, parties' ability to resolve the HAT conundrum, and their willingness to discuss funding at this stage, signifies real progress towards reaching agreement on an HFC amendment in 2016.

Several participants pointed to the announcement that Gina McCarthy, the Administrator of the US Environmental Protection Agency, will attend OEWG 38, as encouragement for other ministers to attend. This was seen as a key signal of expected progress in Vienna and, as many assumed, might offer friendly pressure to reach agreement on an HFC amendment.

While some delegates expressed optimism that parties would be able to agree on an amendment by the scheduled ExMOP in Vienna in July, especially if intersessional work takes place, most anticipate that the ExMOP will only agree on "interim issues," with several participants pointing out that lawyers will need time

to study the proposed amendment, making agreement in Vienna unlikely. Nonetheless, the Vienna OEWG meeting and ExMOP are expected to play a critical role in finalizing the actual wording of an amendment.

Several insiders predict that parties will address the amendment proposals in Vienna. Some suggested there might be a side-by-side comparison of the four proposals, which would reveal that, "two-thirds of the wording is already the same." While parties still need to tackle some of the aforementioned challenges and negotiate the final details, as one delegate put it, "once we hear about the challenges, and offer concrete solutions together, the actual adoption process will go quite quickly."

OEWG 37 achieved slow, steady progress in putting together the pieces of the HFC amendment puzzle. While it is too soon to predict when and how the final pieces will come together, many parties appear hopeful, describing the progress in Geneva as "remarkable," and anticipating agreement on bracketed text in Vienna and an amendment by MOP 28 in Kigali.

UPCOMING MEETINGS

ATMOsphere Europe 2016: ATMOsphere Europe 2016 brings together decision-makers from industry and government to discuss the latest natural refrigerant technologies, market trends and regulatory issues in Europe. **dates:** 19-20 April 2016 **location:** Barcelona, Spain **contact:** ATMOsphere Secretariat **phone:** +32-22-30-37-00 **email:** info@atmo.org **www:** http://www.atmo.org/europe2016

76th Session of the MLF ExCom: The Montreal Protocol Multilateral Fund (MLF) ExCom will meet for its 76th session. **dates:** 9-13 May 2016 **location:** Montreal, Canada **contact:** MLF Secretariat **phone:** +1-514-282 1122 **fax:** +1-514-282-0068 **email:** secretariat@unmfs.org **www:** http://www.multilateralfund.org

ATMOsphere Australia 2016: ATMOsphere Australia 2016 brings together decision-makers from industry and government to discuss the latest natural refrigerant technologies, market trends and regulatory issues in Australia. **date:** 16 May 2016 **location:** Melbourne, Australia **contact:** ATMOsphere Secretariat **phone:** +32-22-30-37-00 **email:** info@atmo.org **www:** http://www.atmo.org/events.details.php?eventid=43

Tenth Meeting of the Open-ended Working Group of the Basel Convention (OEWG-10): The tenth meeting of the Open-ended Working Group of the Basel Convention (OEWG-10) will consider issues in advance of COP 13, including: strategic issues; scientific and technical matters; legal, governance and enforcement matters; international cooperation and coordination; and the programme of work and budget. OEWG 10 will consider revising the technical guidelines on e-waste adopted by COP-12 on an interim basis. **dates:** 30 May - 2 June 2016 **location:** Nairobi, Kenya **contact:** BRS Secretariat **phone:** +41-22-917-8218 **fax:** +41-22-917-8098 **email:** brs@brsmeas.org **www:** http://www.basel.int

44th Sessions of the UNFCCC Subsidiary Bodies: The forty-fourth sessions of the Subsidiary Body for Implementation (SBI 44) and Subsidiary Body for Scientific and Technological Advice (SBSTA 44), as well as the first session of the *Ad Hoc*

Working Group on the Paris Agreement (APA 1) will convene. **dates:** 16-26 May 2016 **location:** Bonn, Germany **contact:** UNFCCC Secretariat **phone:** +49-228 815-1000 **fax:** +49-228-815-1999 **email:** secretariat@unfccc.int **www:** <http://www.unfccc.int>

Second Meeting of the UN Environment Assembly (UNEA): The UNEA of UNEP will convene for the second time, representing the highest level of governance of international environmental affairs in the UN system. **dates:** 23-27 May 2016 **location:** Nairobi, Kenya **contact:** Jorge Laguna-Celis, Secretary of Governing Bodies **phone:** +254-20-7623431 **email:** unep.sgb@unep.org **www:** <http://web.unep.org/unea/>

50th Meeting of the GEF Council: The GEF Council meets twice a year to approve new projects with global environmental benefits in the GEF's focal areas and in the GEF's integrated approach programmes. **dates:** 6-9 June 2016 **location:** Washington D.C., US **contact:** GEF Secretariat **phone:** +1-202-473-0508 **fax:** +1-202-522-3240 **email:** secretariat@thegef.org **www:** <https://www.thegef.org/>

ATMOSphere America 2016: ATMOSphere America 2016 brings together decision-makers from industry and government to discuss the latest natural refrigerant technologies, market trends and regulatory issues in North America. **dates:** 16-17 June 2016 **location:** Chicago, US **contact:** ATMOSphere Secretariat **phone:** +32-22-30-37-00 **email:** info@atmo.org **www:** <http://www.atmo.org/events.details.php?eventid=44>

Resumed 37th Meeting of the Open-Ended Working Group of the Montreal Protocol: The resumed meeting of OEWG 37 will take place prior to OEWG 38, at a date and venue to be determined by the Ozone Secretariat. **dates:** TBC, 2016 **location:** TBC **contact:** Ozone Secretariat **phone:** +254-20-762-3851 **fax:** +254-20-762-0335 **email:** ozone.info@unep.org **www:** <http://conf.montreal-protocol.org/>

38th Meeting of the Open-Ended Working Group of the Montreal Protocol: OEWG 38 will meet in to prepare for the next meeting of the MOP and continue discussions on the HFC amendment. **dates:** 18-21 July 2016 **location:** Vienna, Austria **contact:** Ozone Secretariat **phone:** +254-20-762-3851 **fax:** +254-20-762-0335 **email:** ozone.info@unep.org **www:** <http://conf.montreal-protocol.org/>

3rd Extraordinary Meeting of the Parties to the Montreal Protocol: The third ExMOP is expected to meet in July 2016, following the conclusion of OEWG 38. **dates:** 22-23 July 2016 **location:** Vienna, Austria **contact:** Ozone Secretariat **phone:** +254-20-762-3851 **fax:** +254-20-762-0335 **email:** ozone.info@unep.org **www:** <http://conf.montreal-protocol.org/>

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:** Stefan Reis, Organizing Committee **email:** srei@ceh.ac.uk **www:** <http://www.ozone-symposium-2016.org/>

Eleventh Meeting of the Rotterdam Convention CRC (CRC-12): The Chemical Review Committee 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:** 12-16 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.pic.int>

Twelfth Meeting of the Persistent Organic Pollutants Review Committee (POPRC-12): POPRC-12 will convene to consider, *inter alia*: the draft risk profiles for dicofol and PFOA; further information related to Annex F for decaBDE; and the draft risk management evaluation for 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.pops.int>

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. **dates:** 10-14 October 2016 **location:** Kigali, Rwanda **contact:** Ozone Secretariat **phone:** +254-20-762-3851 **fax:** +254-20-762-0335 **email:** ozone.info@unep.org **www:** <http://conf.montreal-protocol.org/>

For additional meetings, see <http://climate-l.iisd.org/>

GLOSSARY

CFCs	Chlorofluorocarbons
CRP	Conference Room Paper
CUE	Critical-use exemption
EUE	Essential-use exemption
ExCom	Executive Committee
ExMOP	Extraordinary Meeting of the Parties
GWP	Global warming potential
HAT	High Ambient Temperature
HCFCs	Hydrochlorofluorocarbons
HFCs	Hydrofluorocarbons
IPR	Intellectual Property Rights
MLF	Multilateral Fund
MOP	Meeting of the Parties
ODS	Ozone depleting substances
OEWG	Open-Ended Working Group
RAC	Refrigeration and air conditioning
TEAP	Technology and Economic Assessment Panel
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change