

TWENTY-THIRD MEETING OF THE PARTIES TO THE MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER AND THE NINTH CONFERENCE OF THE PARTIES TO THE VIENNA CONVENTION FOR THE PROTECTION OF THE OZONE LAYER: 21–25 NOVEMBER 2011

The twenty-third Meeting of the Parties to the Montreal Protocol (MOP 23) and the ninth Conference of the Parties to the Vienna Convention begins today in Bali, Indonesia. The preparatory segment will take place from Monday to Wednesday, and the high-level segment will convene on Thursday and Friday. During the meeting, delegates are expected to consider decisions on a range of issues, *inter alia*: replenishment of the Multilateral Fund (MLF); ozone-depleting substances (ODS) on ships; methyl bromide issues; ODS alternatives; process agents and feedstocks; destruction of ODS; and the Technology and Economic Assessment Panel (TEAP) nominations process.

A BRIEF HISTORY OF THE OZONE REGIME

Concerns that the Earth's stratospheric ozone layer could be at risk from CFCs and other anthropogenic substances were first raised in the early 1970s. At that time, scientists warned that the release of 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 to this growing concern, the United Nations Environment Programme (UNEP) convened a conference in March 1977 that adopted a World Plan of Action on the Ozone Layer and established a Coordinating Committee to guide future international action on ozone protection.

VIENNA CONVENTION: In May 1981, the UNEP Governing Council launched negotiations on an international agreement to protect the ozone layer and, in March 1985, the Vienna Convention for the Protection of the Ozone Layer was adopted. The Convention called for cooperation on monitoring, research and data exchange, but did not impose obligations to reduce the use of ODS. The Convention now has 196 parties.

MONTREAL PROTOCOL: In September 1987, efforts to negotiate binding obligations to reduce the use of ODS led to the adoption of the Montreal Protocol on Substances that Deplete the Ozone Layer. The Protocol introduced control measures for some CFCs and halons for developed countries (non-Article 5

parties). Developing countries (Article 5 parties) were granted a grace period allowing them to increase their ODS use before taking on commitments. The Protocol currently has 196 parties.

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

LONDON AMENDMENT AND ADJUSTMENTS:

Delegates to the second Meeting of the Parties (MOP 2), which took place in London, UK, in 1990, tightened control schedules and agreed to add ten more CFCs to the list of ODS, as well as carbon tetrachloride (CTC) and methyl chloroform. To date, 196 parties have ratified the London Amendment. MOP-2 also established the MLF, which meets the incremental costs incurred by Article 5 parties in implementing the Protocol's control measures and finances clearinghouse functions, including technical assistance, information, training, and the costs of the MLF Secretariat. The Fund is replenished every three years, and has received pledges of over US\$2.8 billion since its inception.

COPENHAGEN AMENDMENT AND ADJUSTMENTS:

At MOP 4, held in Copenhagen, Denmark, in 1992, delegates tightened existing control schedules and added controls on methyl bromide, hydrobromofluorocarbons and HCFCs. MOP 4 also agreed to enact non-compliance procedures and to establish an Implementation Committee (ImpCom). The ImpCom examines cases of possible non-compliance by parties, and makes recommendations to the MOP aimed at securing full compliance. To date, 194 parties have ratified the Copenhagen Amendment.

MONTREAL AMENDMENT AND ADJUSTMENTS:

At MOP 9, held in Montreal, Canada, in 1997, delegates agreed to a new licensing system for the import and export of ODS, in addition to tightening existing control schedules. They also agreed to ban trade in methyl bromide with non-parties to the Copenhagen Amendment. To date, 185 parties have ratified the Montreal Amendment.

BEIJING AMENDMENT AND ADJUSTMENTS:

At MOP 11, held in Beijing, China, in 1999, delegates agreed to controls on bromochloromethane and additional controls on HCFCs, and to reporting on methyl bromide for quarantine and pre-shipment (QPS) applications. At present, 171 parties have ratified the Beijing Amendment.

MOP 15 AND FIRST EXTRAORDINARY MOP:

MOP 15, held in Nairobi, Kenya, in 2003, resulted in decisions on issues including the implications of the entry into force of

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the Beijing Amendment. However, disagreements surfaced over exemptions allowing the use of methyl bromide beyond 2004 for critical uses where no technically or economically feasible alternatives were available. Delegates could not reach agreement and agreed to convene an “extraordinary” MOP. The first Extraordinary Meeting of the Parties to the Montreal Protocol (ExMOP 1) took place in March 2004, in Montreal, Canada. Parties agreed to critical-use exemptions (CUEs) for methyl bromide for 2005 only. The introduction of a “double-cap” concept distinguishing between old and new production of methyl bromide was central to this compromise. Parties agreed to a cap on new production of 30% of parties’ 1991 baseline levels, meaning that where the capped amount was insufficient for approved critical uses in 2005, parties were required to use existing stockpiles.

MOP 16 AND EX-MOP 2: MOP 16 took place in Prague, the Czech Republic, in 2004. Work on methyl bromide exemptions for 2006 was not completed and parties decided to hold a second ExMOP. ExMOP 2 was held in July 2005, in Montreal, Canada. Parties agreed to supplementary levels of CUEs for 2006. Under this decision, parties also agreed that: CUEs allocated domestically that exceed levels permitted by the MOP must be drawn from existing stocks; methyl bromide stocks must be reported; and parties must “endeavor” to allocate CUEs to the particular use categories specified in the decision.

COP 7/MOP 17: MOP 17 was held jointly with the seventh Conference of the Parties to the Vienna Convention (COP 7) in Dakar, Senegal, in December 2005. Parties approved essential-use exemptions for 2006 and 2007, supplemental CUEs for 2006 and CUEs for 2007, and production and consumption of methyl bromide in non-Article 5 parties for laboratory and analytical critical uses. Other decisions included a US\$470.4 million replenishment of the MLF for 2006-2008, and agreement on terms of reference for a feasibility study on developing a monitoring system for the transboundary movement of controlled ODS.

MOP 18: MOP 18 took place in New Delhi, India, from 30 October - 3 November 2006. Parties adopted decisions on, *inter alia*: future work following the Ozone Secretariat’s workshop on the Special Report of the Intergovernmental Panel on Climate Change (IPCC) and the Technical and Economic Assessment Panel (TEAP); difficulties faced by some Article 5 parties manufacturing CFC-based metered dose inhalers (MDIs); treatment of stockpiled ODS relative to compliance; and a feasibility study on developing a system for monitoring the transboundary movement of ODS.

MOP 19: MOP 19 took place in Montreal, Canada in September 2007. Parties agreed to the accelerated phase-out of HCFCs, and also adopted decisions on: essential-use nominations and other issues arising out of the 2006 reports of the TEAP; critical-use nominations for methyl bromide; and monitoring transboundary movements and illegal trade in ODS.

COP 8/MOP 20: MOP 20 was held jointly with COP 8 of the Vienna Convention in Doha, Qatar in November 2008. Parties agreed to replenish the MLF with US\$490 million for 2009-2011 and adopted other decisions concerning, *inter alia*: the environmentally sound disposal of ODS; approval of 2009 and 2010 CUEs for methyl bromide; and compliance and reporting issues. This meeting was the Protocol’s first paperless meeting.

MOP 21: MOP 21 took place in Port Ghalib, Egypt, from 4-8 November 2009 and adopted decisions on: alternatives to HCFCs; institutional strengthening; essential uses; environmentally sound management of banks of ODS; methyl

bromide; budget; and data and compliance issues. Delegates considered a proposal to amend the Montreal Protocol to include HFCs, but this was not agreed.

MOP 22: MOP 22 took place in Bangkok, Thailand, from 8-12 November 2010 and adopted decisions on, *inter alia*: the terms of reference for the TEAP study on the MLF replenishment and for the evaluation of the financial mechanism; and assessment of technologies for ODS destruction. Delegates considered, but did not agree to, two proposals to amend the Montreal Protocol to address HFCs, one submitted by the US, Mexico and Canada, and another submitted by the Federated States of Micronesia.

CURRENT ODS CONTROL SCHEDULES: Under the amendments to the Montreal Protocol, non-Article 5 parties were required to phase out production and consumption of: halons by 1994; CFCs, CTC, hydrobromochlorofluorocarbons and methyl chloroform by 1996; bromochloromethane by 2002; and methyl bromide by 2005. Article 5 parties were required to phase out production and consumption of hydrobromochlorofluorocarbons by 1996 and bromochloromethane by 2002. Article 5 parties must still phase out: production and consumption of CFCs, halons and CTC by 2010; and methyl chloroform and methyl bromide by 2015. Under the accelerated phase-out of HCFC adopted at MOP 19, HCFC production and consumption by Article 2 countries was to be frozen in 2004 and phased-out by 2020, while in Article 5 parties, HCFC production and consumption is to be frozen by 2013 and phased-out by 2030 (with interim targets prior to those dates, starting in 2015 for Article 5 parties). There are exemptions to these phase-outs to allow for certain uses lacking feasible alternatives.

INTERSESSIONAL HIGHLIGHTS

OPEN-ENDED WORKING GROUP: The thirty-first meeting of the Montreal Protocol’s Open-ended Working Group (OEWG 31) convened in Montreal, Canada from 1-5 August 2011. Delegates considered several issues arising from the 2011 Progress Report of the TEAP including: a review of nominations of essential-use exemptions for 2012 and 2013; a review of nominations for methyl bromide CUEs for 2012 and 2013; and methyl bromide use for QPS. Parties also discussed the results of the TEAP Replenishment Task Force assessment of the funding requirement for the replenishment of the Multilateral Fund for the Implementation of the Montreal Protocol (MLF) for the period 2012-2014. OEWG 31 considered two proposals to amend the Montreal Protocol related to HFCs: the first by the Federated States of Micronesia, and the second by the US, Canada and Mexico.

TEAP AND TOCs: Several of the Technical Options Committees (TOCs) met between May and October 2011 to further their work in the lead-up to MOP 23. The work of the TOCs and the Task Force are included in the TEAP’s 2011 reports, which will be considered at MOP 23.

EXECUTIVE COMMITTEE: The Executive Committee of the MLF held its sixty-fifth meeting from 14-18 November 2011 in Bali, Indonesia. The Committee approved investment projects and work programme activities including several national HCFC phase-out management plans.

IMPLEMENTATION COMMITTEE: The forty-seventh meeting of the ImpCom under the Non-Compliance Procedure convened in Bali, Indonesia, from 18-19 November 2011. The ImpCom considered information provided by the Secretariat of the MLF on relevant decisions of the MLF Executive Committee and on activities carried out by implementing agencies, and issues related to non-compliance. Its recommendations will be considered at MOP 23.

**COP 9/MOP 23 HIGHLIGHTS:
MONDAY, 21 NOVEMBER 2011**

The preparatory segment of the ninth meeting of the Conference of the Parties (COP 9) to the Vienna Convention for the Protection of the Ozone Layer and the twenty-third Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (MOP 23) opened in Bali, Indonesia, on Monday, 21 November 2011.

In the morning, delegates heard opening statements, addressed organizational matters, and heard reports of the Technology and Economic Assessment Panel (TEAP) replenishment task force.

During the afternoon, delegates discussed essential use exemptions and critical use nominations.

OPENING OF THE PREPARATORY SEGMENT

Marco González, Executive Secretary, Ozone Secretariat, described the accomplishments of the Montreal Protocol, *inter alia*: full compliance in phasing out CFCs and halons by over 95% of the parties in 2010; and the phase out of 98% of all substances controlled under the Protocol. He urged parties to continue their efforts and commitments, and underscored linkages with climate change and sustainable development, noting that one treaty and one group alone cannot protect the complex global environment. González highlighted agenda items on the: replenishment of the Multilateral Fund (MLF); proposals to expand the Protocol to address HFCs; reviewing the findings of assessment panels and essential and critical-use exemptions; and TEAP operations.

The Indonesian Minister for Environment, Balthasar Kambuaya, opened MOP 23, and introduced the draft Bali declaration, which he said was a way forward for the transition towards low global warming potential alternatives (GWP) to ODS. He encouraged parties to support it.

ORGANIZATIONAL MATTERS

Preparatory Segment Co-Chair Gudi Alkemade (the Netherlands), introduced the agenda.

BURKINA FASO proposed consideration of their draft decision to mobilize funds other than the MLF to accelerate the phase-out of hydrochlorofluorocarbons (HCFCs) in Africa under other matters, and delegates agreed.

ARGENTINA proposed addressing adjustment for inflation in national programmes, and parties agreed this issue would be discussed under the item on replenishment.

On methyl bromide alternatives in agriculture, EGYPT highlighted ongoing difficulties for farmers, requesting more sensitive application of measures from 2014, proposing discussion of this under other matters.

UGANDA requested information on all the Secretariat's promotions and appointments made over the past ten years, as well as related budgets and financial reports, and Co-Chair Alkemade asked the Secretariat to provide this.

INDONESIA suggested including a Bali declaration proposed by Indonesia in the agenda to be discussed under other matters, and the parties agreed.

INDIA, supported by CHINA, BAHRAIN, KUWAIT, LEBANON, MALAYSIA, VENEZUELA, and BRAZIL proposed the deletion of the agenda item on the two proposals to amend the Montreal Protocol to include HFCs, stating that HFCs are outside the mandate of the Montreal Protocol, proposing instead that parties concentrate on priority issues within the Protocol's mandate.

Stating that the amendment proposals on HFCs were submitted in accordance with correct procedure, six months in advance of MOP 23, the US, supported by the EU and SWITZERLAND, said this issue should be discussed in a contact group. The EU and CANADA noted that at MOP 22 in Bangkok, 91 parties signed a declaration on the global transition away from HCFCs and CFCs to environmentally-sound alternatives, which declares the signatories intent to pursue further action under the Montreal Protocol aimed at transitioning the world to environmentally sound alternatives to HCFCs and CFCs. BURKINA FASO, MOROCCO, NIGERIA, and the DOMINICAN REPUBLIC supported discussion of this issue in a contact group. The FEDERATED STATES OF MICRONESIA underscored that the increased production of HFCs is being driven by the Protocol's agreement to phase out HCFCs.

MEXICO, emphasizing the contribution of the scientific community, underscored the need to discuss impacts of alternatives to ODS.

Co-Chair Alkemade proposed that the issue remain on the agenda for a "timed discussion." She said concerns of all parties would be reflected in the meeting report. Delegates agreed and the agenda was adopted.

CONSIDERATION OF VIENNA CONVENTION AND COMBINED VIENNA CONVENTION AND MONTREAL PROTOCOL ISSUES

FINANCIAL REPORTS AND BUDGETS OF THE TRUST FUNDS FOR THE VIENNA CONVENTION AND THE MONTREAL PROTOCOL: Preparatory Segment Co-Chair Ndiaye Cheikh Sylla (Senegal) introduced this item, to which CANADA, JAPAN, SWITZERLAND, SWEDEN, GERMANY, the GAMBIA, FRANCE, MEXICO, the US, and DENMARK volunteered to participate in a budget committee, chaired by Alessandro Giuliana Peru (Italy).

STATUS OF RATIFICATION OF THE VIENNA CONVENTION, THE MONTREAL PROTOCOL, AND THE AMENDMENTS TO THE MONTREAL PROTOCOL: The Secretariat introduced this item and parties requested a draft decision be prepared for consideration of the high-level segment.

MONTREAL PROTOCOL ISSUES

REPLENISHMENT OF THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL: Supplemental report of the TEAP replenishment task force: TEAP members Shiqu Zhang, Lambert Kuijpers, and Daniel Goldberg presented the

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supplemental report of the TEAP replenishment task force (RTF) for 2012-2014 and beyond. Total required funding is estimated at US\$460-540 million, compared to US\$390-477 million in the main report. The study is based on: HCFC Phase-Out Management Plans (HPMPs) approved by the MLF Executive Committee; six scenarios applied for not yet approved HPMPs; and production closure funding. Findings include, *inter alia*: 86 parties have submitted 2010 baseline data while 59 parties have not; production closure funding ranges from US\$193-218 million; HCFC feedstock production doubled every 3 years during the last decade; and institutional strengthening costs, using a 3% inflation rate, would increase by \$1.34 million.

Goldberg presented the RTF's assessment, proposing funding levels of approximately US\$500 million, US\$790 million, and US\$797 million, for the first, second, and third trienniums respectively.

INDIA and SWITZERLAND sought clarification on whether the closure of swing plants was eligible for funding; and Goldberg affirmed this had been considered as an option.

CHINA stressed that funding levels should be based on needs of developing countries, calling on parties to recognize the need for "efficient and sustained funding" for compliance.

CANADA requested indication of replenishment levels based on different scenarios such as: funding of 10% of a production baseline, "exclusion of funding for swing plants," and redirection of some HCFCs to feedstock uses.

Co-Chair Sylla proposed, and delegates agreed, that representatives from Belgium and St Lucia chair the Replenishment Contact Group to continue discussion of these issues. Co-Chair Sylla welcomed comments by parties on the TEAP presentation.

SWITZERLAND supported by the US, suggested an "open" first meeting of the Contact Group, with subsequent meetings being "closed." The US noted budgetary constraints, urging prudent measures to assist parties in meeting compliance and provision of assistance for transitions in the most cost-effective manner possible. He proposed limiting the number of parties in the Contact Group, suggesting ten Article 5 members and ten non-Article 5 parties.

POLAND, on behalf of 27 EU member states, expressed concerns with the calculations regarding the funding requirement for the triennium 2012-2014 in the production sector in the TEAP supplement report, and, with AUSTRALIA, committed to a successful replenishment, taking into account the current economic situation. Highlighting financial difficulties faced by non-Article 5 parties, JAPAN stressed the need to fund the MLF through both traditional funding sources, and from other sources, including Article 5 parties.

The ENVIRONMENTAL INVESTIGATION AGENCY (EIA) stated that this COP/MOP must send a clear signal that adequate financial resources are mobilized for the transition to climate-friendly alternatives.

Co-Chair Sylla asked the regional groups to nominate representatives to the Contact Group. BRAZIL, supported by MEXICO, proposed that the Replenishment Contact Group be open to all parties, while the US favored limiting its number for efficiency's sake. Co-Chair Sylla proposed, and delegates agreed, that the contact group's first meeting would be open, and that subsequent meetings may be limited to nominated representatives.

Extension of the fixed-exchange-rate mechanism: Parties agreed to forward a draft decision on extending a provision for the fixed-exchange-rate mechanism to the high-level segment (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3, XXIII/[B]).

ISSUES RELATED TO EXEMPTIONS FROM ARTICLE 2 OF THE MONTREAL PROTOCOL: Nominations for essential-use exemptions:

On this matter, the EU reminded the Medical Technical Options Committee (MTOC) that it had outstanding questions from the 31st Open-Ended Working Group (OEWG), and SWITZERLAND endorsed the TEAP recommendations. BANGLADESH, supported by the US, asked for approval of its requested essential-use exemption for metered-dose inhalers (MDIs), rather than MTOC's proposed amount, stating that it will not request further exemption in 2013. CANADA urged parties with essential-use exemptions to use stockpiled CFCs, and recommended speeding up transitions to CFC alternatives. CHINA said that such transitions take time,

underscoring complex approval and administration processes. Co-Chair Sylla invited the MTOC, China, and interested parties to submit a report to the plenary.

Marco González, Executive Secretary, informed parties on the Secretariat's authorization, in coordination with the TEAP, of an emergency exemption request by Mexico for pharmaceutical grade CFC-12 for production of MDIs, noting that Mexico agreed to offset consumption by destroying an equal amount of CFC-11.

Essential-use exemption for chlorofluorocarbon-113 for aerospace applications in the Russian Federation: The RUSSIAN FEDERATION to hold technical discussions with the EU and the US and to report back.

Nominations for 2012 and 2013 critical-use exemptions: Methyl Bromide Technical Options Committee (MBTOC) Co-Chairs Mohamed Besri (Morocco), Michelle Marcotte (Canada), Marta Pizano (Colombia) and Ian Porter (Australia) presented detailed trends in methyl bromide critical-use nominations (CUNs) and the MBTOC's recommendations, highlighting reductions and possible phase-out by 2015.

Porter sought guidance from parties in light of the reduction in CUNs, resource limitations, and the possibility of holding meetings electronically.

CUBA requested more information about criteria used in the approval process, emphasizing that the mandate given to MBTOC should be respected.

JORDAN proposed that the MLF support a project on control of methyl bromide in quarantine and pre-shipment (QPS).

Porter advised that MBTOC needs research trials and information to be provided by parties. Marcotte added that alternatives to the use of methyl bromide are specific to the commodity, crop, and situation, noting fresh dates are covered in MBTOC's reports. Pizano advised that 30-35% of present QPS use can be replaced by existing alternatives, and offered to provide further information.

The US highlighted its progress on phasing out the use of methyl bromide since 1991. He expressed concern at MBTOC's reduction of US CUNs, noting MBTOC has been unable to reach consensus, resulting in five minority reports this year. He advised that the US will submit a CRP to the Secretariat on this matter, suggesting the MBTOC continue to meet in person when "substantive work" is needed in order to reach consensus.

AUSTRALIA requested the MBTOC to provide sufficient information on methodology, so parties can better understand the conclusions.

The EU noted inconsistencies in some figures and that more work is needed to clarify the process used by MBTOC. CANADA urged MBTOC to find solutions and deal with issues of process. SWITZERLAND raised concerns regarding process of assessment of CUNs.

The Natural Resources Defense Council (NRDC) noted that the US continues to use methyl bromide for non-critical uses. He suggested that existing stocks be used against critical uses and not over and above critical uses.

Parties agreed to continue discussions bilaterally.

IN THE CORRIDORS

As outside temperatures soared in tropical Bali, COP 9/MOP 23 delegates spent significant time debating issues related to hot air -HFCs, compounds used as replacements for CFCs and HCFCs, that are also potent greenhouse gases. Parties quickly reestablished battle lines drawn at MOP 21 and MOP 22 over the prospect of amending the Protocol to address the phase-down of HFCs. While it was agreed the issue would remain on the agenda, most concluded it was unlikely that much progress could be made on the matter this week.

Some hoped to advance the issue through a Bali declaration, proposed by Indonesia. They noted the draft declaration proposes to explore the development of a road map to phase down high GWP alternatives to ODS (code for HFCs). Others were more circumspect, suggesting parties opposed to discussing HFC issues under the Protocol may not be prepared to support a declaration on developing a road map on the phase-down of such substances.

**COP 9/MOP 23 HIGHLIGHTS:
TUESDAY, 22 NOVEMBER 2011**

The preparatory segment of COP 9 to the Vienna Convention and MOP 23 to the Montreal Protocol convened for its second day in Bali, Indonesia, on Tuesday, 22 November 2011.

In the morning, delegates addressed issues related to exemptions from Article 2, and began discussions on updating the TEAP nomination process and information on ODS alternatives.

During the afternoon, delegates heard reports of the Implementation Committee and the recommendations from the Ozone Research Managers (ORM) meeting. In the late afternoon and in an evening plenary session, delegates discussed proposals to amend the Montreal Protocol.

Contact groups on replenishment and QPS uses of methyl bromide met throughout the day and into the evening.

MONTREAL PROTOCOL ISSUES

ISSUES RELATED TO EXEMPTIONS FROM ARTICLE 2 OF THE MONTREAL PROTOCOL: QPS uses of methyl bromide: The EU introduced their draft decision (UNEP/OzL.Pro.23/CRP.6) requesting, *inter alia*, the TEAP to provide data on trends in methyl bromide consumption and the Secretariat to work with the International Plant Protection Convention (IPPC) to determine phytosanitary needs. Supported by SWITZERLAND, he called for strengthened relations between the Montreal Protocol and the IPPC.

INDIA, supported by ARGENTINA, objected to the draft decision, noting the use of methyl bromide in QPS is not controlled by the Montreal Protocol. MEXICO, supported by COLOMBIA, AUSTRALIA, and JAPAN called for better information on current methyl bromide usage. INDONESIA, JAPAN, and NEW ZEALAND highlighted its use for the export of food and other biological products, with NEW ZEALAND suggesting this issue falls within the domain of sovereign and bilateral decision making.

CHINA, ARGENTINA, and INDIA said parties should provide detailed information on methyl bromide use for QPS on a voluntary basis. They also said this may require financial and technical assistance.

BRAZIL, the US, the PHILIPPINES, and MAURITIUS proposed further discussions, and delegates agreed to convene a contact group.

Global laboratory and analytical-use exemption: CHINA, AUSTRALIA, the EU, and the US announced that they had drafted a CRP proposing a grace period for developing countries on exemptions for ODS in laboratory and analytical use, to be submitted for plenary discussion.

Sustained mitigation of ODS emissions from feedstock and process-agent uses: Co-Chair Alkemade introduced a TEAP study on the feasibility of reducing or eliminating ODS emissions from feedstock and process-agent uses, highlighting, *inter alia*: a lack of viable alternatives for ODS use in feedstocks; uncertain estimates of feedstock emissions;

and inconsistencies between carbon tetrachloride emissions. The EU described intersessional progress, resulting in a CRP on feedstocks (UNEP/OzL.Pro.23/CRP.4) and one on process agents (UNEP/OzL.Pro.23/CRP.5). The US emphasized intersessional efforts to resolve top-down and bottom-up measurements of carbon tetrachloride. The EU, supported by the US, AUSTRALIA, and CANADA, but opposed by INDIA, proposed forming a contact group. Co-Chair Alkemade proposed, and parties agreed, to establish a contact group chaired by Blaise Horisberger (Switzerland).

UPDATING THE NOMINATION PROCESSES AND RECUSAL GUIDELINES FOR THE TEAP: Co-Chair Sylla introduced the agenda item on updating the nomination process and recusal guidelines for the TEAP. Delegates agreed to establish a contact group, co-chaired by Masami Fujimoto (Japan) and Javier Camargo (Colombia).

TREATMENT OF OZONE-DEPLETING SUBSTANCES USED TO SERVICE SHIPS: Co-Chair Alkemade introduced the draft decision (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3[K]) on reporting and regulation responsibilities of flag-of-convenience countries, requesting parties to provide a consensus proposal. Delegates agreed to convene a contact group co-chaired by Marissa Gowrie (Trinidad and Tobago) and Cornelius Rhein (EU).

ADDITIONAL INFORMATION ON ALTERNATIVES TO ODS: Delegates agreed to continue discussions on a proposed study of low and high-GWP alternatives to CFCs and HCFCs (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3[J]) tabled by Switzerland, in a contact group co-chaired by Leslie Smith (Grenada) and Mikkel Sørensen (Denmark).

USE OF METHYL BROMIDE IN AFRICA: Co-Chair Alkemade introduced the draft decision (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3[A]) for TEAP to review consumption trends in Africa, study phase-out implications, and recommend activities. Parties agreed to defer discussion until Egypt's CRP is available.

PROPOSED AMENDMENTS TO THE MONTREAL PROTOCOL: The Chair invited proponents to brief the plenary on elements of their proposals. Introducing its proposal (UNEP/OzLPro.23/5), the FEDERATED STATES OF MICRONESIA (FSM) appealed to parties to consider their moral and ethical obligations to include HFCs under the Montreal Protocol. The US, CANADA and MEXICO discussed the North American proposal (UNEP/OzL.Pro.23/6) and highlighted the recently released UNEP study linking climate and ozone through HFCs. The US reiterated the responsibility of parties to the Vienna Convention to prevent negative environmental impacts due to phase-out decisions.

In response to the proposals, BURKINA FASO, BRAZIL, the COOK ISLANDS, GEORGIA, SENEGAL, UGANDA, the FORMER YUGOSLAV REPUBLIC OF MACEDONIA, BENIN, COLOMBIA, NIGERIA, EU, SAINT LUCIA, GRENADA, BANGLADESH, SWITZERLAND, the

MARSHALL ISLANDS, BELARUS, AUSTRALIA, INDONESIA, the DOMINICAN REPUBLIC, JAPAN, and KENYA supported establishing a contact group to discuss the amendments. MOZAMBIQUE supported the amendment proposals.

GEORGIA emphasized that with so many critical issues to be resolved under the Kyoto Protocol, UNFCCC negotiators are unlikely to concentrate on HFCs. He called for clear signals to industry regarding phase-out of HFCs. KUWAIT and the FORMER YUGOSLAV REPUBLIC OF MACEDONIA called for urgent action, noting the high temperatures in Gulf countries, and recent flood and drought events, respectively.

ARGENTINA maintained that HFCs fall under the ambit of the Kyoto Protocol, and said the Montreal Protocol should instead focus on providing incentives for low-GWP alternatives through the MLF. VENEZUELA, CHINA, and INDIA also objected to establishing a contact group on the issue.

MALAYSIA proposed deferring discussion of the amendment proposals. Noting lack of agreement among parties to continue discussions in a contact group, Co-Chair Alkemade proposed parties continue discussions informally. The US and CANADA expressed disappointment, stating that many parties were prepared to discuss the issue. Co-Chair Alkemade suggested parties raise issues related to the proposals in the ODS Alternatives Contact Group.

POTENTIAL AREAS OF FOCUS FOR THE ASSESSMENT PANELS' 2014 QUADRENNIAL REPORTS: Co-Chair Sylla introduced the Secretariat's compilation of ideas from the assessment panels, and suggested the EU's CRP be posted online to determine parties' interest in establishing a contact group, and parties agreed.

STATUS OF NEPAL RELATIVE TO THE COPENHAGEN AMENDMENT TO THE MONTREAL PROTOCOL: Chair Sylla introduced Nepal's request for MOP to consider its compliance status. NEPAL, supported by EGYPT, GRENADA, and KUWAIT, urged parties to consider Nepal as a full compliant party, allowing it access to finance from the MLF.

A representative of the Implementation Committee outlined that this issue was considered at its meeting on 18 November, noting that Nepal is in compliance with the Protocol, but is yet to ratify the Copenhagen Amendment; therefore, the status of Nepal is that of a non-ratifying party. Parties agreed to revisit the issue at MOP 24.

COMPLIANCE AND REPORTING ISSUES CONSIDERED BY THE IMPLEMENTATION COMMITTEE: Ghazi Al Odat (Jordan) reported on compliance discussions at the ImpCom's 46th and 47th meetings. He presented draft decisions on: parties who have not submitted reports; non-compliance in Libya, Iraq, and Yemen; trade with Kazakhstan by the EU and the Russian Federation; revisions of baseline numbers; decimal places; and licensing. Co-Chair Alkemade proposed, and delegates agreed, to forward the draft decisions (UNEP/OzL.Pro.23/CRP.3) to the high-level segment.

VIENNA CONVENTION ISSUES

REPORT OF THE EIGHTH MEETING OF THE OZONE RESEARCH MANAGERS OF THE PARTIES TO THE VIENNA CONVENTION: Michael Kurylo, Chair of the 8th Ozone Research Managers (ORM) meeting, presented recommendations, including: continuing and expanding systematic tracking and analysis of ozone and climate-related gases; study of the relationships between ozone and climate variability and change; data archiving; and national capacity building (UNEP/OzL.Conv.9/6).

CHINA expressed concern over duplication of observation work under the climate change framework. Kurylo responded that efforts would be complementary.

SRI LANKA introduced a draft decision (CRP.2) adopting the ORM recommendations, and AUSTRALIA suggested discussion on this be combined with the draft decision on the Vienna Convention Trust Fund financing of such activities (CRP.1). CHINA requested more time for discussion, as CRP.2 refers to increasing concentrations of GHGs and associated climate

change. Brazil shared China's concerns regarding the climate change regime, which, he said, has a systematic monitoring and observatory programme. The EU supported the decision, while the US proposed further discussion.

STATUS OF THE GENERAL TRUST FUND FOR FINANCING ACTIVITIES ON RESEARCH AND SYSTEMATIC OBSERVATIONS RELEVANT TO THE VIENNA CONVENTION: The Secretariat introduced the Trust Fund discussion. Sri Lanka also introduced a draft decision on financing activities (UNEP/OzL.Conv.9/CRP.1), which the EU supported.

Co-Chair Sylla suggested, and delegates agreed, to revisit the discussion of Vienna Convention issues later in the week, once parties have considered the draft decisions.

OTHER MATTERS

Co-Chair Alkemade reported that Indonesia is further revising the Bali Declaration (CRP.8), taking into consideration the views expressed by other parties during informal consultations.

CONTACT GROUPS

REPLENISHMENT: Co-Chaired by Jozéf Buys (Belgium) and Donnalyn Charles (Saint Lucia), the Contact Group met in the morning, afternoon, and evening. In its first meeting, the parties discussed the composition of the group. Parties agreed to a limited number of members, with some favoring 12 from Article 5 parties and 12 from non-Article 5 parties, while others preferred 11 from each. After further deliberations, Co-Chair Buys proposed, and the group agreed, that the regional groups would nominate representative parties, with 11 from Article 5 parties and 11 from non-Article 5 parties.

In the afternoon session, TEAP introduced five production sector funding scenarios, which the group discussed. One delegate asked about the funding allocation for 2015 for 10% reduction of HCFCs, with the Secretariat confirming an allocation of US\$51.76 million.

In the evening, Colombia presented a list of 11 Article 5 parties nominated to the contact group. The TEAP presented a revised table on all the non-HCFC production elements of the replenishment with total funding requirements of US\$316.86-339.75 million, which it reported reflected recent Executive Committee decisions.

QPS USES OF METHYL BROMIDE: On Tuesday afternoon, the EU outlined its proposed decision (CRP.6) and parties discussed, *inter alia*: collation of data on current usage of methyl bromide as a phytosanitary measure; provision of data on methyl bromide used for QPS applications; and information on alternatives. Some parties discussed the voluntary nature of reporting and the accuracy of data submitted as a basis of analysis by the TEAP and MBTOC. The contact group agreed to reconvene when co-chairs are identified.

IN THE CORRIDORS

As parties haggled on Tuesday over the balance of representatives participating in the replenishment negotiations, and donors hinted they were short on funds, many predicted a fraught few days.

On the sidelines, environmental NGOs were busy drawing links between the replenishment process and climate change mitigation activities. They, and some Article 5 parties, argued that replenishment negotiations provide an opportunity to "make good" on the original promise of climate benefits from HCFC phase-out. Recalling the TEAP prediction of mitigation benefits through the conversion to climate-friendly alternatives and energy-efficient technologies (avoiding up to 17.5-25.5 gigatonnes CO₂ equivalent), NGOs said parties must commit adequate funds to ensure this transition. They said investments into low-GWP alternative technologies would be consistent with the frequent calls for transition to a green economy, through investment in commercializing such alternatives.

COP 9/MOP 23 HIGHLIGHTS: WEDNESDAY, 23 NOVEMBER 2011

The preparatory segment of COP 9 to the Vienna Convention and MOP 23 to the Montreal Protocol convened for its third day in Bali, Indonesia, on Wednesday, 23 November 2011.

Throughout the day, delegates worked in contact groups on replenishment, ODS alternatives, process agents and feedstocks, QPS use of methyl bromide, ODS service to ships, and TEAP nominations.

In the late afternoon, delegates attended the opening of the high-level segment. In the evening, plenary convened to hear reports from the contact groups and consider associated draft decisions.

CONTACT GROUPS

REPLENISHMENT: Co-chaired by Jozéf Buys (Belgium) and Donnalyn Charles (Saint Lucia), the group met in the morning, afternoon, and evening.

In the morning, TEAP presented a new table on all the non-HCFC production elements of replenishment from 2012-2014, with amendments made based on Tuesday's discussions. The total funding requirements are US\$314.13-337.03 million. The group agreed on US\$1.3 million for CFC production by India, and US\$7.91 million for methyl bromide. Delegates did not agree on ODS destruction (US\$15.25 million), with Article 5 parties supporting the line and figure, and non-Article 5 parties asking for its deletion. Regarding the figure of US\$4.8 million for Stage II preparation of HPMPs, non-Article 5 parties stated that since significant experience had been accumulated in the first stage, this figure should be lowered, while Article 5 parties supported it, with one party stating the figure is too low.

In the afternoon, the group discussed supporting activities (US\$67.47 million). Non-Article 5 parties suggested lowering the figure while other parties supported maintaining it. On Future HPMPs (US\$27.43 - 50.33 million), TEAP explained that it was based on 10%-20% reduction of the 2009-2010 average consumption. Article 5 parties supported the higher figure, while non-Article 5 parties supported the lower one. On institutional strengthening (US\$22 million), one Article 5 party introduced a draft decision (CRP.7) on accounting for inflation in funding for institutional strengthening projects and, supported by other Article 5 parties, suggested increasing the figure to US\$24.27 million, to which non-Article 5 parties objected. One non-Article 5 party raised the issue of double accounting with the line of "HPMP commitments", and asked for its removal. TEAP presented a revised table on production sector scenarios and funding, and this was briefly discussed.

In the evening, TEAP delegates discussed the above-mentioned tables on funding and presented requirements from 2012-2014 with further amendments.

QPS USES OF METHYL BROMIDE: The group chaired by Alice Gaustad (Norway) met on Wednesday to discuss a draft decision on QPS uses of methyl bromide (CRP.6). Parties clarified the type of data recorded and collated on current usage of methyl bromide for phytosanitary purposes and agreed to include this in the draft decision.

Parties also agreed to include reference to the process of collating data on quantities of methyl bromide used for QPS, descriptions of any articles fumigated, and to distinguish between methyl bromide used on import or export commodities.

The group discussed and agreed to include references to the sharing of information on alternatives approved by their respective national plant protection organizations, with parties to the IPPC. They noted the importance of disseminating accurate data.

ODS ALTERNATIVES: The Contact Group, co-chaired by Mikkel Sørensen (Denmark) and Leslie Smith (Grenada), met in the morning and evening. Participants discussed elements of the draft decision on additional information on alternatives to ODS (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3[J]). They deliberated on the content of a proposed report to be prepared by the TEAP for consideration by the OEWG at its 32nd meeting.

Parties discussed asking the TEAP to report on low-GWP and high-GWP alternatives to ODS. Some parties preferred the TEAP focus on only high-GWP alternatives, but most parties preferred the TEAP look at both low- and high-GWP alternatives. Several non-Article 5 parties emphasized the need to integrate costs of alternative technologies in the report.

Parties deliberated references to the UNFCCC and IPCC in the text, and ways to incorporate their work into the TEAP report.

PROCESS AGENTS AND FEEDSTOCKS: The Contact Group, chaired by Blaise Horisberger (Switzerland) met in the morning. Deliberations focused on the two CRPs submitted to the COP 9/MOP 23 on process agents (CRP.5) and feedstocks (CRP.4).

Participants first focused on uses of controlled substances as process agents. The EU introduced its proposed decision (CRP.5), noting that Tables A and B, contained in the draft decisions annex, and which the draft decision seeks to update, contain lists of uses of controlled substances as process agents and limits for process agents uses.

One party expressed concern about the classification of its use of carbon tetrachloride (CTC) in vinyl chloride monomer (VCM) production for process agent purposes, arguing that it is actually used as feedstock. Another party highlighted that the only difference in treatment of controlled substances considered as process agents and feedstocks was that the Protocol requires emission reporting for process agents. After protracted discussion, parties agreed to ask TEAP to assess the situation and for the issue to be considered again at MOP 24. In the

interim, it was agreed that the party's CTC use in VCM would be classified as a feedstock. The Contact Group will convene again on Thursday.

ODS SERVICE TO SHIPS: The contact group, co-chaired by Marissa Gowrie (Trinidad and Tobago) and Cornelius Rhein (EU), discussed the draft decision (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3[K]) on reporting and regulation responsibilities of ODS consumption on ships in the morning and afternoon. Participants agreed to use "ships from other flag states" rather than the term "flags-of-convenience" throughout the document. The Secretariat stated that intersessional communication from 18 parties illustrates the diverse ways in which parties treat deliveries of ODS and HCFCs to ships, with the majority considering deliveries as exports. Parties agreed in principle that more information is needed on how parties treat sales in serving ships; and the Secretariat could consult with relevant bodies, particularly the IMO and World Customs Organization, to collect information on how they regulate trade in and reporting of ODS onboard ships, though text on the latter remains bracketed. Parties agreed to request the Secretariat to prepare a document for the 32nd meeting of the OEWG on current ODS sales to ships for onboard servicing and use, including how parties calculate consumption. Parties also discussed, *inter alia*: jurisdictional concerns on ODS management on ships; classification of ODS as imports versus exports; and under-reporting of import consumption because some flag ships do not enter national waters.

TEAP NOMINATIONS: Co-Chairs Masami Fujimoto (Japan) and Javier Camargo (Colombia) facilitated discussion on nominations to TEAP, Technical Options Committees (TOCs) and temporary subsidiary bodies, especially on how to ensure balanced perspectives and geographic representation, in the draft decision (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3, XXIII/[D]). Parties introduced text stipulating that experts with "appropriate expertise" may be nominated only by their passport countries. On length of service, they agreed to limit terms of experts nominated at this meeting to four years, with options for re-nominations.

Parties also discussed formalizing the relationship of the Executive Secretary in relation to the TEAP, the type of advice he/she would provide, and the Secretariat's ability to give support. Some parties expressed concern regarding potential for intervention by the Secretariat in parties' decision making. Parties agreed that the Ozone Secretariat should attend TEAP meetings wherever possible and provide ongoing institutional advice on administrative matters.

They also suggested that appointments to TEAP, but not TOCs, be approved by the MOPs and that parties consider membership sizes of subsidiary bodies, to ensure consistency with their respective workloads.

OPENING OF THE HIGH-LEVEL SEGMENT

Anak Agung Alit Sastrawan, representing the Governor of Bali, welcomed delegates and explained that the increasing population in Bali is putting pressure on the island's ecosystems. He said that ODS are still used in Bali due to lack of widespread awareness. Sastrawan wished COP 9/MOP 23 a successful meeting and expressed hope that effective recommendations will be made.

Marco Gonzáles, Executive Secretary, Ozone Secretariat, noted that the Protocol is nearing its 25th year of implementation. He underscored that the Protocol is grounded in core sustainable development principles, including the precautionary principle, and common but differentiated responsibilities. Gonzáles reflected on the Protocol's successful "start and strengthen" approach, highlighting numerous adjustments and amendments to strengthen the Protocol. Despite its success, he said the Protocol still faced several challenges including the battle to comply with HCFC phase-out targets over the next four years. Acknowledging the economic challenges faced by many parties, Gonzales encouraged parties to approach the replenishment negotiations with a sense of understanding and compromise.

Indonesian Minister of Environment Balthasar Kambuaya opened the high-level segment of the meeting with a call to delegates to ensure that phase-out programmes for ODS are comprehensively and effectively implemented, emphasizing the linkages between measures needed for recovery of the ozone layer as well as reduction of GHG emissions and low-carbon development.

PLENARY

Delegates convened in plenary during the evening and considered decisions to be forwarded to the high-level segment.

Parties forwarded the draft decision on adoption of new destruction technologies for ODS by Australia and Canada (CRP.1/Rev.1) to the high-level segment for consideration.

Parties agreed to further discuss the following CRPs on Thursday: mobilization of financing for the accelerated phase-out of HCFCs in Africa (CRP.2); sustained mitigation of emissions of ODS from feedstocks (CRP.4); uses of controlled substances as process agents by the EU (CRP.5); and QPS uses of methyl bromide (CRP.6).

INDIA introduced a draft decision (CRP.11) on funding for HCFC production facilities to confirm the intent of decision XIX/6, to provide stable and sufficient funding through the MLF for accelerated HCFC phase-out and to urge the Executive Committee to finalize guidelines on this matter urgently. The US, AUSTRALIA, and CANADA noted that the Executive Committee is working on this and questioned which agenda item this decision was classified under. After lengthy discussion on the matter Co-Chair Sylla recommended, and delegates agreed, that India should raise the issues addressed in this CRP in the Contact Group on Replenishment.

The EU introduced a draft decision on potential areas of focus in 2014 quadrennial reports of the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the TEAP (CRP.12). Interested parties agreed to discuss informally with the EU.

CHINA introduced a draft decision on essential-use nominations for controlled substances for 2012 (CRP.13), proposing Bangladesh lead the follow-up of work where consensus has not been reached, and parties agreed to revisit the issue on Thursday.

On the phase-out of HFC-23, the US presented the draft decision on HFC-23 emissions from HCFC- 22 production (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3, XXIII/[C]). INDIA, CHINA, BRAZIL, ARGENTINA, and VENEZUELA said the issue is outside the Protocol. The EU and CANADA emphasized the value of addressing both climate and ozone issues. The chair noted consensus could not be reached on this matter and the matter was deferred.

IN THE CORRIDORS

On a day crammed with back-to-back contact groups, delegates were seen running from one room to the next in an attempt to keep up with parallel deliberations on key substantive matters. Reports on progress from the MLF replenishment group indicated parties were facing "many differences."

As participants arrived for the opening of the high-level segment they were greeted by high-level hopes that parties can overcome their differences – drawing on the spirit of understanding and compromise that the Protocol has come to be known for.

The opening ceremony also provided delegates a surprise opportunity to literally "get in tune" with each other, with a lesson from a musician in the playing of the traditional Balinese *angklung*. Each participant received a bamboo *angklung* and a quick lesson in technique. COP 9/MOP 23 participants then played "You Raise Me Up", made famous by Josh Groban.

As the fun subsided and the plenary got back down to business in the early evening Co-Chair Sylla observed with optimism, that delegates "may not be able to play every single note" but could still endeavour to be harmonious. As the evening plenary got under way, however, it appeared that musical accord may have given way to diplomatic discord.

**COP 9/MOP 23 HIGHLIGHTS:
THURSDAY, 24 NOVEMBER 2011**

The high-level segment of COP 9 to the Vienna Convention and MOP 23 to the Montreal Protocol convened for its first day in Bali, Indonesia, on Thursday, 24 November 2011.

Throughout the day delegates convened in plenary throughout the day to hear high-level statements from heads of delegations.

Contact groups on replenishment, ODS alternatives, QPS use of methyl bromide, and process-agents and feedstocks worked throughout the day.

HIGH-LEVEL SEGMENT

Patali Ranawaka, Minister of Environment, Sri Lanka, President of COP 8, emphasized the cooperative nature of participants in contributing to the successful implementation of the Montreal Protocol. He stressed the need for increased funding of research activities, citing Sri Lanka's complete phase-out of methyl bromide in 2006 in its tea plantation as a result of research into alternatives.

Deborah Owens (UK), MOP 22 President, hoped delegates would negotiate in a spirit of compromise and consensus. On replenishment, she stressed the importance of sending positive signals to Article 5 countries to sustain their efforts to phase out HCFCs and other remaining ODS.

ORGANIZATIONAL MATTERS

COP 9 elected by acclamation Mikheil Tushishvili (Georgia) as President, Alain Wilmart (Belgium), Marissa Gowrie (Trinidad and Tobago), Ezzat Agaiby (Egypt), as Vice Presidents, and Arief Yuwono (Indonesia) as Rapporteur.

MOP 23 elected by acclamation Sianga Abilio (Angola) as President, Azra Rogovic-Grubic (Bosnia and Herzegovina), Javier Ernesto Camargo (Colombia), as Vice Presidents, and Bernard Made (Canada) as Rapporteur.

Delegates also adopted the agenda (UNEP/OzL.Conv.9/1-UNEP/OzL.Pro.23/1).

PRESENTATIONS OF ASSESSMENT PANELS ON THEIR QUADRENNIAL ASSESSMENT

John Pyle reported on behalf of the assessment panels, that the Montreal Protocol continues to work effectively, noting that ODS levels in the atmosphere have declined, providing co-benefits to climate systems. He described three synthesis report findings on: coupled interactions of stratospheric ozone and climate change; potential climate implications of HFCs, which have low-ODP but high-GWP; and further control of methyl bromide.

Paul Newman presented key findings of the Scientific Assessment Panel (SAP): declining ODS levels; coupled ozone and climate change interactions; persistence of Antarctic and global ozone holes; and influences on global UV changes.

Janet Bornman explained that the Environmental Effects Assessment Panel (EEAP) examined the effects of ozone depletion and climate change on UV radiation in relation to human health, terrestrial and aquatic ecosystems, biogeochemical cycles, air quality, and construction materials. Bornman also noted there would have been three times the amount of UV radiation without the Montreal Protocol. Nigel Paul emphasized that current and future change interactions contribute to the uncertainty of many environmental effects.

The TEAP 2010 Assessment Report was presented jointly by Co-Chairs Ian Rae (CTOC), Miguel Quintero (FTOC), Sergey Kopylov (HTOC), Marta Pizano (MBTOC), Lambert Kuijpers (RTOC), and Helen Tope (MTOC), who reported their respective TOCs. Tope presented the key conclusions, highlighting that: the Montreal Protocol is working, with progress in every sector and many ODS applications phased out world-wide; technology is not yet available for replacement of some ODS uses; 20-35% of present global use of methyl bromide can be replaced with alternatives available today; leapfrog technology is available in some applications; and banked ODS are leaking.

PRESENTATION BY THE MULTILATERAL FUND

Chair of the Executive Committee of the MLF, Patrick McInerney (Australia), outlined the work of the Executive Committee from its 62nd-64th meetings (UNEP/OzL.Pro.23/8), noting it had approved 349 projects and activities, equating to over US\$270 million. He also noted, *inter alia*: the establishment of a window for ODS destruction for low-volume consuming countries; and the Committee's progress in agreeing on guidelines for the production sector.

He outlined efforts by the UNDP, UNEP, the UN Industrial Development Organization (UNIDO), and the World Bank to assist in implementation of the Protocol, particularly for Article 5 countries, including in: HCFC phase-outs, assessing new technology developments, progressing ODS destruction projects, and assisting newly appointed ozone officers.

STATEMENTS BY HEADS OF DELEGATIONS

SRI LANKA outlined its efforts in planting over one million trees, as well as completely phasing out CFCs. The MALDIVES underscored its efforts to become the first carbon-neutral country, and stressed the need for a mechanism under the MLF to fund projects based on ozone and climate co-benefits.

IRAN highlighted the importance of addressing energy efficiency and GWP issues in ozone projects. INDONESIA highlighted the need to explore incentives for all partners in ODS destruction and stressed that information sharing on alternatives should be complemented by capacity building and technological transfer.

Stating that stable and sufficient financing was necessary for Article 5 countries, CHINA said the upcoming UNFCCC COP may address HFC reduction, and called for increased cooperation between the Protocol and the UNFCCC.

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JAPAN highlighted its effective and efficient technologies to destroy ODS, and offered to share these with Article 5 countries.

SWITZERLAND underscored the importance of addressing HFCs under the Protocol, cautioning that failure to do so may cause HFC emissions to offset the climate benefits of the Protocol. She also offered to host MOP 24 in Geneva, Switzerland.

The EU outlined its efforts to review its fluorinated gases legislation and to reach ambitious targets, and stressed the need for the Protocol to seize the opportunity to mitigate climate change in a cost-effective manner.

LAOS discussed its efforts in revising national legislation on ozone. CAMBODIA shared its experiences in phasing out halons, CFCs, and CTC. PANAMA emphasized the necessity for increased finance for Article 5 parties for institutional strengthening. INDIA stressed remaining challenges in ozone protection, including sustainable financing. GUINEA noted its intent to ratify the Copenhagen, Montreal, and Beijing Amendments.

KENYA highlighted the need to ensure that solving one environmental problem does not lead to the creation of another. PAKISTAN asked the Montreal Protocol to do whatever possible to cooperate on climate change and emphasized institutional strengthening as essential for the Protocol's continued success. UZBEKISTAN described its successful national program and commitment to the Vienna Convention and Montreal Protocol.

ZIMBABWE described the challenges of safely disposing of ODS seized by customs officials, proposing local or mobile containment mechanisms for seized ODS. IRAQ requested special consideration of the high temperatures recently experienced in West Asia.

COTE D'IVOIRE said it intended to ratify all Protocol Amendments, and offered to host MOP 25. BAHRAIN stressed it requires technology and financial assistance, and objected to addressing HFCs under the Montreal Protocol. PALAU said it will freeze consumption of HCFCs in 2013, contributing to achieving 10% HCFC reduction by 2015. MALAYSIA said HFCs should not be addressed under the Protocol and proposed that the MLF provide sufficient funds for destruction of ODS banks.

The SEYCHELLES requested consistent support for their efforts in meeting their obligations under the Protocol, and supported HFC amendment proposals. Nepal reported on its HPMP.

The REPUBLIC OF SOUTH SUDAN stated its commitment to: maintaining a country free of ODS; ensuring environmental rehabilitation and sustainability; and ratifying the Vienna Convention and the Montreal Protocol.

PLENARY

In the late afternoon, the preparatory segment reconvened. Michael Church (Grenada) reported on his efforts to extend Marco González's term as Executive Secretary of the Ozone Secretariat, and stated that the Secretary General has extended his tenure by two years, through October 2013.

The EU reported on the consultations on the draft decision on potential areas of focus for the 2014 quadrennial reports of SAT, EEAP, and TEAP (CRP.12), noting several amendments, and parties agreed to forward the draft decision to the high-level segment for adoption.

BURKINA FASO informed parties it has withdrawn its proposed decision on mobilization of financing for the accelerated phase-out of HCFCs in Africa from sources other than MLF (CRP.2).

Parties agreed to forward the draft decision on endorsing a new Co-Chair of the CTC and a senior expert of the TEAP (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3, XXIII/[I]) to the high-level segment for its consideration.

CONTACT GROUPS

REPLENISHMENT: Co-chaired by Jozéf Buys (Belgium) and Donnalyn Charles (Saint Lucia), the group met in the morning, afternoon, and in the early evening in a closed session. Parties discussed an overall replenishment range, and in the evening session began narrowing that range.

ODS ALTERNATIVES: The Contact Group, co-chaired by Mikkel Sørensen (Denmark) and Leslie Smith (Grenada), discussed and agreed on the draft decision (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3 XXIII/[J]) requesting TEAP to conduct a joint study with other scientific experts for consideration at the 32nd OEWG, to provide information on alternatives to HCFCs. Discussion focused on whether current use of CFCs as refrigerants in chillers with a long lifespan is included in the definition of "consumption" under countries' Protocol obligations. Parties decided to remove proposed text asking the TEAP to consider availability and market penetration of alternatives, and exclude CFCs from the study. Also deleted were draft preambular paragraphs recognizing and expressing appreciation of a 2005 Special Report produced jointly with the IPCC on safeguarding the ozone layer and the global climate system, and text proposing to study the extent to which the Executive Committee's funding guidelines provide for full incremental costing of the adoption of low-GWP HCFC alternatives.

PROCESS AGENTS AND FEEDSTOCKS: The Contact Group, chaired by Blaise Horisberger, (Switzerland) met during the afternoon and finalized the decision on process-agents (CRP.5). The EU then introduced its draft decision on feedstocks (CRP.4) which *inter alia*: calls on parties to refrain from commissioning new production facilities planning to use ODS as feedstocks; requests parties to provide a list of processes in which ODS feedstock is used, and those which have been converted; and requests TEAP to continue its work and provide information on alternatives to ODS for feedstock use. In the discussion, one party asserted that feedstocks were not controlled under the Protocol. Another party suggested refocusing the CRP resolving the discrepancy between reported and observed emissions of ODS, specifically CTC in feedstock uses. Parties agreed to work together informally to draft a revised decision.

ODS SERVICE TO SHIPS: In the contact group, co-chaired by Marissa Gowrie (Trinidad and Tobago) and Cornelius Rhein (EU), parties agreed to insert a paragraph requesting the Ozone Secretariat to work with relevant bodies, including the IMO and the WCO, on how these bodies address trade in ODS onboard ships, the use of ODS onboard ships, and to provide a general overview of the framework applied by these bodies to manage relevant activities. Parties debated a reference to calculating consumption of sales of ODS to ships, ultimately deleting the proposed paragraph to retain the focus on gathering information for MOP 24 to take an informed decision.

IN THE CORRIDORS

Increasing pressure on negotiators on Thursday came to boiling point in the contact group discussion of alternatives to ODS, as negotiators struggled to reach agreement on what seemed to be a simple request to TEAP to undertake another joint study with the Intergovernmental Panel on Climate Change.

As preambular text referring to a previous ozone and climate study was dumped, one delegate noted in exasperation "an almost philosophical issue...of negating history". Others expressed fears that the Protocol is entering dangerous territory, as positions begin to harden and what should be purely information gathering and technical work becomes increasingly politicized.

Simultaneously, the MOP 22 "open" North American Declaration on Low-GWP Alternatives began circulating again, apparently aiming to move signatories from 91 to over 100. While it was generally accepted that it was too late in the COP/MOP for the amendment proposals to gain traction, even proposal proponents wondered if the Declaration could muster enough groundswell by MOP 24 to bear any influence on those so deeply opposed to addressing HFCs under the Protocol.

ENB SUMMARY AND ANALYSIS: The *Earth Negotiations Bulletin* summary and analysis of COP 9/MOP 23 will be available on Monday, 28 November 2011 online at: <http://www.iisd.ca/ozone/mop23/>

SUMMARY OF THE TWENTY-THIRD MEETING OF THE PARTIES TO THE MONTREAL PROTOCOL AND NINTH MEETING OF THE CONFERENCE OF THE PARTIES TO THE VIENNA CONVENTION: 21-25 NOVEMBER 2011

The ninth Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and the twenty-third Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (COP 9/MOP 23) took place in Bali, Indonesia, from 21-25 November 2011. Over 500 participants attended the joint meeting, representing governments, UN agencies, intergovernmental and non-governmental organizations, academia, industry, and the agricultural sector.

COP 9/MOP 23 opened with a preparatory segment from Monday to Wednesday that addressed the COP/MOP's substantive agenda items and related draft decisions. This was followed by a high-level segment, which opened on Wednesday evening and continued Thursday and Friday and adopted the decisions forwarded to it by the preparatory segment. As the preparatory segment did not conclude its work on a number of contentious issues by Wednesday, it reconvened several times during the high-level segment to address outstanding issues, including the replenishment of the Multilateral Fund (MLF).

Despite, in the words of some delegates, being one of the most difficult and tiresome meetings in the Protocol's recent history, COP /MOP 23 concluded late Friday evening with eventual agreement on key issues. COP 9/MOP 23 adopted more than 25 decisions, including: a US\$450 million replenishment of the MLF for the period of 2012-2014; issues related to exemptions; mitigation of ozone depleting substances (ODS) emissions from feedstock and process-agent uses; updating the nomination processes and recusal guidelines for the Technology and Economic Assessment Panel (TEAP); the treatment of ODS used to service ships; and additional information on alternatives.

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 were first raised in the early 1970s. At that time, scientists warned that the release of 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 to this growing concern, the United Nations Environment Programme (UNEP) convened a conference in March 1977 that adopted a World Plan of Action on the Ozone Layer and established a Coordinating Committee to guide future international action on ozone protection.

VIENNA CONVENTION: In May 1981, the UNEP Governing Council launched negotiations on an international agreement to protect the ozone layer and, in March 1985, the Vienna Convention for the Protection of the Ozone Layer was adopted. The Convention called for cooperation on monitoring, research and data exchange, but did not impose obligations to reduce the use of ODS. The Convention now has 196 parties.

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MONTREAL PROTOCOL: In September 1987, efforts to negotiate binding obligations to reduce the use of ODS led to the adoption of the Montreal Protocol on Substances that Deplete the Ozone Layer. The Protocol introduced control measures for some CFCs and halons for developed countries (non-Article 5 parties). Developing countries (Article 5 parties) were granted a grace period allowing them to increase their ODS use before taking on commitments. The Protocol currently has 196 parties.

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

LONDON AMENDMENT AND ADJUSTMENTS:

Delegates to the second Meeting of the Parties (MOP 2), which took place in London, UK, in 1990, tightened control schedules and agreed to add ten more CFCs to the list of ODS, as well as carbon tetrachloride (CTC) and methyl chloroform. To date, 196 parties have ratified the London Amendment. MOP-2 also established the MLF, which meets the incremental costs incurred by Article 5 parties in implementing the Protocol's control measures and finances clearinghouse functions, including technical assistance, information, training, and the costs of the MLF Secretariat. The Fund is replenished every three years, and has received pledges of over US\$2.8 billion since its inception.

COPENHAGEN AMENDMENT AND ADJUSTMENTS:

At MOP 4, 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 and to establish an Implementation Committee (ImpCom). The ImpCom examines cases of possible non-compliance by parties, and makes recommendations to the MOP aimed at securing full compliance. To date, 194 parties have ratified the Copenhagen Amendment.

MONTREAL AMENDMENT AND ADJUSTMENTS: At MOP 9, held in Montreal, Canada, in 1997, delegates agreed to a new licensing system for the import and export of ODS, in addition to tightening existing control schedules. They also agreed to ban trade in methyl bromide with non-parties to the Copenhagen Amendment. To date, 185 parties have ratified the Montreal Amendment.

BEIJING AMENDMENT AND ADJUSTMENTS: At MOP 11, held in Beijing, China, in 1999, delegates agreed to controls on bromochloromethane and additional controls on HCFCs, and to reporting on methyl bromide for quarantine and pre-shipment (QPS) applications. At present, 172 parties have ratified the Beijing Amendment.

MOP 15 AND FIRST EXTRAORDINARY MOP: MOP 15, held in Nairobi, Kenya, in 2003, resulted in decisions on issues including the implications of the entry into force of the Beijing Amendment. However, disagreements surfaced over exemptions allowing the use of methyl bromide beyond 2004 for critical uses where no technically or economically feasible alternatives were available. Delegates could not reach agreement and agreed to convene an "extraordinary" MOP. The first Extraordinary Meeting of the Parties to the Montreal Protocol (ExMOP 1)

took place in March 2004, in Montreal, Canada. Parties agreed to critical-use exemptions (CUEs) for methyl bromide for 2005 only. The introduction of a "double-cap" concept distinguishing between old and new production of methyl bromide was central to this compromise. Parties agreed to a cap on new production of 30% of parties' 1991 baseline levels, meaning that where the capped amount was insufficient for approved critical uses in 2005, parties were required to use existing stockpiles.

MOP 16 AND EXMOP 2: MOP 16 took place in Prague, the Czech Republic, in 2004. Work on methyl bromide exemptions for 2006 was not completed and parties decided to hold a second ExMOP. ExMOP 2 was held in July 2005, in Montreal, Canada. Parties agreed to supplementary levels of CUEs for 2006. Under this decision, parties also agreed that: CUEs allocated domestically that exceed levels permitted by the MOP must be drawn from existing stocks; methyl bromide stocks must be reported; and parties must "endeavor" to allocate CUEs to the particular use categories specified in the decision.

COP 7/MOP 17: MOP 17 was held jointly with the seventh Conference of the Parties to the Vienna Convention (COP 7) in Dakar, Senegal in December 2005. Parties approved essential-use exemptions for 2006 and 2007, supplemental CUEs for 2006 and CUEs for 2007, and production and consumption of methyl bromide in non-Article 5 parties for laboratory and analytical critical uses. Other decisions included a US\$470.4 million replenishment of the MLF for 2006-2008, and agreement on terms of reference for a feasibility study on developing a monitoring system for the transboundary movement of controlled ODS.

MOP 18: MOP 18 took place in New Delhi, India from 30 October - 3 November 2006. Parties adopted decisions on, *inter alia*: future work following the Ozone Secretariat's workshop on the Special Report of the Intergovernmental Panel on Climate Change (IPCC) and the TEAP; difficulties faced by some Article 5 parties manufacturing CFC-based metered dose inhalers (MDIs); treatment of stockpiled ODS relative to compliance; and a feasibility study on developing a system for monitoring the transboundary movement of ODS.

MOP 19: MOP 19 took place in Montreal, Canada in September 2007. Parties agreed to the accelerated phase-out of HCFCs, and also adopted decisions on: essential-use nominations and other issues arising out of the 2006 reports of the TEAP; critical-use nominations for methyl bromide; and monitoring transboundary movements and illegal trade in ODS.

COP 8/MOP 20: MOP 20 was held jointly with COP 8 of the Vienna Convention in Doha, Qatar in November 2008. Parties agreed to replenish the MLF with US\$490 million for 2009-2011 and adopted other decisions concerning, *inter alia*: the environmentally sound disposal of ODS; approval of 2009 and 2010 CUEs for methyl bromide; and compliance and reporting issues. This meeting was the Protocol's first paperless meeting.

MOP 21: MOP 21 took place in Port Ghalib, Egypt, from 4-8 November 2009 and adopted decisions on: alternatives to HCFCs; institutional strengthening; essential uses; environmentally sound management of banks of ODS; methyl bromide; budget; and data and compliance issues. Delegates considered a proposal to amend the Montreal Protocol to include hydrofluorocarbons (HFCs), but this was not agreed.

MOP 22: MOP 22 took place in Bangkok, Thailand, from 8-12 November 2010 and adopted decisions on, *inter alia*: the terms of reference for the TEAP study on the MLF replenishment and for the evaluation of the financial mechanism; and assessment of technologies for ODS destruction. Delegates considered, but did not agree to, two proposals to amend the Montreal Protocol to address HFCs, one submitted by the US, Mexico, and Canada, and another submitted by the Federated States of Micronesia.

CURRENT ODS CONTROL SCHEDULES: Under the amendments to the Montreal Protocol, non-Article 5 parties were required to phase out production and consumption of: halons by 1994; CFCs, CTC, hydrobromochlorofluorocarbons and methyl chloroform by 1996; bromochloromethane by 2002; and methyl bromide by 2005. Article 5 parties were required to phase out production and consumption of hydrobromochlorofluorocarbons by 1996 and bromochloromethane by 2002. Article 5 parties must still phase out: production and consumption of CFCs, halons and CTC by 2010; and methyl chloroform and methyl bromide by 2015. Under the accelerated phase-out of HCFC adopted at MOP 19, HCFC production and consumption by Article 2 countries was to be frozen in 2004 and phased-out by 2020, while in Article 5 parties, HCFC production and consumption is to be frozen by 2013 and phased-out by 2030 (with interim targets prior to those dates, starting in 2015 for Article 5 parties). There are exemptions to these phase-outs to allow for certain uses lacking feasible alternatives.

COP 9/MOP 23 REPORT

PREPARATORY SEGMENT

On Monday morning, Marco González, Executive Secretary, Ozone Secretariat, opened the joint meeting and described the accomplishments of the Montreal Protocol, *inter alia*: full compliance in phasing out CFCs and halons by over 95% of the parties in 2010; and the phase-out of 98% of all substances controlled under the Protocol. He urged parties to continue their efforts and commitments, and underscored linkages with climate change and sustainable development, noting that one treaty and one group alone cannot protect the complex global environment.

The Indonesian Minister for Environment, Balthasar Kambuaya, opened MOP 23, and introduced the draft Bali declaration, as a way forward for the transition towards low global warming potential alternatives (GWP) to ODS.

The Preparatory Segment was co-chaired by Gudi Alkemade (the Netherlands) and Ndiaye Cheikh Sylla (Senegal). Co-Chair Alkemade introduced the draft agenda (UNEP/OzL.Conv.9/1-UNEP/OzL.Pro.23/1). In response, Burkina Faso proposed consideration of its draft decision to mobilize funds other than the MLF to accelerate the phase-out of HCFCs in Africa, and delegates agreed to consider it under other matters. Indonesia proposed, and parties agreed, to discuss consider a Bali declaration, under other matters.

India, supported by China, Brazil and others, proposed deleting the agenda item on the two proposals to amend the Montreal Protocol to include HFCs, stating that HFCs are outside the mandate of the Protocol. Highlighting that the amendment proposals on HFCs were submitted in accordance with correct procedure six months in advance of MOP 23, the

US, supported by the European Union (EU) and Switzerland, said this issue should be discussed in a contact group. The EU and Canada also noted that at MOP 22 in Bangkok, 91 parties signed a declaration on the global transition away from HCFCs and CFCs to environmentally-sound alternatives, which declares the signatories intent to pursue further action under the Montreal Protocol aimed at transitioning the world to environmentally sound alternatives to HCFCs and CFCs. Burkina Faso, Morocco, Nigeria and the Dominican Republic supported discussion of this issue in a contact group. The Federated States of Micronesia underscored that the increased production of HFCs is being driven by the Protocol's agreement to phase out HCFCs.

In response to the interventions, Co-Chair Alkemade proposed that the issue remain on the agenda for a "timed discussion." She said concerns of all parties would be reflected in the meeting's report. Delegates agreed and adopted the agenda.

Throughout COP 9/MOP 23, delegates discussed agenda items and corresponding draft decisions in plenary, contact groups, and bilateral consultations. Rather than addressing agenda items in numerical order, issues likely to lead to the establishment of contact groups were addressed first, in an effort to ensure as little overlap between contact groups as possible. Draft decisions were approved by the preparatory segment and forwarded to the high-level segment for adoption. The description of the negotiations, the summary of the decisions, and other outcomes can be found below.

HIGH-LEVEL SEGMENT

On Wednesday afternoon, Anak Agung Alit Sastrawan, representing the Governor of Bali, welcomed delegates and said that ODS are still used in Bali due to lack of widespread awareness.

Noting that the Protocol is nearing its 25th year of implementation, Marco González, Executive Secretary, Ozone Secretariat, underscored that the Protocol is grounded in core sustainable development principles, including the precautionary principle, and common but differentiated responsibilities. González reflected on the Protocol's successful "start and strengthen" approach, highlighting numerous adjustments and amendments to strengthen the Protocol. Acknowledging the economic challenges faced by many parties, González encouraged parties to approach the MLF replenishment negotiations with a sense of understanding and compromise.

Indonesian Minister of Environment Balthasar Kambuaya opened the high-level segment of the meeting with a call to delegates to ensure that phase-out programmes for ODS are comprehensively and effectively implemented, emphasizing the linkages between measures needed for recovery of the ozone layer as well as reduction of greenhouse gas emissions and low-carbon development.

The high-level segment continued on Thursday where COP 8 President Anura Priyadharshana Yapa, Minister of Environment, Sri Lanka, emphasized the cooperative nature of participants in contributing to the successful implementation of the Montreal Protocol. He stressed the need for increased funding of research activities, citing Sri Lanka's complete phase-out of methyl bromide in 2006 in its tea plantations, as a result of research into alternatives.

MOP 22 President Deborah Owens (UK) hoped delegates would negotiate in a spirit of compromise and consensus. On replenishment, she stressed the importance of sending positive signals to Article 5 countries to sustain their efforts to phase out HCFCs and other remaining ODS.

COP 9 elected by acclamation Mikheil Tushishvili (Georgia) as President, Alain Wilmart (Belgium), Marissa Gowrie (Trinidad and Tobago), and Ezzat Agaiby (Egypt) as Vice Presidents, and Arief Yuwono (Indonesia) as Rapporteur.

MOP 23 elected by acclamation Sianga Abilio (Angola) as President, Azra Rogovic-Grubic (Bosnia and Herzegovina) Javier Ernesto Camargo Cubilos (Colombia), and Arief Yuwono (Indonesia) as Vice Presidents, and Bernard Made (Canada) as Rapporteur. Delegates also adopted the agenda (UNEP/OzL.Conv.9/1-UNEP/OzL.Pro.23/1).

PRESENTATIONS BY THE ASSESSMENT PANELS:

John Pyle (Scientific Assessment Panel) reported on behalf of the assessment panels that the Montreal Protocol continues to work effectively, noting that ODS levels in the atmosphere have declined, providing co-benefits to climate systems. He described three synthesis report findings on: coupled interactions of stratospheric ozone and climate change; potential climate implications of HFCs, which have low-ozone-depleting potential but high-GWP; and further control of methyl bromide.

Scientific Assessment Panel: Paul Newman presented key findings of the Scientific Assessment Panel (SAP), including: declining ODS levels; coupled ozone and climate change interactions; persistence of Antarctic and global ozone holes; and influences on global ultraviolet changes.

Environmental Effects Assessment Panel: Janet Bornman explained that the Environmental Effects Assessment Panel (EEAP) examined the effects of ozone depletion and climate change on ultraviolet radiation in relation to human health, terrestrial and aquatic ecosystems, bio-geochemical cycles, air quality, and construction materials. Bornman also noted there would have been three times the amount of ultraviolet radiation without the Montreal Protocol. Nigel Paul emphasized that current and future change interactions contribute to the uncertainty of many environmental effects.

Technology and Economic Assessment Panel (TEAP): The TEAP 2010 Assessment Report was presented jointly by Co-Chairs Ian Rae (Chemical Technical Options Committee (CTOC)), Miguel Quintero (Foam TOC), Sergey Kopylov (Halons TOC), Marta Pizano (Methyl Bromide TOC), Lambert Kuijpers (Refrigeration TOC), and Helen Tope (Medical TOC), who reported the findings of their respective TOCs. Tope presented the key conclusions, highlighting that: the Montreal Protocol is working, with progress in every sector and many ODS applications phased-out world-wide; technology is not yet available for replacement of some ODS uses; 20-35% of present global use of methyl bromide can be replaced with alternatives available today; leapfrog technology is available in some applications; and banked ODS are leaking.

PRESENTATION BY THE MULTILATERAL FUND ON THE WORK OF THE EXECUTIVE COMMITTEE

(EXCOM): Chair of the ExCom of the MLF, Patrick McInerney (Australia), outlined the work of the ExCom from its 62nd-64th meetings (UNEP/OzL.Pro.23/8), noting it had approved 349

projects and activities, equating to over US\$270 million. He also noted, *inter alia*: the establishment of a window for ODS destruction for low-volume consuming countries; and the ExCom's progress in agreeing on guidelines for the production sector.

He outlined efforts by the UN Development Programme, UN Environment Programme, the UN Industrial Development Organization and the World Bank to assist in implementation of the Protocol, particularly for Article 5 countries, including in: HCFC phase-outs, assessing new technology developments, progressing ODS destruction projects, and assisting newly appointed ozone officers.

COUNTRY STATEMENTS: Sri Lanka outlined its efforts in planting over one million trees, as well as completely phasing out CFCs. The Maldives underscored its efforts to become the first carbon-neutral country, and stressed the need for a mechanism under the MLF to fund projects based on ozone and climate co-benefits.

Iran highlighted the importance of addressing energy efficiency and GWP issues in ozone projects. Indonesia highlighted the need to explore incentives for all partners in ODS destruction and stressed that information sharing on alternatives should be complemented by capacity building and technological transfer. China said the upcoming UN Framework Convention on Climate Change COP may address HFC reduction, and called for increased cooperation between the Protocol and the United Nations Framework Convention on Climate Change (UNFCCC).

Japan highlighted its effective and efficient technologies to destroy ODS, and offered to share these with Article 5 countries. Switzerland underscored the importance of addressing HFCs under the Protocol, cautioning that failure to do so may cause HFC emissions to offset the climate benefits of the Protocol. She also offered to host MOP 24 in Geneva, Switzerland. The EU outlined its efforts to review its fluorinated gases legislation, and stressed the need for the Protocol to seize the opportunity to mitigate climate change in a cost-effective manner.

Laos discussed its efforts in revising national legislation on ozone. Cambodia shared its experiences in phasing out halons, CFCs and CTC. Panama emphasized the necessity for increased finance for Article 5 parties for institutional strengthening. India stressed remaining challenges in ozone protection, including sustainable financing. Guinea noted its intent to ratify the Copenhagen, Montreal and Beijing Amendments.

Kenya highlighted the need to ensure that solving one environmental problem does not lead to the creation of another. Pakistan asked the Montreal Protocol to do whatever possible to cooperate on climate change and emphasized institutional strengthening as essential for the Protocol's continued success. Uzbekistan described its successful national programme and commitment to the Vienna Convention and Montreal Protocol.

Zimbabwe described the challenges of safely disposing of ODS seized by customs officials, proposing local or mobile containment mechanisms for seized ODS. Iraq requested special consideration of the high temperatures recently experienced in West Asia.

Côte d'Ivoire said it intended to ratify all Protocol Amendments, and offered to host MOP 25. Bahrain stressed it requires technology and financial assistance, and objected to

addressing HFCs under the Montreal Protocol. Palau said it will freeze consumption of HCFCs in 2013, contributing to achieving 10% HCFC reduction by 2015. Malaysia said HFCs should not be addressed under the Protocol and proposed that the MLF provide sufficient funds for destruction of ODS banks.

The Seychelles requested consistent support for their efforts in meeting their obligations under the Protocol, and supported HFC amendment proposals. Nepal reported on its HCFC Phase-Out Management Plan (HPMP).

The Republic of South Sudan stated its commitment to: maintaining a country free of ODS; ensuring environmental rehabilitation and sustainability; and ratifying the Vienna Convention and the Montreal Protocol. Mozambique noted its vulnerability to climate change impacts, and desire to phase out HFCs in developing countries. Mongolia explained that demand for HFCs continues to grow, but that his country is taking measures to phase them down. Bangladesh underscored that alternatives should be ozone and climate friendly, and not lead to further phase-out activities.

The International Institute of Refrigeration committed to assisting in Protocol implementation. Greenpeace said the lack of progress on HFCs was regrettable, citing the manipulative influence of the chemical industry.

COP 9/MOP 23 OUTCOMES AND DECISIONS

FINANCIAL REPORTS AND BUDGETS OF THE TRUST FUNDS FOR THE VIENNA CONVENTION AND THE MONTREAL PROTOCOL: On Monday, Preparatory Segment Co-Chair Ndiaye Cheikh Sylla (Senegal) introduced this item, and Canada, Japan, Switzerland, Sweden, Germany, the Gambia, France, Mexico, the US and Denmark volunteered to participate in a budget committee, chaired by Alessandro Giuliani Peru (Italy).

The budget committee reported to preparatory segment on Friday that it had completed its work and parties agreed to forward the draft decision (UNEP/OzL.Conv.9/CRP.3) to the high-level segment, where it was adopted on Friday.

Final Decision: In the decision (UNEP/OzL.Conv.9/CRP.3), the COP decides to:

- take note with appreciation of the financial statement of the Trust Fund for the biennium 2010-2011 and the report on the actual expenditures for 2010 as compared to the approvals for that year;
- approve the 2012 budget for the Trust Fund in the amount of US\$723,063, the budget for 2013 in the amount of US\$735,622, and the budget for 2014 in the amount of US\$1,280,311, as set out in Annex I to the report of the COP 9 of the Vienna Convention;
- authorize the Secretariat to draw down the amounts of US\$120,063 in 2012, US\$132,622 in 2013, and US\$677,311 in 2014, respectively, from the Fund balance for the purpose of reducing that balance;
- ensure, as a consequence of the drawdowns, that the contributions to be paid by the parties amount to US\$603,000 for each of the years 2012, 2013 and 2014 as set out in Annex II to the report of COP 9 to the Vienna Convention; and
- urge all parties to pay their outstanding contributions as well as their future contributions promptly and in full.

STATUS OF RATIFICATIONS: The Secretariat introduced this item on Monday and parties requested a draft decision be prepared for consideration in the high-level segment, where it was adopted on Friday.

Final Decision: The decision on ratification of the Vienna Convention, the Montreal Protocol and the London, Copenhagen, Montreal and Beijing amendments to the Montreal Protocol (UNEP/OzL.Conv.9/L.2-UNEP/OzL.Pro.23/L.2,I), the COP notes the number of countries who have ratified the Vienna Convention and the Montreal Protocol and urges states who have not yet done so to ratify, approve, or accede to the amendments to the Montreal Protocol, highlighting that universal participation is necessary to ensure the protection of the ozone layer.

REPLENISHMENT OF THE MLF: Supplemental report of the TEAP replenishment task force: On Monday, TEAP members Shiqiu Zhang, Lambert Kuijpers and Daniel Colbourne presented the supplemental report of the TEAP replenishment task force for 2012-2014. The total required funding is estimated at US\$460-540 million. The study is based on: HPMPs approved by the MLF ExCom; six scenarios applied for not yet approved HPMPs; and production closure funding. Findings include, *inter alia*: 86 parties have submitted 2010 baseline data while 59 parties have not; production closure funding ranges from US\$193-218 million; HCFC feedstock production doubled every three years during the last decade; and institutional strengthening costs, using a 3% inflation rate, would increase by \$1.34 million.

China stressed that funding levels should be based on needs of developing countries, calling on parties to recognize the need for “efficient and sustained funding” for compliance. Canada requested indication of replenishment levels based on different scenarios such as: funding of 10% of a production baseline, “exclusion of funding for swing plants,” and redirection of some HCFCs to feedstock uses. Poland, on behalf of 27 EU member states, expressed concern with the calculations regarding the funding requirement for the triennium 2012-2014 in the production sector in the TEAP supplement report. Australia committed to a successful replenishment, taking into account the current economic situation. Highlighting financial difficulties faced by non-Article 5 parties, Japan stressed the need to fund the MLF through both traditional funding sources and from other sources including Article 5 parties.

Co-Chair Sylla proposed, and delegates agreed, to establish a contact group on replenishment with Jozef Buys (Belgium) and Donnalyn Charles (Saint Lucia) as Co-Chairs to continue discussion.

On Tuesday, the Replenishment Contact Group held a meeting open to all parties. The group discussed its composition and decided to have 11 members from Article 5 parties and 11 from non-Article 5 parties.

The TEAP presented a table on all the non-HCFC production elements of the replenishment for 2012-2014 with a total funding requirement of US\$316.86-339.75 million, which it reported reflected recent ExCom decisions. TEAP also presented a table on production sector scenarios and funding. Parties discussed each line of these two tables, and had agreement on some of the budget lines, but differed on others with Article 5 parties favoring higher figures and non-Article 5 parties insisting on

lower figures. Based on the discussions, TEAP revised these tables twice.

With the understanding that these budget lines would be decided by the ExCom, the group discussed the total budget for the MLF for 2012-2014. On Thursday and Friday, parties discussed an overall replenishment range between US\$400-490 million, with non-Article 5 parties supporting the lower figure and Article 5 parties insisting on the higher figure. Article 5 parties argued that in order to meet the target of freezing HCFC consumption by 2013 and reducing it by 10% by 2015, the funding provided should not be less than the previous period. Non-Article 5 parties insisted that they could not support a higher figure, considering the current economic situation.

On Friday at 7:30 pm, Co-Chair Charles reported to the preparatory segment plenary that the Group had discussed a range of the total figure between US\$400-490 million, and had not reached consensus. She said that the Co-Chairs had proposed the figure of US\$450 million as a compromise. Malaysia said Article 5 parties had proposed US\$470 million. Nigeria, for the African Group, and Mexico stated due to current economic realities, they could accept the figure of US\$450 million, although it might pose some difficulties for them to meet the compliance targets for HCFC phase-out. Plenary Co-Chair Sylla urged parties to continue efforts to reach consensus. The Contact Group then resumed its meeting.

At 10:30 pm, Co-Chair Charles reported to the plenary that the group had agreed to US\$450 million. The US said that it was a remarkable achievement in this difficult time, and it remained committed to the Montreal Protocol. Canada said this was the most difficult replenishment negotiation they had experienced, and appealed to parties to work together to achieve the goal of the Protocol. China, India, and Brazil stated they had mixed feelings towards this result, noting that the figure is the lowest in history, and hoped it would not become a precedent. Brazil said they were not ready to take on any new commitments under such circumstances.

The preparatory segment then forwarded the draft decision on 2012-2014 replenishment of the MLF to the high-level segment, where it was adopted, without amendment.

Final Decision: In the decision (UNEP/OzL.Pro.23/CRP.24), the MOP decides:

- to adopt a budget for the MLF for 2012-2014 of US\$450 million on the understanding that US\$34.9 million of that budget will be provided from anticipated contributions due to the MLF and other sources for the triennium, and that US\$15.1 million will be provided from interest accruing to the Fund during the 2012-2014 triennium;
- to adopt the scale of contributions for the MLF based on a replenishment of US\$133,333,334 for 2012, US\$133,333,333 for 2013, and US\$133,333,333 for 2014; and
- that the ExCom should take action to ensure, that the whole of the budget for 2012-2014 is committed by the end of 2014, and that non-Article 5 parties should make timely payments.

Extension of the fixed-exchange-rate mechanism: On Monday in plenary, this issue was open for discussion, but no comments were made, and parties agreed to forward the draft decision on extending a provision for the fixed-exchange-rate

mechanism to the high-level segment. It was adopted in the high-level segment on Friday.

Final Decision: In the decision (UNEP/OzL.Conv.9/L.2-UNEP/OzL.Pro.23/L.2,III.[K]), parties decided:

- to direct the treasurer to extend the fixed-exchange-rate mechanism to the period 2012-2014;
- that parties choosing to pay their contributions to the MLF in national currencies will calculate their contributions based on the average UN exchange rate for the six-month period commencing 1 January 2011;
- that parties not choosing to pay in national currencies pursuant to the fixed-exchange-rate mechanism will continue to pay in US dollars; and
- that no party should change the currency selected for its contribution in the course of the triennium 2012-2014.

ISSUES RELATED TO EXEMPTIONS FROM ARTICLE 2 OF THE MONTREAL PROTOCOL: Nominations for 2012 and 2013 for essential-use exemptions: On Monday,

Bangladesh, supported by the US, requested approval of its nomination of metered-dose inhalers (MDIs). Canada urged parties with essential-use exemptions to use stockpiled CFCs, and recommended speeding up transition to alternatives. China responded that such transitions take time, noting administrative and other barriers. Co-Chair Sylla invited the MTOC, China, and other interested parties to submit a report to the plenary. Marco González, Executive Secretary, referred to Mexico's agreement to offset its requested exemption for pharmaceutical grade CFC-12 for production of MDIs by destruction of CFC-11.

On Wednesday, China introduced a draft decision on essential-use nominations for controlled substances for 2012, and on Friday evening, a consensus version (UNEP/OzL.Pro.23/CRP.13/Rev.1), noting agreement that Bangladesh will not apply for essential-use nominations beyond 2012.

Final Decision: Parties adopted UNEP/OzL.Pro.23/CRP.13/Rev.1, in which the MOP authorizes the levels of production and consumption for 2012 necessary to satisfy essential uses of CFCs for metered-dose inhalers, and requesting the nominating parties—China, Bangladesh, Pakistan and the Russian Federation—to supply information to the MTOC to enable assessment. They also encouraged parties to source from stockpiles where possible, consider domestic regulations, and speed up transition to alternatives. Parties approved Mexico's application for emergency essential use of six metric tonnes of CFC-12 for MDIs in 2011-2012.

Essential-use exemption for CFC-113 for aerospace applications in the Russian Federation: On Monday, the Russian Federation offered to meet with the EU and the US to further discuss its application and technical issues regarding alternatives. On Friday morning, the EU reported slow progress, while Co-Chair Alkemade urged parties to reach a conclusion. After further consultation parties announced they had reached agreement.

Final Decision: Parties adopted the decision (UNEP/OzL.Pro.23/CRP.23/Rev.2), in which the MOP: authorizes an essential-use exemption for the production and consumption in 2012 of 100 metric tonnes of CFC-113 in the Russian Federation for applications in its aerospace industry, while requesting it to consider importing the required substance from available

global stocks, and to provide a final phase-out plan in their next essential-use nomination.

Nominations for 2012 and 2013 CUEs: On Monday, MBTOC Co-Chairs Mohamed Besri (Morocco), Michelle Marcotte (Canada), Marta Pizano (Colombia) and Ian Porter (Australia) presented trends in methyl bromide critical-use nominations and the MBTOC's recommendations, highlighting reductions and possible phase-out by 2015.

Porter sought guidance from parties for the MBTOC's future work, considering the reduction in nominations, resource limitations, and the possibility of holding meetings electronically. Cuba and Australia requested more information about criteria and methodology used in the approval process, while the EU, Canada and Switzerland raised concerns about process.

On QPS, Jordan proposed that the MLF support a project on control of methyl bromide in QPS. The MBTOC Co-Chairs welcomed research trials by parties, noting that 30-35% of present use of methyl bromide for QPS can be replaced by existing alternatives.

The US expressed concern at MBTOC's reduction of US nominations, noting MBTOC has been unable to reach consensus. The Natural Resources Defense Council (NRDC) noted that the US continues to use methyl bromide for non-critical uses.

On Friday morning, the US submitted UNEP/OzL.Pro.23/CRP.9 on critical use nominations by Australia, Canada, Japan and the US containing reduced figures for the US nomination: from 531,737 to 461,186 metric tonnes for strawberry runners, and from 632,877 to 562,326 metric tonnes for total production and consumption of methyl bromide. He stressed that the US did not concur with the MBTOC's decision, and reserved the right to introduce an additional submission next year.

Final Decision: Parties adopted UNEP/OzL.Pro.23/CRP.9 on critical use exemptions for methyl bromide in 2013 in several categories including strawberry runners, ornamentals, and mills and food processing structures, requesting the TEAP to analyze the impact of national, subnational and local regulations and law on the potential use of alternatives, and to include "members with relevant expertise" in developing the MBTOC's recommendations.

QPS uses of methyl bromide: This item was introduced in plenary on Tuesday and then discussed in a contact group throughout the week.

On Wednesday, in a contact group chaired by Alice Gaustad (Norway), parties discussed the draft decision (UNEP/OzL.Pro.23/CRP.6). Parties clarified the type of data recorded and collated on current usage of methyl bromide for phytosanitary purposes and agreed to include this in the draft decision. Parties also agreed to include reference to the process of collating data on quantities of methyl bromide used for QPS, descriptions of any articles fumigated, and to distinguish between methyl bromide used on import or export commodities. The group discussed and agreed to include references to the sharing of information on alternatives approved by their respective national plant protection organizations, with parties to the International Plant Protection Convention (IPPC). They noted the importance of disseminating accurate data.

The draft decision was presented to plenary on Friday and forwarded to the high-level segment, where it was adopted without amendment.

Final Decision: In the decision on QPS uses of methyl bromide (UNEP/OzL.Pro.23/CRP.6), the MOP decides to:

- encourage parties to follow the recommendation of the Commission on Phytosanitary Measures that data on current usage of methyl bromide as a phytosanitary measure should be accurately recorded and collated;
- urge parties to comply with the reporting requirements of Article 7 and to provide data on the amount of methyl bromide used for QPS applications annually and to invite parties to supplement such data by reporting to the Secretariat information on methyl bromide uses recorded and collated;
- invite parties to share information on alternatives approved by their national plant protection organizations with the other parties to the IPPC;
- request parties to ensure that their national plant, animal, environmental, health, and stored product regulations do not require that consignments be treated with methyl bromide twice (both before shipment and upon arrival) unless a risk of an infestation with a targeted pest has been identified;
- request the TEAP to provide, for the Open-Ended Working Group (OEWG), a report determining for each region the trend in methyl bromide consumption for QPS uses or any significant variation in consumption over the past years, and providing an explanation for trends and variations; and
- request the Secretariat to consult the IPPC Secretariat on how to ensure and improve the exchange of information on methyl bromide uses and alternative treatments between the Convention and Montreal Protocol bodies and on how to facilitate access to such information by national authorities and private organizations, and to report to OEWG 32.

Global laboratory and analytical-use exemptions: On Tuesday, China, Australia, the EU and the US put forward a draft decision on global laboratory and analytical-use exemption (UNEP/OzL.Pro.23/CRP.14), addressing the difficulty faced by parties in employing alternatives, and proposing a grace period until 31 December 2014.

Final Decision: In the decision (UNEP/OzL.Conv.9/L.2-UNEP/OzL.Pro.23/L.2,III.[M]), parties agreed to: a grace period for individual parties using carbon tetrachloride (CTC) for the testing of oil, grease, and total petroleum hydrocarbons in water, requesting parties to report on such use; and requested the TEAP to review the reports, advise on transition to non-ODS, and continue reviewing international standards that mandate the use of ODS.

Sustained mitigation of ODS emissions from feedstock and process-agent uses: This issue was addressed in plenary on Tuesday and in a contact group on Wednesday, Thursday and Friday. On Tuesday Co-Chair Alkemade introduced a TEAP study on the feasibility of reducing or eliminating ODS emissions from feedstock and process-agent uses, highlighting, *inter alia*: a lack of viable alternatives for ODS use in feedstocks; uncertain estimates of feedstock emissions; and inconsistencies between carbon tetrachloride uses and emissions. The EU described intersessional progress, resulting in draft decisions on feedstocks (UNEP/OzL.Pro.23/CRP.4) and

process agents (UNEP/OzL.Pro.23/CRP.5). The US emphasized intersessional efforts to resolve top-down and bottom-up measurements of carbon tetrachloride. The EU, supported by the US, Australia and Canada, but opposed by India, proposed creating a contact group. A contact group, chaired by Blaise Horisberger (Switzerland), was established.

On Wednesday the Contact Group met and the EU introduced its proposed decision on process agents (UNEP/OzL.Pro.23/CRP.5), noting that Tables A and B in the draft decision's annex, which the draft decision seeks to update, contain lists of uses of controlled substances as process agents and limits for process agents uses.

One party expressed concern about the classification of its use of CTC in vinyl chloride monomer (VCM) production for process agent purposes, arguing that it is actually used as feedstock. One party highlighted that the only difference in treatment of controlled substances considered as process agents and feedstocks was that the Protocol requires emission reporting for process agents. After protracted discussion, parties agreed to ask TEAP to assess the situation and for the issue to be considered again at MOP 24. In the interim, it was agreed that the party's CTC use in VCM would be classified as a feedstock.

On Thursday, the EU introduced its draft decision on feedstocks (UNEP/OzL.Pro.23/CRP.4), which *inter alia*: calls on parties to refrain from commissioning new production facilities planning to use ODS as feedstocks; and requests TEAP to continue its work and provide information on alternatives to ODS for feedstock use. In the discussion, one party asserted that feedstocks were not controlled under the Protocol. Another party suggested refocusing the draft decision on resolving the discrepancy between reported and observed emissions of ODS, specifically CTC in feedstock uses. Parties agreed to work together informally to draft a revised decision.

On Friday, Horisberger reported to the plenary that the Contact Group had reached consensus on a revised draft decision (UNEP/OzL.Pro.23/CRP.4/Rev.1), and delegates forwarded it, together with the draft decision on process agents (UNEP/OzL.Pro.23/CRP.5/Rev.1) to the high-level segment for adoption, where they were adopted without amendment.

Final Decisions: In the decision on process agents (UNEP/OzL.Pro.23/CRP.5/Rev.1), the MOP, decides to:

- update Table A (list of controlled substances) and Table B (emission limits), as set out in the annex to the present decision;
- urge those parties yet to submit information on process agent uses to do so as a matter of urgency, and no later than 31 March 2012;
- remind parties that have provided information in accordance with decision XXI/3 indicating that they have process agent uses to provide further information, in particular on controlled substances and process agent applications in accordance with decision X/14;
- urge parties listed in Table B to revisit their maximum values and to report to the TEAP on how those values might be reduced, particularly in view of the process agent uses that have ceased;
- request TEAP, as further uses cease in the future, to consider corresponding reductions in make-up or consumption

and maximum emissions accordingly in future proposals concerning Table B, and to provide OEWG 32 a summary report updating its findings on process agent uses, taking into account relevant information from previous investigations;

- revisit the use of controlled substances as process agents at OEWG 33;
- consider the use of CTC for the production of VCM for the purpose of calculated levels of production and consumption, on an exceptional basis, to be a feedstock use until 31 December 2012; and
- request the TEAP to review the use of CTC for the production of VCM process in India and other parties, if applicable, and to report on the results in its 2012 progress report.

In the decision on feedstocks (UNEP/OzL.Pro.23/CRP.4/Rev.1), the MOP decides to:

- request the TEAP, in cooperation with the SAP, to continue to investigate the possible reasons for the identified feedstocks discrepancy, considering in particular the extent to which the discrepancy could be due to: incomplete or inaccurate historical reporting of CTC produced; uncertainties in the atmospheric life-time of CTC; and CTC from unreported or underestimated sources from both Article 5 and non-Article 5 parties.

ENVIRONMENTALLY SOUND DISPOSAL OF ODS: On Friday morning, parties forwarded the draft decision on adoption of new destruction technologies for ODS, submitted by Australia and Canada (UNEP/OzL.Pro.23/CRP.1/Rev.1), to the high-level segment, where it was adopted without amendment.

Final Decision: In the decision (UNEP/OzL.Conv.9/L.2-UNEP/OzL.Pro.23/L.2,III.[L]), the MOP decides to approve the highlighted destruction processes in the annex for the purposes of paragraph 5 of Article 1 of the Montreal Protocol, as additions to already accepted technologies. MOP 23 requests the TEAP to continue to assess the plasma destruction technology for methyl bromide in the light of additional information that may become available and to report to the parties when appropriate; and investigate the issues raised in its 2011 progress report regarding performance criteria for destruction and removal efficiency compared to destruction efficiency, and regarding verification criteria for the destruction of ODS at facilities that use approved destruction technologies, and to submit a report to OEWG 32.

Annex A includes approval details for the destruction and efficient removal of the following sixteen substances: argon plasma arc, cement kilns, chemical reaction with H₂ and CO₂, gas phase catalytic de-halogenation, gaseous/fume oxidation, inductively coupled radio frequency plasma, liquid injection incineration, microwave plasma, municipal solid waste incineration, nitrogen plasma arc, porous thermal reactor, portable plasma arc, reactor cracking, rotary kiln incineration, superheated steam reactor, and thermal reaction with methane. Each is approved under all of the concentrated source categories, with the exception of chemical reaction with H₂ and CO₂ and reactor cracking, which are not approved for Annex A halons.

UPDATING THE NOMINATION PROCESSES AND RECUSAL GUIDELINES FOR TEAP: On Tuesday, Co-Chair Sylla introduced the agenda item and delegates agreed to establish a contact group co-chaired by Masami Fujimoto (Japan) and Javier Camargo (Colombia).

On Wednesday, the contact group discussed a draft decision (UNEP/OzL.Pro.23/CRP.21) on nominations to TEAP, TOCs and temporary subsidiary bodies, especially on how to ensure balanced perspectives and geographic representation. Parties introduced text stipulating that experts may be nominated only by their passport countries. On length of service, they proposed to limit terms of experts nominated at this meeting to four years, with possible re-nominations.

Parties also discussed formalizing the relationship of the Executive Secretary to TEAP; approval of appointments to TEAP (but not TOCs) by MOPs, and membership sizes of subsidiary bodies to ensure consistency with their respective workloads.

On Friday, Switzerland raised concerns over text potentially restricting the selection of technical experts by nationality, suggesting that experts' countries of domicile could also be taken into account. After last-minute discussions on the margins, an agreed text was presented to plenary that evening, deleting the requirement for experts to be nominated only by their passport countries, instead requesting TEAP to ensure that all nominations are agreed to by the national focal points of "the relevant party," and undertaken in full consultation with them. The draft decision was adopted at the high-level segment.

Final Decision: In the decision (UNEP/OzL.Pro.23/CRP.21/Rev.1), the MOP decides to: request TEAP to reflect a balance of appropriate expertise in TOCs and temporary subsidiary bodies, to update and publicize a matrix of needed capabilities and expertise, and to standardize the information required for potential nominations of experts. The final version includes the compromise text agreed on Friday, requesting TEAP to ensure that all nominations are agreed to by the national focal points of "the relevant party," and undertaken in full consultation with them. In addition to the four-year rule regarding expert appointments, parties agreed that the terms of all members of the TEAP and its TOCs will expire at the end of 2013 and 2014 respectively, unless reappointed before then under these new terms.

TREATMENT OF ODS USED TO SERVICE SHIPS: On Tuesday, Co-Chair Alkemade introduced the draft decision on treatment of ODS used to service ships (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3,III.[K]) on reporting and regulation responsibilities of ships from other flag states.

On Wednesday, a contact group, co-chaired by Marissa Gowrie (Trinidad and Tobago) and Cornelius Rhein (EU), discussed the draft decision. Parties proposed that: more information is needed on how parties treat sales of ODS to ships; and the Secretariat could consult with relevant bodies, particularly the International Maritime Organization (IMO) and World Customs Organization (WCO), to collect information on how they regulate trade in and reporting of ODS on board ships. Parties agreed to request the Secretariat to prepare a document for OEWG 32 on current ODS sales to ships for onboard servicing and use, including how parties calculate consumption.

On Thursday evening, parties finalized the draft decision in the contact group. Parties agreed to insert a paragraph requesting the Ozone Secretariat to work with relevant bodies, including the IMO and the WCO, on how these bodies address trade in ODS

on board ships, the use of ODS on board ships, and to provide a general overview of the framework applied by these bodies to manage relevant activities.

On Friday morning, parties agreed to forward the draft decision on ODS for servicing ships to the high-level segment where it was adopted without amendment.

Final Decision: In the decision (UNEP/OzL.Pro.23/CRP.19), MOP 23 requests the Secretariat to:

- prepare a document that collects current information about the sale of ODS to ships, including ships from other flag states, for onboard servicing and other onboard uses, including on how parties calculate consumption with regard to such sales, and that identifies issues relevant to the treatment of the consumption of ODS used to service ships, including flag ships, for onboard uses for submission to OEWG 32 to enable MOP 24 to take a decision on the matter;
- include in the document any guidance and/or information on ozone depleting substances previously provided to the parties regarding sales to ships for onboard uses;
- consult, when preparing the document, with relevant international bodies, in particular the IMO and the WCO, to include in the document information on whether and how those bodies address: trade in ODS for use on board ships; use of ODS on board ships; and to provide a general overview on the framework applied by those bodies to manage relevant activities;
- include the information provided by the parties in an annex to the document; and
- request the Panel to provide in its 2012 progress report a summary on the available data concerning the use of ODS on ships, including the quantities typically used on different types of ships, the estimated refrigerant bank on ships and an estimation of emissions.

MOP 23 requests the parties to provide information to the Secretariat on:

- the current system used by the parties, if any, to regulate and report on ODS supplied for the purpose of servicing ships, including ships from other flag states, for onboard use;
- how they calculate consumption with regard to such ODS;
- any relevant cases in which they have supplied, imported or exported such ODS; and
- relevant data concerning the use of ODS on ships, including the quantities typically used on different types of ships, the estimated refrigerant bank on ships, and an estimation of emissions.

ADDITIONAL INFORMATION ON ALTERNATIVES

TO ODS: This issue was introduced in plenary on Tuesday and then discussed in a contact group, co-chaired by Leslie Smith (Grenada) and Mikkel Sørensen (Denmark).

On Tuesday, contact group participants agreed to continue discussions on a proposed study of low and high-GWP alternatives to CFCs and HCFCs (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3,[J]) tabled by Switzerland.

On Wednesday parties discussed the content of a proposed report to be prepared by the TEAP for consideration by OEWG 32. Parties deliberated references to the UNFCCC and IPCC in the text, and ways to incorporate their work into the TEAP report. Parties discussed asking the TEAP to report on low-GWP

and high-GWP alternatives to ODS. Some parties preferred the TEAP to focus on only high-GWP alternatives, but most parties preferred the TEAP to look at both low- and high-GWP alternatives. Several non-Article 5 parties emphasized the need to integrate costs of alternative technologies in the report.

On Thursday, the group agreed to the draft decision (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3[J]) requesting TEAP to conduct a joint study with other scientific experts for consideration at OEWG 32, to provide information on alternatives to HCFCs. The revised version of this decision was presented to plenary on Friday, and forwarded to the high-level segment where it was adopted without amendment.

Final Decision: In the decision (UNEP/OzL.Pro.23/CRP.18), the MOP requests the TEAP to prepare a report in consultation with the other scientific experts, if necessary, for consideration by OEWG 32 containing information on, *inter alia*:

- the cost of alternatives to HCFCs that are technically proven, economically viable, and environmentally benign;
- alternatives to HCFCs that are technically proven, economically viable, environmentally benign and suitable for use in high ambient temperatures, including how such temperatures may affect efficiency or other factors;
- quantities and types of alternatives already and projected to be phased in as replacements for HCFCs, disaggregated by application, both in Article 5 and non-Article 5 parties; and
- an assessment of the technical, economic and environmental feasibility of options in consultation with scientific experts.

USE OF METHYL BROMIDE IN AFRICA: On Tuesday, Co-Chair Alkemade introduced the draft decision (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3[A]) for TEAP to review consumption trends in Africa, study phase-out implications, and recommend activities. Several African countries prepared a draft decision on key challenges facing methyl bromide phase-out in Article 5 parties operating under paragraph 1 of Article 5. A contact group was established and met several times.

On Friday, in the preparatory segment plenary, Kenya informed that the contact group had agreed to this draft decision. With some editorial changes and deletion of some words in the brackets proposed by Canada, delegates decided to forward the draft decision to the high-level segment, which adopted it.

Final Decision: In the decision (UNEP/OzL.Pro.23/CRP.10/Rev.3), the MOP decides to:

- request the Executive Committee of the MLF to consider asking its senior monitoring and evaluation officer, when carrying out the evaluation approved at its 65th meeting on methyl bromide projects in Africa, to consider options for a strategy to achieve the sustainable use of effective alternatives to methyl bromide in Africa; and
- request the TEAP to consider whether the guidelines and criteria for the preparation of critical use nominations of methyl bromide need any modification to take into account the situation of parties operating under Article 5 and to report to OEWG 33.

PROPOSED AMENDMENTS TO THE MONTREAL PROTOCOL: On Tuesday, Co-Chair Sylla invited proponents to brief the plenary on their proposals. Introducing its proposal (UNEP/OzL.Pro.23/5), the Federated States of Micronesia appealed to parties to consider their moral and ethical obligations

to include HFCs under the Montreal Protocol. The US, Canada and Mexico discussed the North American proposal (UNEP/OzL.Pro.23/6), and the US reiterated the responsibility of parties to the Vienna Convention to prevent negative environmental impacts due to phase-out decisions.

In response to the proposals, Burkina Faso, Brazil, the Cook Islands, Georgia, Senegal, Uganda, the Former Yugoslav Republic of Macedonia, Benin, Colombia, Nigeria, the EU, Saint Lucia, Grenada, Bangladesh, Switzerland, the Marshall Islands, Belarus, Australia, Indonesia, the Dominican Republic, Japan and Kenya supported establishing a contact group to discuss the amendments.

Georgia emphasized that with so many critical issues to be resolved under the Kyoto Protocol, UNFCCC negotiators are unlikely to concentrate on HFCs. He called for clear signals to industry regarding phase-out of HFCs. Kuwait and the Former Yugoslav Republic of Macedonia called for urgent action, noting the high temperatures in Gulf countries, and recent flood and drought events, respectively.

Argentina maintained that HFCs fall under the ambit of the Kyoto Protocol, and said the Montreal Protocol should instead focus on providing incentives for low-GWP alternatives through the MLF. Venezuela, China and India also objected to establishing a contact group on the issue.

Malaysia proposed deferring discussion of the amendment proposals. Noting the lack of agreement among parties to continue discussions in a contact group, Co-Chair Alkemade proposed parties continue discussions informally. The US and Canada expressed disappointment, stating that many parties were prepared to discuss the issue. Co-Chair Alkemade suggested parties raise issues related to the proposals in the ODS Alternatives Contact Group, and parties agreed.

POTENTIAL AREAS OF FOCUS FOR THE ASSESSMENT PANELS' 2014 QUADRENNIAL REPORTS: On Tuesday, Co-Chair Sylla introduced the Secretariat's compilation of ideas from the assessment panels on this issue. The EU informed it had prepared a draft decision (UNEP/OzL.Pro.23/CRP.12), and Sylla proposed and parties agreed to establish a contact group, which met several times.

At Thursday's preparatory segment plenary, the EU reported on the consultations on the draft decision on potential areas of focus for the 2014 quadrennial reports of SAP, EEAP and TEAP. After several amendments, parties agreed to forward the draft decision to the high-level segment, which adopted it (UNEP/OzL.Conv.9/L.2-UNEP/OzL.Pro.23/L.2,III.[R]).

Final Decision: In the decision, the MOP decided, *inter alia*:

- to request the three assessment panels to update their 2010 reports in 2014 and submit them to the Secretariat by 31 December 2014 for consideration by the OEWG and MOP 27;
- that for its 2014 report, EEAP should consider the most recent scientific information regarding effects on human health and the environment of changes in the ozone layer and in ultraviolet radiation, taking into account interactions between them;
- that the 2014 report of SAP should include: assessment of the state of the ozone layer and stratospheric climate and their future evolution; evaluation of the Antarctic ozone hole and Arctic winter/spring ozone depletion and the predicted

changes in these phenomena, with a particular focus on temperatures in the polar stratosphere; evaluation of trends in the concentration in the atmosphere of ozone-depleting substances and the substitutes for ODS and their consistency with reported production and consumption of those substances and the likely implications for the state of the ozone layer and climate, taking into account the regional distribution of emissions, including carbon tetrachloride; assessment of the two-way interaction between climate change and changes in the ozone-layer; description and interpretation of observed ozone changes and ultraviolet radiation, along with future projections and scenarios for those variables; assessment of the effects of very short-lived substances and non-controlled substances with ozone depletion potential; and identification and reporting, as appropriate, on any other threats to the ozone layer, including an assessment of the effect of recent volcanic activities and of possible geoengineering;

- that in its 2014 report, TEAP should consider the following topics: technical progress in all sectors, including the recovery, reuse and destruction of ODS; accounting for production and use for the various applications of ODS and new substances; technically and economically feasible alternatives to ODS; identification and technical evaluation of uses for which currently acceptable alternatives are not available, including process-agent uses; status of banks containing ozone-depleting substances; challenges facing Article 5 parties in phasing out remaining ODS such as methyl bromide and maintaining the phase-outs already achieved; and assessment of subsidies that undermine efforts to protect the stratospheric ozone layer and the global climate.

PHASE-OUT OF HFC-23 BY-PRODUCT EMISSIONS:

Canada, Mexico and the US submitted a draft decision on limiting the emissions of HFC-23 as a by-product of the production of HCFC-22 (UNEP/OzL.Conv.9/3-UNEP/OzL.Pro.23/3,[C]). On Wednesday evening, the US presented the draft decision to the plenary. India, China, Brazil, Argentina and Venezuela said the issue is outside the Protocol. The EU and Canada emphasized the value of addressing both climate and ozone issues. After plenary discussion, the Chair noted consensus could not be reached, and the matter was deferred.

STATUS OF NEPAL RELATIVE TO THE COPENHAGEN AMENDMENT: On Tuesday, Chair Sylla introduced Nepal's request for the MOP to consider its compliance status. Nepal urged parties to consider Nepal as a full compliant party, allowing it access to finance from the MLF.

A representative of the ImpCom outlined that this issue was considered at its meeting on 18 November, noting that Nepal is in compliance with the Protocol, but is yet to ratify the Copenhagen Amendment. Therefore, Nepal's status is that of a non-ratifying party. Parties agreed to revisit the issue at MOP 24.

CONSIDERATION OF MEMBERSHIP OF MONTREAL PROTOCOL BODIES FOR 2012: Members of the Implementation Committee: This decision (UNEP/OzL.Conv.9/L.2-UNEP/OzL.Pro.23/L.2,III.[N]) was forwarded by the preparatory segment to the high-level segment, where it was adopted on Friday without amendment.

Final Decision: In the decision the MOP: confirms the positions of Armenia, Guinea (replacing Algeria), Nicaragua, Sri Lanka and the US as members of the Committee for one further year, and selects Germany, Lebanon, Poland, Saint Lucia and Zambia as members of the Committee for a two-year period beginning on 1 January 2012. W.L. Sumathipala (Sri Lanka) is to serve as President and Janusz Kozakiewicz (Poland) is to serve as Vice-President and Rapporteur.

Members of the ExCom of the MLF: A draft decision was forwarded by the preparatory segment to the high-level segment for adoption on Friday. Switzerland noted that the reference to Switzerland should be substituted with Belgium, and the decision was adopted with the amendment.

Final Decision: In the decision (UNEP/OzL.Conv.9/L.2-UNEP/OzL.Pro.23/L.2,III[O]), the MOP decides to: endorse the selection of Canada, Finland, Japan, Romania, Belgium, the UK and the US as members of the ExCom representing non-Article 5 parties; and Argentina, China, Cuba, India, Kenya, Jordan and Mali as Article 5 representatives, for one year beginning January 2012. Xiao Xuezhi will serve as Chair and Fiona Walters will serve as Vice-Chair.

Co-Chairs of the OEWG: In the preparatory segment on Thursday, parties agreed to a draft decision on the Co-Chairs of the OEWG (UNEP/OzL.Conv.9/L.2-UNEP/OzL.Pro.23/L.2,III.[P]). The high-level segment approved the draft decision without amendment on Friday.

Final Decision: In the decision on OEWG membership, the MOP decides to endorse the selection of Ghazi Odat (Jordan) and Gudi Alkemade (Netherlands) as Co-Chairs of the Montreal Protocol OEWG in 2012.

Endorsement of new Co-Chair of the Chemicals TOC and a senior expert of the TEAP: In the preparatory segment on Thursday, parties agreed to a draft decision (UNEP/OzL.Conv.9/L.2-UNEP/OzL.Pro.23/L.2,III[Q]) on the Co-Chair of the CTOC and a TEAP member.

Final Decision: In the decision the MOP decides to: endorse Masaaki Yamabe (Japan) as senior TEAP expert and to endorse Keiichi Ohnishi (Japan) as CTOC Co-Chair for four years.

COMPLIANCE AND REPORTING ISSUES CONSIDERED BY THE IMPCOM: On Tuesday, Ghazi Odat (Jordan) reported on compliance discussions at the ImpCom's 46th and 47th meetings. He presented draft decisions on: parties who have not submitted reports; non-compliance in Libya, Iraq and Yemen; trade with Kazakhstan by the EU and the Russian Federation; revisions of baseline numbers; decimal places; and licensing. Co-Chair Alkemade proposed, and delegates agreed, to forward the draft decision, containing the ImpCom reports (UNEP/OzL.Pro.23/CRP.3) to the high-level segment, where it was adopted.

Final Decision: On Friday, MOP 23 adopted the ImpCom report (UNEP/OzL.Pro.23/CRP.3), including its ten decisions, without amendment.

REPORT OF THE EIGHTH MEETING OF THE OZONE RESEARCH MANAGERS (ORM) OF THE PARTIES TO THE VIENNA CONVENTION AND STATUS OF THE GENERAL TRUST FUND FOR FINANCING ACTIVITIES ON RESEARCH AND SYSTEMATIC OBSERVATIONS RELEVANT TO THE VIENNA

CONVENTION: On Tuesday, Michael Kurylo, Chair of the 8th ORM meeting, presented their recommendations, including: continuing and expanding systematic tracking and analysis of ozone and climate-related gases; study of the relationships between ozone and climate variability and change; data archiving; and national capacity building (UNEP/OzL.Conv.9/6).

China and Brazil expressed concerns over duplication of observation work carried out under the climate change framework. Kurylo responded that efforts would be complementary.

Sri Lanka introduced a draft decision (UNEP/OzL.Pro.23/CRP.2) proposing to adopt the ORM recommendations. Australia suggested combining this with UNEP/OzL.Pro.23/CRP.1 on the Vienna Convention Trust Fund financing of such activities as the contents were related. The EU supported this. Parties agreed to merge the two draft decisions, presenting the final version as UNEP/OzL.Conv.9/CRP.4/Rev.1. On Friday, final text was provided after deletion of the words “associated climate change” in a preambular paragraph, and addition of further text encouraging parties to adopt the research recommendations.

Final Decision: Parties adopted UNEP/OzL.Conv.9/CRP.4/Rev.1, appreciating the Trust Fund’s support of joint activities implemented by the World Meteorological Organization (WMO) and the Ozone Secretariat, and encouraging parties to maintain research capabilities for scientific measurement and understanding of ozone depletion. The decision adopted previous recommendations of the WMO regarding systematic observations, data archiving, and specific capacity-building activities, including the transfer of equipment to developing countries for ozone and ultraviolet observation stations, and support to attend training workshops.

OTHER MATTERS: Bali Declaration: The Bali Declaration on a way forward for the transition towards low-GWP alternatives to ODS (UNEP/OzL.Pro.23/CRP.8) was introduced by Indonesia on Monday, and parties agreed to consider it under Other Matters. Throughout the week Indonesia consulted informally with parties and, on Friday morning, held an informal briefing with parties to discuss the Declaration.

During Friday’s plenary, Indonesia explained that 76 countries had signed the Bali Declaration. He explained the Declaration would remain open and expressed hope that other countries would sign on. The EU explained it was still consulting internally, but said it hoped to sign soon. Australia, the Bahamas, and the US also supported the Declaration. The US noted that its Bangkok Declaration was now closed, and expressed hope that the 107 parties that had signed it, would now sign on to the Bali Declaration on a way forward for the transition towards low-GWP alternatives to ODS.

CLOSING PLENARY

On Friday afternoon, the high-level segment convened and considered the report of the meeting (UNEP/OzL.Conv.9/L.1-UNEP/OzL.Pro.23/L.1, Add.1 and Add.2), and adopted it after lengthy debate by parties on the reflection of the discussion on HFC amendment proposals. India objected to the reference to “many” parties supporting discussing the US amendment proposal. Several parties intervened indicating that they did support discussing the proposal. Parties eventually agreed to replace the reference to “many” with “some” parties. Venezuela

objected to the reference to “significant time” being spent on the discussion, stating that the time spent was not significant. Parties agreed to remove this reference.

Delegates also adopted the compilation of draft decisions (UNEP/OzL.Conv.9/1-UNEP/OzL.Pro.23/L.2), and CRPs that had been forwarded from the plenary.

Delegates then turned their attention to administrative decisions and adopted decisions on the location and dates of the next MOP and COP. In one decision (UNEP/OzL.Conv.9/1-UNEP/OzL.Pro.23/3,II.[F]), the MOP decides to convene MOP 24 to the Montreal Protocol in Geneva, Switzerland in November 2012 and to announce the firm dates and venue for the meeting as soon as possible. In a second decision (UNEP/OzL.Conv.9/1-UNEP/OzL.Pro.23/3,II.[G]), the COP decides: to convene COP 10 to the Vienna Convention back-to-back with MOP 26 to the Montreal Protocol.

Late in the afternoon, plenary reconvened briefly and heard a report from the contact group on QPS use of methyl bromide, which reported it had completed its work. The Contact Group on Replenishment reported it had failed to make progress on the agreement of a replenishment amount and plenary was suspended.

At 7:30 pm plenary reconvened and the Contact Group on Replenishment reported it had not reached agreement. Parties agreed to grant the group an additional hour in a final attempt to agree on a replenishment amount.

At 10:29 pm plenary reconvened and the Replenishment Contact Group announced an agreement of US\$450 million for 2012-2014, and parties agreed to forward the associated decision to the high-level segment, which then convened and adopted the decision.

China, India and Brazil commented on the result of the replenishment negotiation with mixed feelings, noting their disappointment with the level of the agreed figure. President Abilio thanked participants, the Secretariat and the Government of Indonesia and gavelled COP 9/MOP 23 to a close at 11:15 pm.

A BRIEF ANALYSIS OF THE MEETING

“One treaty alone, one group alone, may not be sufficient to protect the complex global environment of our planet” was the opening message by Executive Secretary Marco González to COP 9/MOP 23. González reminded delegates that their actions in Bali could support or constrain efforts that address climate change and urged parties to take action that protects the ozone layer while also providing climate benefits. His statement underscored the increased inter-linkages between economic and environmental issues within a policy space where treaties are still primarily focused on single issues. The challenges faced by delegates at COP 9/MOP 23—phasing down HFCs, climate change and replenishment of the Multilateral Fund—reflected these inter-linkages and tested delegates with some of the most difficult negotiations the Protocol has ever experienced.

COP 9/MOP 23 were unsuccessful in their efforts to make progress in phasing-down HFCs and to address climate change through the Protocol, but succeeded in agreeing on US\$450 million for the MLF replenishment, a credible achievement in tough economic times. This decision was achieved in a tough negotiating environment: both Article 5 and non-Article 5 parties

described the replenishment negotiations as the most difficult and tiresome they had ever experienced. The two main challenges that plagued delegates at this meeting—financial replenishment and linkages with climate change—are issues outside the Protocol itself. The economic crisis and the collapse of climate change negotiations influenced the flexibility some delegates had to negotiate in Bali and hinted that outside factors and tensions are infusing the atmosphere of the Protocol.

The continued success of the Protocol depends on whether it can continue to achieve consensus among parties to strengthen and expand the coverage of Protocol, and adequately finance these activities. This analysis examines COP 9/MOP 23 in light of these challenges, and in the context of an increasingly complex global environment.

REPLENISHING INFINITY AND BEYOND

The Multilateral Fund provides funding for 147 of the 196 parties to the Montreal Protocol to meet their commitments to phase out their consumption and production of ODS. Since its establishment in 1991, the fund has been replenished seven times, with the US\$450 million replenishment agreed in Bali representing the eighth replenishment. Article 5 countries originally favored a figure of US\$490 million while non-Article 5 countries proposed US\$400 million. As the two sides failed to reach agreement, the contact group Co-Chairs proposed a “Co-Chairs’ compromise” figure of US\$445 million. Neither Article 5 nor non-Article 5 parties accepted this amount, leaving the contact group at a stalemate. After plenary statements signaled that the future of the Protocol hinged on an agreement, the contact group returned to negotiations and settled on US\$450 million.

While this flexibility allowed parties to leave Bali with an agreement, many Article 5 countries were left deeply unhappy with what they considered to be an insufficient replenishment. Still, several participants pointed out that several hundred million dollars is a credible achievement, with one participant saying it is still “impressive under the circumstances,” referring to the economic constraints faced by many non-Article 5 countries. Moreover, despite the historically low replenishment, the very existence of a dedicated financial mechanism remains the envy of other MEAs.

While the MLF replenishment represents an acceptance of the status quo, which is how the Protocol has worked for the past 20 years, the global economy is changing. Some non-Article 5 parties went as far as to suggest the emergence of a new world order, noting that several Article 5 countries have higher GDPs than some non-Article 5 countries. Some quipped that non-Article 5 countries borrow from Article 5 countries to meet their financial commitments under the MLF. Such a situation is becoming increasingly unsettling for many donor countries, with Japan indicating in its opening remarks that the current arrangement cannot continue *ad infinitum*.

Looking to the future, some suggested that while the Protocol has no plans to reclassify Article 5 parties, South Africa and South Korea have already set a precedent in not using MLF financing to fund their final CFC phase-out. In addition, a few Article 5 countries have agreed to make contributions to the cost of their respective HCFC phase-out management plans. Some

participants voiced a desire for the MLF to move towards a more nuanced funding structure in the future, suggesting the concept of co-financing, akin to the Global Environment Facility.

Article 5 countries also sent clear signals that they require confirmation of sufficient funding before taking on new obligations. India warned that his country would step out of the accelerated phase-out agreement if adequate financing was not provided. Argentina cautioned that, while they are a proponent of accelerated elimination, this position was based on an understanding of stable and sufficient funding. Brazil echoed this sentiment, stating that before they would be willing to take on new commitments, they would require assurance of sufficient funding. These statements underscored the unwillingness of some Article 5 countries to consider future obligations that address the interlinkages between the Protocol and other MEAs, such as the UNFCCC and HFC phase-down, at a time when many parties lack confidence in the sustainability of the funding stream. While negotiating dynamics are likely to be more acute during replenishment years, the broader debate about whether the role of Protocol vis-à-vis other MEAs is likely to cause tensions in future MOP negotiations.

TO AMEND OR NOT TO AMEND

HFCs, substances originally proposed as HCFC alternatives because of their low-ozone depleting potential, are now recognized as having high-global warming potential (GWP) and are included in the UNFCCC “basket of greenhouse gases.” Yet, any hopes that COP 9/MOP 23 would expand its mandate to ban HFCs to achieve positive outcomes for both the atmosphere and the climate were dashed when India and China refused to consider two proposals to phase-down HFCs from being discussed in a contact group, arguing that such discussions were outside the mandate of the Protocol. This decision disappointed many parties, who were realistic enough to know 2011 was not to be the “amendment year,” but felt that incremental progress might have been possible through contact group discussions.

This lack of traction led some to question the need to consider other options for addressing HFC emissions under the Protocol. Currently the MLF will pay a small premium for countries that use low-GWP alternatives—but that payment is limited to specific sectors. Other options include revising MLF guidelines to seize funding conversions to HFCs. Several NGOs stressed the importance of MLF investment in low-GWP alternatives to assist in the commercialization of alternatives, making them increasingly affordable while investing in HFC conversions represented wasted money. Most recognize, however, that the MLF finance will not stretch that far, pointing to a discernible gap between HFC amendment ambition and ability to finance.

The HFC situation presents both challenges and opportunities for the Protocol. There is potential for joint wins with the climate regime, which could benefit from addressing HFCs under the Montreal Protocol, which has a proven track record for phasing out specific substances.

Tension during Protocol discussions that touched upon climate change continued as contact groups met through the week, such as during the ODS alternatives contact group debate over whether to request TEAP to undertake a study, taking into account the work of the Intergovernmental Panel on Climate Change (IPCC). TEAP and the IPCC conducted a

joint study in 2005, setting a precedent for such joint studies and work; however, reaching consensus on a similar proposal proved difficult. Parties expressed reservations about integrating IPCC and UNFCCC work into the study, noting that scientific input can be provided by other experts. The hardened position towards this proposal caused several to lament that parties were actually regressing. Furthermore, the inability to consider the potential joint benefits of the HFC proposals suggests a missed opportunity for the Protocol to lead the way in joint action with complementary MEAs to address future challenges of an increasingly complex world.

NAVIGATING THE POLITICAL DIVIDE

Despite its historical success as a science-based regime, COP 9/MOP 23 showed that the Montreal Protocol can also become victim to politicized discussions and aggressive posturing. Time and again in both contact groups and the plenary, parties argued over the inclusion of previously agreed text in decisions, the substances controlled under the Protocol, and even in the reflection of statements in the meeting report. The usual harmonious and conciliatory tone of negotiations eroded at COP 9/MOP 23, with traditional diplomatic gestures at a minimum, and drawing one response in plenary, noting “the tenor of speech, which would indicate that nothing was acceptable.” Several mentioned the temporal proximity of the Durban Climate Change Conference as one explanation for the tension, and hoped that MOP 24 would see a resumption of mutual respect.

Despite the challenges faced in Bali, key elements of the Protocol’s work remain alive and well. Scientific and technical experts confirmed the Montreal Protocol’s success in phasing out CFCs, halons and carbon tetrachloride, and provided guidance for further action. In addition, successful discussions on formalizing the TEAP and its membership signify the Protocol’s commitment to ensuring informed scientific and technical expertise, but also to limiting potential for vested interests and to institute greater accountability in its administrative processes around selection of experts. With parties’ increased leverage, however, comes the risk that country positions on the Kyoto Protocol begin to influence these processes, with the risk of devaluing the impartiality of scientific and technical advice that drives decision making under the Montreal Protocol.

The Protocol still faces many challenges including defining the best avenues for activities with mutual benefits to the broader global environment. The continued stalemate with the HFC amendment suggests the necessity for high-level discussions, a step some recalled was also necessary to agree to HCFC phase-out acceleration. Many hoped that the proponents would initiate this before MOP 24 to allow the Protocol to move forward, as opposed to using significant MOP negotiating time, at the expense of other issues.

Furthermore, the compromise represents a commitment to the regime’s credibility. The flexibility of parties to compromise on a figure that they clearly had reservations about, in a fraught negotiating climate, signifies that the most successful treaty is not a myth but a reality. Three options remain for parties at MOP 24 on the issues of HFCs: to address HFCs under the Protocol; to consider cooperation with the UNFCCC; or to firmly decide that the Protocol will not expand its mandate. Such decisions have the potential to reinforce an inward-looking global environmental

governance regime in which treaties focus on single issues or to send a signal to other MEAs that broader cooperation and a new environmental governance regime is necessary to address today’s complex, inter-linked economic and environmental challenges.

UPCOMING MEETINGS

UNFCCC COP 17 and COP/MOP 7: The 17th session of the UNFCCC Conference of the Parties (COP 17) and the 7th session of the Meeting of the Parties (MOP 7) to the Kyoto Protocol will take place in Durban, South Africa. The 35th session of the Subsidiary Body for Implementation (SBI), the 35th session of the Subsidiary Body for Scientific and Technological Advice (SBSTA), the *Ad Hoc* Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP), and the *Ad Hoc* Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) will also meet. **dates:** 28 November - 9 December 2011 **location:** Durban, South Africa **contact:** UNFCCC Secretariat **phone:** +49-228-815-1000 **fax:** +49-228-815-1999 **email:** secretariat@unfccc.int **www:** <http://unfccc.int/> and <http://www.cop17durban.com>

42nd International Congress on Heating, Air Conditioning and Refrigeration: This international congress is co-sponsored by the Serbian Society for Heating, Refrigeration and Air-Conditioning and the International Institute of Refrigeration, an intergovernmental science and technology-based organization promoting knowledge of refrigeration and associated technologies. **dates:** 30 November - 2 December 2011 **location:** Belgrade, Serbia **contact:** Branko Todorovic **phone:** +381-11-3230-041 **fax:** +381-11-3231-372 **email:** office@smeits.rs **www:** <http://www.kgh-kongres.org/eng/>

Workshop on Competitiveness, Innovation and REACH: This workshop, organized by DG Enterprise and Industry, in collaboration with DG Environment, will focus on the impact of the REACH regulation on the competitiveness and innovativeness of the EU chemical industry. **date:** 6 December 2011 **location:** Brussels, Belgium **contact:** DG Enterprise and Industry, European Commission **email:** entr-reach@ec.europa.eu **www:** http://ec.europa.eu/enterprise/sectors/chemicals/reach/events/index_en.htm#h2-1

Thematic workshop on Assessment of compliance status and HPMP implementation: This workshop will assess the compliance status and HCFC Phase-out Management Plan for French-speaking Central Africa. **dates:** 13-16 December 2011 **location:** Bangui, Central African Republic **contact:** OzonAction Branch, Division of Technology, Industry and Economics, UNEP Regional Office for Africa **email:** Jeremy.Bayze@unep.org **www:** <http://www.unep.org/ozonaction/Events/tabid/6255/Default.aspx>

Alternatives Identification and Assessment Training: The training is organized by the Regional Activity Centre for Cleaner Production under the EU life project SUBSPORT and intends to provide authorities, industry, trade unions, NGOs and other interested parties with information and tools to facilitate the substitution of hazardous chemicals in products and processes with safer alternatives to the use of POPs and other chemicals. **date:** 13 December 2011 **location:** Barcelona, Spain **contact:**

Enrique de Villamore **phone:** +34-93-553-8795 **fax:** +34-93-553-8795 **email:** vvidal.tecnic@cprac.org **www:** <http://www.cprac.org/>

First International Exhibition on Waste Management, Recycling and Biomass: This international exhibition is organized with the cooperation of the regional centres of the Basel and Stockholm conventions in Tehran. **dates:** 8-11 January 2012 **location:** Tehran, Iran **contact:** Simatin Management Service Institute **phone:** +98-21-882-33209 **fax:** +98-21-882-33144 **email:** wastemanagement@simatin.ir **www:** www.wastemanagement.simatin.ir

Twelfth Special Session of the UNEP Governing Council/Global Ministerial Environment Forum: The Governing Council/Global Ministerial Environment Forum of the UN Environment Programme (UNEP) will focus on the UNCSDD themes of the green economy and the institutional framework for sustainable development. **dates:** 20-22 February 2012 **location:** Nairobi, Kenya **contact:** Secretary, Governing Bodies, UNEP **phone:** +254-20-762-3431 **fax:** +254-20-762-3929 **email:** sgc.sgb@unep.org **www:** <http://www.unep.org/resources/gov/>

Eighth Meeting of the Chemicals Review Committee: The next meeting of the Rotterdam Convention Chemicals Review Committee will take place in March 2012. **dates:** 18-23 March 2012 **location:** Geneva, Switzerland **contact:** Rotterdam Convention Secretariat **phone:** +41-22-917-8296 **fax:** +41-22-917-8082 **email:** pic@pic.int **www:** <http://www.pic.int/>

Planet Under Pressure Conference: The conference will provide a comprehensive update and discussion of solutions at all scales to move societies on to a sustainable pathway, providing scientific leadership towards the 2012 UN Conference on Sustainable Development (Rio+20). The conference is organized by the International Geosphere-Biosphere Programme, DIVERSITAS, the International Human Dimensions Programme on Global Environmental Change, the World Climate Research Programme and Earth System Science Partnership. **dates:** 26-29 March 2012 **location:** London, United Kingdom **phone:** +44-1865-84-3000 **email:** customerservice-planetupressure12@elsevier.com **www:** <http://www.planetunderpressure2012.net/index.asp>

66th meeting of the Executive Committee to the Multilateral Fund of the Montreal Protocol: The next meeting of the Excom will be in Montreal. **dates:** 16-20 April 2012 **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/>

Fourth Session of the INC to Prepare a Global Legally Binding Instrument on Mercury: This meeting is scheduled to be the fourth of five INC meetings to negotiate a legally binding instrument on mercury. **dates:** 25-29 June 2012 **location:** Punta del Este, Uruguay **phone:** +41-22-917-8192 **fax:** +41-22-797-3460 **email:** mercury.chemicals@unep.org **www:** <http://www.unep.org/hazardoussubstances/Mercury/Negotiations/tabid/3320/Default.aspx>

United Nations Conference on Sustainable Development: The UNCSDD (or Rio+20) will focus on the themes of green economy in the context of sustainable development and poverty eradication and institutional framework for sustainable

development. **dates:** 20-22 June 2012 **location:** Rio de Janeiro, Brazil **contact:** UNCSDD Secretariat **email:** uncsd2012@un.org **www:** <http://www.uncsd2012.org/>

OEWG 32: The 32nd session of the Open-Ended Working Group of the Montreal Protocol is scheduled to convene in mid-2012. **dates:** tbc **location:** tbc **contact:** Ozone Secretariat **phone:** +254-20-762-3851 **fax:** +254-20-762-4691 **email:** ozoneinfo@unep.org **www:** <http://montreal-protocol.org>

Eighth meeting of the Persistent Organic Pollutants Review Committee (POPRC-8): POPRC-8 will consider draft risk profiles for HCB, CNs and SCCPs, and continue their consideration of PCP. They will also continue their work on newly listed POPs and prepare recommendations for COP-6. **dates:** 15-19 October 2012 **location:** Geneva, Switzerland **contact:** Stockholm Convention Secretariat **phone:** +41-22-917-8729 **fax:** +41-22-917-8098 **email:** scc@unep.ch **www:** <http://www.pops.int>

24th Montreal Protocol MOP: The 24th session of the Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (MOP 24) is scheduled to take place in Geneva. **dates:** 12-16 November 2012 **location:** Geneva, Switzerland **contact:** Ozone Secretariat **phone:** +254-20-762-3851 **fax:** +254-20-762-4691 **email:** ozoneinfo@unep.org **www:** <http://montreal-protocol.org>

GLOSSARY

CFCs	Chlorofluorocarbons
COP	Conference of the Parties
CTC	Carbon tetrachloride
CTOC	Chemical Technical Options Committee
CUE	Critical-use exemption
EEAP	Environmental Effects Assessment Panel
ExCom	Executive Committee
GWP	Global warming potential
HCFC	Hydrochlorofluorocarbons
HFC	Hydrofluorocarbons
HPMP	HCFC Phase-Out Management Plan
ImpCom	Implementation Committee
IPCC	Intergovernmental Panel on Climate Change
MTOC	Medical Technical Options Committee
MBTOC	Methyl Bromide Technical Options Committee
MDI	Metered-dose inhaler
MLF	Multilateral Fund
MOP	Meeting of the Parties
ODS	Ozone depleting substances
OEWG	Open-ended Working Group
QPS	Quarantine and pre-shipment
SAP	Scientific Assessment Panel
TEAP	Technology and Economic Assessment Panel
TOC	Technical Options Committee
UNFCCC	United Nations Framework Convention on Climate Change



International Institute for Sustainable Development Reporting Services (IISD RS) Knowledge Management Resources

IISD RS, publisher of the *Earth Negotiations Bulletin*, also maintains online knowledgebases that are updated daily with information regarding meetings, publications and other activities related to international sustainable development policy and its implementation.

Each knowledgebase project consists of several integrated resources, to help the sustainable development policy and practice communities assess trends and activities at the international level. These resources are:

- Daily news reports researched and written by our own experts and organized in a **freely accessible, searchable on-line knowledgebase**;
- A **comprehensive calendar of upcoming events** related to international sustainable development policy, which can be downloaded to your own online calendar;
- And a **community listserve**, which exclusively delivers email updates of the most recent additions to our knowledgebases, as well as announcements by listserve members regarding their organizations' sustainable development activities.

Each knowledgebase focuses on a specific environmental challenge or region, as noted below:



Sustainable Development Policy & Practice
<http://uncsd.iisd.org/>



Climate Change Policy & Practice
<http://climate-l.iisd.org/>



SIDS Policy & Practice
<http://sids-l.iisd.org/>



Biodiversity Policy & Practice
<http://biodiversity-l.iisd.org/>



Latin America & Caribbean Regional Coverage
<http://larc.iisd.org/>



African Regional Coverage
<http://africasd.iisd.org/>