

Summary of the 16th Meeting of the Persistent Organic Pollutants Review Committee (POPRC-16) to the Stockholm Convention on Persistent Organic Pollutants: 11-16 January 2021

With the COVID-19 pandemic causing global disruptions, the sixteenth meeting of the Persistent Organic Pollutants (POPs) Review Committee (POPRC-16) to the Stockholm Convention on POPs convened four months later than originally scheduled and online rather than in person. Despite the constraints of a virtual format, the POPRC addressed the same agenda it had planned for an in-person meeting in September 2020.

The Committee reviewed three potential POPs—methoxychlor, Dechlorane Plus, and UV-328—and undertook work to support parties' efforts to eliminate several substances that have already been listed in the Stockholm Convention: decabromodiphenyl ether, short-chain chlorinated paraffins, and perfluorooctanoic acid. The reviews of Dechlorane Plus and UV-328 proved to be particularly challenging for the Committee, raising questions about how the POPRC should address newer chemicals that have not been extensively studied.

POPRC-16 considered a Swiss proposal to list UV-328, a plastic stabilizer, in Annex A (Elimination) of the Convention. At this first stage of review the Committee is required to determine whether a substance meets the Annex D screening criteria of persistence, bioaccumulation, adverse effects, and potential for long-range environmental transport. Discussions focused on this last criterion, as the proposal highlights the global spread of plastic debris containing UV-328 as a potential mechanism for long-range transport. Many participants expressed concern that accepting this hypothesis could open the door to classifying any plasticizer or substance that adsorbs to plastic as a POP; while the Committee ultimately agreed to advance UV-328 to the next stage of review, they also decided to establish an intersessional working group to develop guidance on application of the long-range transport criterion.

A second key issue for POPRC-16 was Dechlorane Plus, which remains at the second stage of review. Participants were divided on whether the draft risk profile presented sufficient evidence of adverse effects, with some calling for collection of additional data and others recommending the committee use a weight of evidence approach to determine that global action is warranted.

In this meeting, as in the past, the POPRC relied on a combination of precedent and flexibility to evaluate evidence and determine how to proceed. This meeting also foreshadowed

looming challenges related to availability of evidence to support evaluation of newer chemicals and when it is appropriate to take precautionary action.

POPRC-16 convened virtually from 11-16 January 2021. During the six-day meeting, over 150 participants from around the world logged into virtual plenary, contact group, drafting group, and informal consultative sessions to complete the Committee's work. The daily schedule included two hours for plenary sessions with interpretation and two hours for contact groups working in English.

A Brief History of the Stockholm Convention and the POPRC

During the 1960s and 1970s, the use of chemicals and pesticides in industry and agriculture increased dramatically. In particular, a category of chemicals known as POPs attracted international attention due to a growing body of scientific evidence indicating that exposure to very low doses of POPs can lead to cancer, damage to the central and peripheral nervous systems, diseases of the immune system, reproductive disorders, and interference with normal infant and child development.

POPs are chemical substances that persist in the environment, bioaccumulate in living organisms, and can have adverse effects on human health and the environment. With further evidence of the long-range environmental transport of these substances to regions where they have never been used or produced, and

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the consequent threats they pose to the global environment, the international community called for urgent global action to reduce and eliminate their release into the environment.

The negotiations for the Stockholm Convention were launched by the UN Environment Programme's Governing Council in February 1997. The Stockholm Convention was adopted in May 2001, entered into force on 17 May 2004, and currently has 184 parties. The Convention can list chemicals in three annexes:

Annex A contains chemicals to be eliminated; Annex B contains chemicals to be restricted; and Annex C calls for the minimization of unintentional production and release of listed chemicals. When adopted in 2001, 12 POPs were listed in these annexes, including:

- pesticides: aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, and toxaphene;
- industrial chemicals: hexachlorobenzene and polychlorinated biphenyls (PCBs); and
- unintentionally produced POPs: dioxins and furans.

The role of the POPRC: The Stockholm Convention specifies a procedure to identify and list additional POPs. At the first meeting of the Conference of the Parties (COP1), held in Punta del Este, Uruguay, from 2-6 May 2005, the POPRC was established to consider additional substances nominated for listing under the Convention.

The Committee is comprised of 31 experts nominated by parties from the five UN regional groups and reviews nominated chemicals in three stages. The Committee first determines whether the substance fulfills the screening criteria detailed in Annex D of the Convention, relating to the chemical's persistence, bioaccumulation, potential for long-range environmental transport, and adverse effects on human health or the environment. If a substance is deemed to fulfill these requirements, the Committee then drafts a risk profile according to Annex E to evaluate whether the substance is likely, as a result of its long-range environmental transport, to lead to significant adverse human health and/or environmental effects and therefore warrants global action. Finally, if the POPRC finds that global action is warranted, it develops a risk management evaluation according to Annex F, reflecting socio-economic considerations associated with possible control measures. Based on this, the POPRC decides whether to recommend that the COP list the substance under Annex A (elimination), B (restriction), and/or C (minimize unintentional production and release) to the Convention.

The POPRC has met annually since its establishment.

Chemicals Reviewed in the POPRC Process

The first eight meetings of the POPRC were held in Geneva, Switzerland. Subsequent meetings have been held in Rome, Italy. To date, the COP has listed all 18 POPs recommended by the POPRC. While for most parties the amendment listing a new POP enters into force automatically within a set time frame after the COP listing, parties can opt out of an amendment and some parties have submitted notification upon ratification that they must opt in to each amendment.

POPRC-1 to 4: The first four meetings of the POPRC met between 2005 and 2008. During this time, the POPRC recommended that the COP consider listing the following POPs under Annexes A, B, and/or C: alpha and beta hexachlorocyclohexane; chlordecone; commercial octabromodiphenyl ether (c-octaBDE); commercial pentabromodiphenyl ether (c-pentaBDE); hexabromobiphenyl (HBB); lindane; pentachlorobenzene (PeCB); and perfluorooctane

sulfonic acid (PFOS), its salts, and perfluorooctane sulfonyl fluoride (PFOSF). At POPRC-2, the Committee also agreed to create a draft risk profile for short-chain chlorinated paraffins (SCCPs), an issue that would return to the POPRC's agenda several times before the Committee decided to recommend SCCPs for listing at its twelfth meeting. At POPRC-4, the Committee evaluated a proposal to list endosulfan under the Convention and agreed, by majority vote, that it met the Annex D screening criteria.

POPRC-5: At this meeting in 2009 the Committee agreed that hexabromocyclododecane (HBCD) meets the Annex D criteria for listing and that a draft risk profile should be prepared. A draft risk profile for endosulfan was considered and, by a majority vote, the Committee decided to move endosulfan to the Annex F phase, while inviting parties to submit additional information on adverse effects on human health.

POPRC-6: In 2010, the Committee adopted the risk profile for HBCD. The POPRC also agreed, by a majority vote, to adopt the risk management evaluation for endosulfan and recommend listing the substance in Annex A with exemptions.

POPRC-7: At its 2011 meeting the Committee addressed several issues, including: advancing chlorinated naphthalenes (CNs) and hexachlorobutadiene (HCBd) to the risk profile stage; and recommending that parties consider listing HBCD in Annexes A, B, and/or C of the Convention. For the first time, the Committee considered POPs alternatives, with assessment of alternatives to PFOS in open applications, DDT, and endosulfan.

POPRC-8: In 2012, the Committee adopted 12 decisions, including on: advancing pentachlorophenol (PCP), its salts and esters to the risk profile stage of review; advancing CNs and HCBd to the risk management evaluation stage; and amending POPRC-7's decision on HBCD to recommend that parties consider listing it in Annex A with specific exemptions.

POPRC-9: In 2013, the Committee adopted nine decisions, including on: the commercial mixture of decabromodiphenyl ether (c-decaBDE); PCP, its salts and esters; CNs; HCBd; guidance on alternatives to PFOS, its salts, PFOSF and their related chemicals; and the process for evaluation of PFOS, its salts and PFOSF for acceptable uses.

POPRC-10: At this meeting in 2014, the Committee adopted seven decisions including, *inter alia*, that: dicofol meets the Annex D criteria; c-decaBDE should move to the risk management evaluation stage; and a recommendation should be made to COP7 for PCP, its salts and esters to be listed in Annex A to the Convention with specific exemptions for the production and use of PCP for utility poles and cross-arms. The Committee also adopted a decision on alternatives to PFOS, its salts and PFOSF.

POPRC-11: At this meeting in 2015, the Committee adopted seven decisions, including a decision to adopt the draft risk profile of SCCPs, which had been under review by the POPRC for nine years. The POPRC also decided, *inter alia*, that perfluorooctanoic acid (PFOA), its salts, and PFOA-related compounds met the Annex D screening criteria, and adopted the draft risk management evaluation on decaBDE. The Committee deferred its decision on a draft risk profile of dicofol to POPRC-12.

POPRC-12: At its 2016 meeting the Committee adopted seven decisions, including on SCCPs; dicofol; PFOA, its salts and PFOA-related compounds; HCBd; decaBDE; and guidance on alternatives to PFOS and its related chemicals.

POPRC-13: In 2017, the Committee adopted four decisions, including recommending the listing of dicofol in Annex A to the Convention, and recommending listing PFOA, its salts, and related compounds in Annex A or B with specific exemptions.

POPRC-14: At its 2018 meeting, the POPRC decided to recommend listing PFOA, its salts, and related compounds in Annex A of the Convention, with specific exemptions for some uses, including firefighting foams; and decided to recommend to the COP that some uses permitted under the Convention for PFOS, its salts, and PFOSF should be eliminated, due to the availability of safer alternatives. The Committee also adopted the risk profile for perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds.

POPRC-15: At its 2019 meeting, the POPRC decided to recommend listing PFHxS, its salts, and related compounds in Annex A of the Convention without specific exemptions. The Committee also concluded that proposals to list methoxychlor and Dechlorane Plus and its syn- and anti-isomers satisfied the Annex D screening criteria and should move forward to the draft risk profile stage.

POPRC-16 Report

Peter Dawson, New Zealand, Interim Chair of the Persistent Organic Pollutants (POPs) Review Committee (POPRC), opened the meeting on Monday, 11 January 2021, acknowledging the heavy agenda and encouraging participants to stay focused and work through it in spite of the online format. Rolf Payet, Executive Secretary of the Basel, Rotterdam, and Stockholm (BRS) Conventions, welcomed participants and highlighted the far-reaching impact of the POPRC's work, including on the upcoming fifth session of the UN Environment Assembly (UNEA-5). Payet commended participants' active participation at the pre-meetings, held online from 1-3 December 2020, emphasizing that these meetings had provided an important opportunity to discuss technical work and address key issues ahead of POPRC-16.

The POPRC adopted the provisional agenda (UNEP/POPS/POPRC.16/1) and agreed to the organization of work (UNEP/POPS/POPRC.16/INF/1/Rev.1 and INF/2/Rev.1).

Rotation of the Membership

The Secretariat introduced the rotation of the membership and experts nominated as members of the POPRC (UNEP/POPS/POPRC.16/INF/3), noting that at COP10 new members will need to be nominated to fill vacancies left by members whose terms have expired.

Technical Work

Consideration of draft risk profiles: Dechlorane Plus and its syn- and anti-isomers: On Wednesday, the Secretariat introduced the revised draft risk profile of Dechlorane Plus (UNEP/POPS/POPRC.16/CRP.2), prepared intersessionally, which took into account comments raised at the POPRC-16 pre-meetings (UNEP/POPS/POPRC.16/CRP.3). Victorine Pinas (Suriname), Chair of the Intersessional Working Group on this flame retardant, noted that former POPRC member Andreas Buser led the drafting until his term ended in May 2020, drafting was subsequently led by POPRC member Christina Tolfsen (Norway), and former POPRC member Christel Olsen (Norway) had assisted.

Pinas highlighted recent changes to the draft risk profile, including a shortened title omitting reference to isomers, incorporation of suggested edits and new studies, new text on environmental distribution, and new information on long-range transport. She explained that this chlorinated flame retardant is used in high volume in a variety of applications, including electrical cables and coatings, connectors in TV and computer monitors, and automobiles and aviation. She summarized data indicating that the evidence of persistence, bioaccumulation, and potential for long-range environmental transport are sufficient, and reviewed information on adverse effects, noting evidence of:

- oxidative damage across species (algae, bivalves, fish, earthworms, birds, mice, rats);
- potential for endocrine disruption (fish, mice, humans);
- neurotoxicity in zebrafish and earthworms;
- liver and adipose tissue impairments (mice and rats);
- blood-brain barrier crossing in fish and frogs; and
- maternal transfer with exposure of embryo/developing organism at vulnerable stages (fish, frogs, birds, sharks, humans).

She concluded that although data are limited and chronic toxicity studies are lacking, there are studies showing that Dechlorane Plus may have adverse effects on the environment, and that it is potentially toxic to mammals and humans.

Canada said that the draft risk profile meets the criteria for persistence, bioaccumulation, and long-range environmental transport, and that data indicating damage to the environment demonstrates adverse effects. Belarus and Ghana said evidence that Dechlorane Plus meets the criteria for persistence, bioaccumulation, and long-range environmental transport are incontrovertible, and while more information on adverse effects on human health would be desirable, POPRC could move forward with this substance.

Belgium concurred that there was “no uncertainty” regarding persistence, bioaccumulation, and long-range transport, highlighted the importance of the precautionary principle, and emphasized that if there is evidence of potential adverse effects it is important not to wait to see those effects. Austria emphasized that Annex E requires evidence of adverse effects on human health and/or the environment, but not necessarily both, and studies demonstrate exposure.

Costa Rica called for discussion of toxicity in a contact group, noting that moving to the next stage of review would provide information about possible substitutes. Pakistan and China called for further discussion in a contact group.

Japan said that the new data are not sufficient to show that Dechlorane Plus has significant adverse effects on human health and the environment, and called for intersessional work to collect more reliable data on adverse effects.

Noting that Dechlorane Plus is currently marketed as a replacement for decaBDE, International Pollutants Elimination Network (IPEN) emphasized that studies demonstrate adverse effects on human health and the environment and expressed strong agreement with the conclusion that global action is warranted. An observer from Switzerland emphasized that Dechlorane Plus is a chemical “we do not want to have in the environment or in our bodies” and said, applying the precautionary principle, it needs to be banned globally.

An observer from the United States said while the draft risk profile provides sufficient information on persistence, bioaccumulation and long-range transport, there is not sufficient information on adverse effects on human health and thus

the proposal should be set aside. She further emphasized the importance of assessing chemicals proposed for listing on the basis of available evidence and not by comparing them with other substances. An observer from the UK said the evidence of adverse effects was not convincing and called for clear justification if a read-across method, using data from a similar substance as a proxy, were to be used.

An observer from Japan said that available evidence does not demonstrate adverse effects for humans or the environment and therefore DDT does not meet the Annex E criteria.

Acknowledging “some limitations” in toxicity data, Tolsen emphasized that the Stockholm Convention should rely on the precautionary approach and that Annex E criteria are met overall. Denmark expressed regret that so few studies on adverse effects are available given the widespread use of DDT.

The POPRC agreed to establish a contact group chaired by Pinas. On Wednesday, the group started with in-depth discussions of the question of adverse effects, with several pointed exchanges on the reliability of cited studies and their relevance to human exposure at low doses. Several participants underscored the need to draw conclusions on the basis of the weight of evidence across all studies. The contact group then undertook a paragraph-by-paragraph review of the draft risk profile, with numerous editorial suggestions from members and observers.

On Friday, the contact group focused on the section on adverse effects, with divergent views on which evidence should be presented in the document and in what manner. Several participants expressed concern about the validity and reliability of data included in the draft, questioning the appropriateness of drawing conclusions based on this information. Others, pointing to the small number of studies available to support decision-making, emphasized the importance of looking at all available information and using a weight of evidence approach. Having completed a close reading of the paragraphs related to adverse effects, the group agreed to delete a table summarizing available evidence the substance’s POPs characteristics at the end of the risk profile so as to avoid reopening the same discussions, and to add text summarizing the section on adverse effects.

The contact group was extended beyond its scheduled meeting time to allow for discussion of the concluding statement of the risk profile. Participants disagreed as to whether the evidence on adverse effects on the environment and/or human health was such that the Committee could conclude global action is warranted. Opponents emphasized the data was too limited to justify such a conclusion, with one member noting a high-dose study designed to show effects in order to illustrate the mechanism of DDT’s impact on an organism should not serve as the basis of a finding of adverse effects on the environment.

Proponents of moving DDT to the next stage of review cited the Convention’s precautionary approach. Some pointed to the importance of reading the available data of molecular effects as an early warning of adverse effects. Others underscored that some potential effects, such as those affecting insulin, should be recognized for their impact on populations already facing other stressors.

Discussions then moved to a drafting group open only to members and Norway, the party that put forward the nomination to list DDT in 2019.

On Saturday, the Secretariat introduced a draft decision and revised draft risk profile (UNEP/POPS/POPRC.16/CRP.14 and CRP.15), and flagged a submission by Norway containing a

proposal to resolve several paragraphs in the draft risk profile that had been the subject of informal consultations (UNEP/POPS/POPRC.16/CRP.16/Rev.1).

Belarus, Canada, and Ghana supported concluding that global action is warranted and moving the substance to the risk management evaluation stage of review. Austria noted that while the evidence on adverse health effects in humans is not conclusive, she supported a finding of adverse effects on the environment.

Citing concerns about the reliability of available studies on adverse effects, Japan supported deferring the decision to a future meeting.

IPEN said global action is warranted based on evidence for persistence, bioaccumulation, pervasive distribution throughout the global environment and in humans, and the compelling overall evidence of endpoints of concern for adverse effects. She underscored that DDT is transferred across generations in animals and humans, and has indications of neurotoxicity and endocrine-disrupting properties.

An observer from the UK said there was insufficient evidence on adverse effects but emphasized this does not mean DDT should be considered safe.

An observer from Switzerland pointed to text of the Convention stating that “lack of full scientific certainty shall not prevent the proposal from proceeding.” He expressed doubt that long-term studies would be available in a reasonable time and supported applying the precautionary principle and moving the substance forward.

China emphasized that POPRC is a scientific body and said it is up to parties, and not the POPRC, to decide whether to apply a precautionary approach.

An observer from the US supported deferring a decision on the substance pending additional research.

Noting the draft risk profile includes information on potential endocrine effects in animal models and humans, Pesticide Action Network – North America said DDT should move to the risk management evaluation stage of review.

Norway supported moving the listing forward, reminding the Committee that it has reached agreement on other substances when equally limited data was available.

Interim Chair Dawson led members through a review of text still in brackets within the draft risk profile. In addition to the concluding statements, there were three passages still under discussion: a paragraph on hazard assessment for the endpoint of concern, several paragraphs on human toxicity, and a synthesis of information on toxicity. Pinas explained that informal consultations on the text proposed by Norway to replace each of these passages had yielded consensus and she suggested incorporating these into the draft risk profile. The Committee agreed.

The POPRC then turned to the concluding statement. Noting that the evidence of adverse effects on the environment was conclusive, Canada suggested pointing to “potential” adverse effects on human health. Japan questioned the evidence of adverse effects on the environment and, with China, supported deferring the decision.

In response to a question on whether POPRC could decide global action is warranted on the basis of adverse effects on the environment and not also on human health, BRS Legal Officer Yvonne Ewang Sanvincenti clarified the Convention text provides for either or both to warrant global action.

China flagged that “significant” had been omitted from the proposed concluding statement. Members agreed that the finding of “significant adverse effects” was necessary to move forward, and added the phrase to the bracketed concluding statement.

China expressed concern that the Convention’s caution not to let absence of full scientific certainty preclude a proposal from moving forward was aimed at the parties, and not at the POPRC. In response to other members’ questions on this point, Sanvincenti confirmed that the pertinent paragraph in the Convention relates to the POPRC’s work.

Recognizing that members were unable to reach agreement on the concluding statement of the draft risk profile, Interim Chair Dawson directed the Committee to the text of the accompanying draft decision, noting it set out two possible ways forward: one that would adopt the risk profile and find that global action is warranted, the other deferring the issue to POPRC-17.

Japan asked that the decision reflect that it was reliable data on adverse effects that was lacking. Germany asked that, if the decision on the draft risk profile were deferred to POPRC-17, the decision text reflect the conclusive evidence available on persistence, bioaccumulation, and potential for long-range environmental transport. Austria supported this suggestion.

Ghana and Suriname raised concerns about whether additional evidence would be available in time for POPRC-17 to achieve a different outcome.

Noting the lack of consensus among members, Interim Chair Dawson explained he had no intention of bringing the issue to a vote and underscored that postponing the issue to POPRC-17 would still allow for a recommendation to list Dechlorane Plus to be taken up by COP11 in 2023.

Namibia underscored the importance of establishing an intersessional working group to review additional data and facilitate resolution of this issue at POPRC-17.

Underscoring the urgency of the issue since industry is phasing in Dechlorane Plus as an alternative to listed POPs, Norway noted POPRC-16’s online format had provided fewer opportunities for the exchanges and input from outside experts that might have brought about consensus. Should the issue be deferred, she suggested new decision text reflecting that the Committee was unable to reach agreement, especially since the majority of members supported moving the substance forward.

The Committee adopted the decision as amended during the plenary session.

Interim Chair Dawson suggested, and the Committee agreed, that the standard concluding statement in the risk profile would be kept in brackets. He noted the draft risk profile as agreed in plenary on Saturday would serve as the starting point for the intersessional working group.

The Committee agreed to establish an intersessional working group on Dechlorane Plus, to be chaired by Pinas, and the drafting would be done by Tolfsen.

Final Decision: In its final decision, the POPRC, *inter alia*:

- defers its decision on the draft risk profile for Dechlorane Plus to POPRC-17;
- notes that, while information on persistence, bioaccumulation, and the potential for long-range environmental transport was conclusive, the Committee was unable to reach agreement that the information on adverse effects was sufficient to reach a conclusion on the risk profile;
- establishes an intersessional working group to review and update the draft risk profile in accordance with Annex E; and

- invites parties and observers to submit additional information related to adverse effects of Dechlorane Plus to the Secretariat before 1 March 2021.

Consideration of draft risk profiles: Methoxychlor: On Tuesday, the Secretariat introduced the revised draft risk profile of methoxychlor, noting that it took into account issues raised at the POPRC-16 pre-meetings (UNEP/POPS/POPRC.16/CRP.1/Rev.1). Interim Chair Dawson explained that Mantoa Sekota (Lesotho) had chaired the Intersessional Working Group but was unable to attend POPRC-16, and Tamara Kukharchyk (Belarus) had agreed to chair in her stead.

Lucie Ribeiro (EU), drafter of the risk profile until her POPRC term ended in June 2020, introduced the revised document. She noted the substance has low vapor pressure, low water solubility, is highly adsorptive, strongly hydrophobic, and will sorb onto aerosols in air. She explained that no information was received on current production and use at the global scale and the substance has been banned in several countries for over 15 years. She said available monitoring data indicates that methoxychlor is widely distributed in the global environment. Ribeiro then summarized how methoxychlor satisfies each of the POPs characteristics of persistence, bioaccumulation, adverse effects, and potential for long-range environmental transport. She also outlined the incorporation of comments from the December 2020 pre-meetings and flagged the inclusion of some newly received information, including on adverse effects on zebrafish.

Valentina Bertato (Belgium), current drafter for the Intersessional Working Group, thanked Ribeiro for her work.

Austria said the risk profile demonstrated that Annex E criteria were satisfied. She warned that while the dossier implies methoxychlor is a dead chemical, minor use may be ongoing as she found a product for sale online listing methoxychlor as an ingredient.

Having run out of time to discuss this in plenary, Interim Chair Dawson tasked a contact group, chaired by Kukharchyk, to continue discussions on the draft risk profile.

On Tuesday afternoon, participants met in a contact group to review the draft risk profile and the text of the draft decision. Members and observers agreed to several textual amendments intended to clarify the wording of the draft risk profile. Several POPRC members expressed support for the draft decision, which would advance methoxychlor to the risk management evaluation stage of review.

On Wednesday, Kukharchyk reported to plenary that a revised draft risk profile and a draft decision were available (UNEP/POPS/POPRC.15/CRP.9 and CRP.10). On Saturday, she formally introduced the documents to plenary.

Pakistan, Suriname, Austria, Norway, Denmark, Thailand, Ghana, Costa Rica, Egypt, and several observers supported the draft decision and the risk profile.

Interim Chair Dawson asked if there were objections to adopting the decision, and seeing none, pronounced the decision adopted. The Committee also agreed to establish an intersessional working group on methoxychlor, to be chaired by Chalongsak Tangbanluekal (Thailand), and agreed that the drafting would be done by Bertato.

Final Decision: In its final decision (UNEP/POPS/POPRC.16/CRP.9), the POPRC, *inter alia*:

- adopts the risk profile for methoxychlor;
- agrees that methoxychlor is likely, as a result of its long-range environmental transport, to lead to significant adverse human

health and environmental effects such that global action is warranted;

- establishes an *ad hoc* intersessional working group to prepare a risk management evaluation that includes an analysis of possible control measures for methoxychlor in accordance with Annex F (Information on socio-economic considerations) to the Convention; and
- invites parties and observers to submit to the Secretariat the information specified in Annex F before 1 March 2021.

Consideration of a proposal for the inclusion of UV-328 in Annex A, B and/or C to the Convention: On Monday, the Secretariat introduced the listing proposal put forward by Switzerland (UNEP/POPS/POPRC.16/4) and the verification of whether the proposal contains the information specified in Annex D of the Convention (UNEP/POPS/POPRC.16/INF/6/Rev.1). She explained the proposal had been presented at the December pre-meetings and directed participants to a summary of comments and responses arising from these meetings (UNEP/POPS/POPRC.16/CRP.7).

Andreas Buser (Switzerland) introduced the proposal to list UV-328 in Annex A (Elimination) to the Convention. Explaining that UV-328 is a substituted phenolic benzotriazole broadly used as a UV absorber in a wide range of products, he outlined how the substance fulfills each of the Annex D criteria.

On persistence, he noted under a weight of evidence approach, UV-328 is highly persistent in the environment. On potential for bioaccumulation, he said UV-328 has a log Kow greater than five and pointed to study results showing bio-concentration factor (BCF) values greater than 5000. On evidence of adverse effects, he reported a rat feeding study showed effects on the liver and kidneys. He noted the levels at which effects occurred satisfied the criteria of significant toxicity to human health.

On the potential for long-range environmental transport, he said UV-328 is not expected to undergo atmospheric long-range transport in the gas phase based on its physicochemical properties. He explained that UV-328 will strongly partition into organic matter, including absorption into and adsorption onto aerosol particles in air. He explained UV-328 will undergo long-range transport with the particles once adsorbed. Relying on results from the Organisation for Economic Co-operation and Development (OECD) Potential for Long-Range Transport decision-support tool, he illustrated that UV-328 exhibits similar characteristics to known POPs. He also pointed to biomonitoring data of UV-328 detection in remote locations as evidence of long-range transport, while noting that monitoring data is still limited. In addition to the evidence of long-range transport with airborne particles, he detailed a hypothesis that transport via plastic debris in water is an additional pathway. Buser explained this hypothesis was supported by:

- the presence of UV-328 in plastic products that become waste in the environment;
- the transport of plastic debris to remote regions;
- the consumption of plastic debris by seabirds; and,
- seabirds' uptake of UV-328 from ingested plastic debris.

Responding to concerns about whether transport with plastic debris in water is covered under the Stockholm Convention, he explained that Annex D does not specify what is meant by transport via water. He argued that since marine plastic debris are no longer controlled by any human action, movement with plastic fully qualifies as environmental transport. He further reminded members that Article 8 (Listing of chemicals in Annexes A, B and

C) encourages POPRC to apply the Annex D screening criteria in "a flexible and transparent way."

China expressed interest in seeing further publications on the measurement of distribution of UV-328 in the air and asked how the Committee should link the long-range environmental transport criterion with microplastics, as this is not specified in the Convention. Buser responded that while there are few measurements of UV-328 in air, this limitation should not prevent UV-328 from progressing to the next stage of review. Buser agreed that while plastics are not mentioned in Annex D, the text does refer to air, migratory species, and water, and anything in water can be of natural or human origin.

Pakistan, Poland, Ghana, and Norway said that UV-328 meets the screening criteria and supported advancing the substance to the next stage of review. Austria concurred and called for more robust discussion at the next stage of evaluation of long-range transport and adverse effects. Agreeing that the Annex D screening criteria were met, Belgium noted that there would be additional evidence to consider at the risk profile stage given the rapid evolution of research on marine microplastics.

Japan called for discussing whether plastic debris is a major pathway for long-range transport at the next stage of review. Canada expressed interest in hearing detailed views of members and observers, particularly on long-range transport and the implications of plastic debris. Egypt called for further research on long-range transport of plastics and plastic fragments consumed by seabirds and further discussion of the need to include UV-328 in Annex D by states at the upcoming meeting of the COP.

Argentina said the evidence available does not support moving UV-328 to the next stage of review.

Noting that UV-328 has not been part of any big monitoring programmes and that more data is likely to be made available as a result of the POPRC's consideration of the substance, Norway said the existing evidence on long-range transport is convincing and expressed support for the Swiss proposal.

Calling for UV-328 to be advanced to the next stage of review, Belarus emphasized that plastics and microplastics are transported via water, aerosols, and animals, and that these transport paths are linked and inseparable.

China reminded the Committee of the provision under Article 3.3 of the Convention, which requires parties with regulatory and assessment schemes for new substances to take measures to regulate substances that exhibit POPs characteristics. Stressing the implications for parties of concluding the Annex D criteria have been satisfied, he called for keeping the review process scientific and transparent.

Noting the limited time available in plenary, Interim Chair Dawson briefly opened the floor to observer comments, explaining that observers would also have an opportunity to speak during the contact group deliberations. An observer from the US argued that the criteria for bioaccumulation, adverse effects, and potential for long-range transport have not been met. She said transport via marine plastic debris is highly speculative and not relevant to Annex D criteria. Raising a procedural point, an observer from the FluoroCouncil supported the concern raised by China and cautioned against setting a precedent of moving the review process forward without the Annex D criteria having been fully met.

The Committee agreed to establish a contact group on the issue, chaired by Sam Adu-Kumi (Ghana). The contact group met on Monday and Thursday.

The contact group deliberations opened with a presentation by an observer from the European Chemical Industry Council (CEFIC) pointing to weaknesses in the presentation of potential for long-range transport in the Swiss proposal. He explained UV-328 has been on the market for decades and has many applications, and thus it is difficult to differentiate between regional and long-range transport. He took specific issue with the inputs to the OECD decision-support model and pointed to the speculative nature of the marine plastic debris pathway, which he said is “far from being strongly supported by available evidence.”

Responding to the CEFIC presentation, Buser justified the input data for the OECD decision-support tool. Dismissing a question raised about the fraction of plastic debris settled in sediments, Buser also questioned the assumption that UV-328 is in equilibrium with its surrounding environment and confirmed that UV-328 has a half-life long enough to travel with plastic fragments to remote regions. He then gave the floor to Shige Takada, Tokyo University of Agriculture and Technology, to further respond to the CEFIC presentation. Takada pointed to studies in Tokyo Bay showing that microplastic between one and five mm in size is not effectively trapped in coastal sediment but is exported to the open ocean. He further pointed to the occurrence of millimeter-sized plastic in remote islands as evidence of the plastic debris’ long-range transport and argued for the environmental relevance of his study results.

Several government observers expressed confidence that UV-328 meets the Annex D screening criteria for persistence, bioaccumulation, and adverse effects, but questions remained about whether evaluation of potential for long-range environmental transport should include transport via plastics. Some supported expanding the interpretation of the criteria, noting that transport of chemicals via plastic debris is a cross-jurisdictional issue that cannot be controlled by human action, and this is comparable to transport of POPs via migratory species.

Observers from IPEN concurred, emphasizing that transportation via air, water, and migratory species should include plastic debris and this interpretation is compatible with the objective of the Convention. The Inuit Circumpolar Council underscored that the Arctic is a hemispheric sink for both POPs and microplastics, emphasizing that measurements of UV-328 in seabirds demonstrate long-range transport.

A government observer cautioned against changing the criteria of the Convention through “modernization of precedent,” emphasizing the only way to make such a change would be through a formal amendment to the Convention. Observers from industry raised several questions about the data available to demonstrate long-range transport, emphasizing that transport of plastics in the environment is complex and that extensive work will be needed to precisely identify pathways for long-range environmental transport. One expressed concern that considering transport of plastic debris as a mechanism for long-range transport could mean that any plastic additive would meet the Annex D criteria. A POPRC member reminded participants that a substance would still have to meet the other screening criteria (persistence, bioaccumulation, and adverse effects).

An observer from academia underscored that the plastic debris pathway would not apply to substances that do not meet the other Annex D criteria, as they would not survive transport to remote regions whether they were in air, water, or plastic. He noted while the Annex D long-range environmental transport criterion

is fulfilled by adsorption to aerosols in water or in air, the plastic debris pathway is a particularly effective mode of transport in this case.

Several participants sought clarifications on the presentations and underscored the importance of reaching a decision on the basis of scientific information.

In the contact group on Thursday, delegates examined the annex to the draft decision prepared by the Secretariat on the basis of Monday’s discussions. Each section of the annex briefly lays out key evidence being taken into account and ends with a judgment as to whether there is sufficient evidence that UV-328 satisfies each criterion.

Regarding the criteria of persistence, bioaccumulation, and adverse effects, interventions focused on clarifying the text to best reflect the available evidence. Participants agreed these criteria were satisfied.

Delegates expressed a wide range of views when they turned to whether the criterion of potential for long-range environmental transport had been met. The inclusion of a transport pathway via marine plastic debris proved especially divisive. Some emphasized that this pathway is already covered under the Convention and others said this opens up an entirely new set of issues that must be carefully researched and justified. One member underscored that moving UV-328 to the next stage of review will allow for more thorough investigation of these issues and, as has happened with past reviews of potential POPs, may even trigger additional research that can inform decision-making. Others, however, were hesitant to advance the substance without first gathering more data on this complex and consequential issue.

At the conclusion of the contact group session, members agreed to move deliberations to a drafting group to finalize the document. Participation in the drafting session, held on Friday, was limited to POPRC members and Switzerland, who had put forward the proposal.

On Saturday, the Secretariat introduced the draft decision document on UV-328 (UNEP/POPS/POPRC.16/CRP.13), noting two minor editorial amendments to the text. Contact and drafting group Chair Adu-Kumi outlined the content of the draft decision.

Noting discussions of potential long-range transport via plastic had revealed some uncertainty about how to apply this criterion when information is not clear cut, Interim Chair Dawson suggested establishing an *ad hoc* working group to develop guidance on this issue. He invited members and observers to join an informal discussion of this prospect during the break between plenaries, and said the proposal would be formally considered under the agenda item on the workplan for the next intersessional period.

Pakistan, Suriname, Germany, Egypt, Belgium, Poland, Japan, Denmark, Canada, Namibia, Thailand, Argentina, Norway, Poland, Costa Rica, Democratic Republic of the Congo, and Peru supported the draft decision.

Emphasizing that establishing long-range transport via movement of plastics in water is new to the Committee, Canada, supported by Argentina, underscored the importance of evaluating substances on a case-by-case basis. Namibia supported establishing a working group on guidance for dealing with plastics. China expressed agreement with the draft decision but cautioned against setting a precedent on microplastics with this decision, as evidence and knowledge of this field are still limited.

Interim Chair Dawson reminded participants that the Annex E stage of review is more rigorous than Annex D and involves a stringent test to demonstrate significant adverse effects such that global action is warranted.

IPEN and an observer from the Czech Republic expressed “full support” for the decision to advance UV-328 to the next stage of review.

An observer from the UK supported the decision to progress to Annex E and, emphasizing that the plastics pathway is precedent setting, reiterated the importance of evaluating chemicals on a case-by-case basis.

FluoroCouncil welcomed the creation of a working group that could better define and characterize how the long-range transport criterion should be considered in the future. American Chemistry Council, supported by CEFIC, expressed concern that UV-328 does not meet the criteria for long-range transport or adverse effects, and supported creation of the working group.

Switzerland thanked members and observers for their contributions and supported adopting the decision. An observer from Australia expressed appreciation for the robust discussions on long-range transport, reiterated the need for consideration of chemicals on a case-by-case basis, and welcomed establishment of the proposed working group.

An observer from the US expressed concern about establishing long-range transport via plastics and called for further consideration of how this pathway meets the criteria.

Interim Chair Dawson asked if there were objections to adopting the decision, and seeing none, pronounced the decision adopted. The Committee also agreed to establish an intersessional working group on UV-328, to be chaired by Sam Adu-Kumi (Ghana), and that the drafting would be done by Caren Rauert (Germany).

Final Decision: In its final decision (UNEP/POPS/POPRC.16/CRP.13), the POPRC, *inter alia*:

- expresses satisfaction that the screening criteria for UV-328 (CAS No. 25973-55-1) have been fulfilled, as set out in the evaluation contained in the annex to the decision;
- establishes an *ad hoc* intersessional working group to review the proposal further and to prepare a draft risk profile in accordance with Annex E to the Convention; and
- invites parties and observers to submit to the Secretariat the information specified in Annex E before 1 March 2021.

Review of information related to specific exemptions for decaBDE and SCCPs: On Tuesday, the Secretariat introduced this item, reminding participants that decabromodiphenyl ether (decaBDE) and short-chain chlorinated paraffins (SCCPs) were listed under Annex A of the Convention at COP8 in 2017 and that, in decisions SC-8/13 and SC-8/14, the COP tasked the POPRC with finalizing a report on information related to specific exemptions. Magdalena Frydrych (Poland), Chair of the Intersessional Working Group on decaBDE, introduced the group’s draft report (UNEP/POPS/POPRC.16/CRP.5), outlining revisions undertaken following the POPRC-16 pre-meetings (UNEP/POPS/POPRC.16/INF/7).

Reporting on the process for updating his country’s National Implementation Plan, Pakistan underscored the need to gather and share information on the separation and recycling or disposal of decaBDE in products, and especially in electronic equipment.

Austria underscored that use alone does not qualify a party for an exemption and supported deferring to the POPRC’s earlier decision and recommendation regarding the need for decaBDE

exemptions. Austria also drew attention to the ongoing revision of guidance on best available technologies and best environmental practices.

Alluding to the principle of common but differentiated responsibilities, China underscored the importance of exemptions for developing countries.

Canada proposed that parties be “urged” rather than “encouraged” to register for these specific exemptions in accordance with the Convention.

Norway supported retaining a recommendation to extend the work on this topic until COP11 in 2023. An observer from the UK supported continued evaluation and requested that his country be listed separately from all EU decisions as of 1 January 2021.

An observer from the US suggested text clarifying that, if parties want to continue using a substance, they must register that production and/or use, since it is that registration that triggers the five-year expiration date for the specific exemption, and that prior to that expiration parties must justify the continued need for the exemption or finally “turn off the tap for these chemicals.”

Several participants expressed surprise that only two parties had mentioned that they have articles with decaBDE still in use, especially given its prevalence among legacy car parts. Underscoring that the reports indicate a gap in information on decaBDE, Australia suggested parties be urged to determine and register their needs for specific exemptions.

IPEN supported treating exemptions added by the COP separately from those evaluated by the POPRC to ensure the integrity of the POPRC’s process and expressed concern about indications that decaBDE is being recycled even though there are no exemptions for recycling.

The Democratic Republic of the Congo underscored the need to run down existing stocks and force an end to requests for exemptions. Interim Chair Dawson informed the Committee that exemptions would expire at the end of 2023 unless a party requests an extension.

An observer from China indicated that data regarding decaBDE in China is incorrect and requested that it be deleted. Frydrych explained that the data had been submitted by a POPRC member and said she would try to find the best solution.

An observer from Sweden asked whether it was necessary to prepare two reports for the COP in 2023, noting that having two reports for PFOS had complicated parties’ work at a previous meeting. Norway requested clarification on this point. The Secretariat explained that the report should be prepared in a way that will assist the COP in its decision-making.

Noting general support for the draft report, Interim Chair Dawson suggested Frydrych prepare a revised version, taking into account comments received.

Cynthia Bainbridge (Canada), Chair of the Intersessional Working Group on SCCPs, presented the draft report on the review of information related to specific exemptions for SCCPs (UNEP/POPS/POPRC.16/CRP.4), outlining revisions undertaken following the POPRC-16 pre-meetings on the basis of the draft report they had prepared (UNEP/POPS/POPRC.16/INF/8). She noted that 20 parties, one non-state observer, and three NGOs contributed information for the report. She underscored that very limited information was received, only a few parties had updated their national implementation plans since SCCPs were listed in the Stockholm Convention, and that to date no parties had registered for exemptions. This could mean there is no further need for exemptions, there is a significant gap in information, or some parties are out of compliance.

Noting that SCCPs have been a particularly challenging substance for the POPRC in part because the definitions of the substance are diverse, Austria called for gathering information on SCCPs in other mixtures and supported recommending that specific exemptions are no longer needed.

China said that SCCPs are one of the most challenging substances POPRC has evaluated, emphasized that in China government representatives, industry, and researchers are working to separate SCCPs from medium- and long-chain chlorinated paraffins, and said that in time this and related work in other countries will yield the information necessary for the POPRC to make decisions.

Ghana questioned why no parties have registered for exemptions and suggested the POPRC consider investigating whether parties are using SCCPs.

Noting that SCCPs are a contaminant of medium- and long-chain chlorinated paraffins, Norway suggested that the POPRC recommend a limit value of trace contaminants.

The POPRC continued discussions on the issue in plenary on Wednesday.

An observer from the UK advised POPRC that his country is holding consultations to decide whether to propose listing medium-chained chlorinated paraffins in the Stockholm Convention.

Noting that no party has registered for specific exemptions for SCCPs, an observer speaking on behalf of IPEN and Alaska Community Action on Toxics suggested exemptions are no longer needed and urged parties to swiftly phase out all uses. She raised concerns about regrettable substitutions, notably as other chlorinated paraffins are being used as alternatives to SCCPs.

An observer from the US underscored the need for both reports to notify new parties of the need to request exemptions upon joining the Convention. An observer from China urged the POPRC to keep collecting relevant information, including relating to parties' adoption of the amendment listing SCCPs prior to COP11 in 2023.

Interim Chair Dawson proposed, and members agreed, that Frydrych and Bainbridge would oversee revisions of the respective draft reports. In plenary on Thursday, Frydrych and Bainbridge explained revised draft reports had been made available for review and they would continue consultations on their finalization.

On Saturday, Frydrych introduced the revised report on the review of information related to specific exemptions for decaBDE (UNEP/POPS/POPRC.16/CRP.5/Rev.2). Interim Chair Dawson invited comments from members and observers, and there were none.

Bainbridge introduced the revised report on the review of information related to specific exemptions for SCCPs (UNEP/POPS/POPRC.16/CRP.4/Rev.2). Interim Chair Dawson invited comments from members and observers, and there were none.

The Secretariat introduced the draft decision on this item (UNEP/POPS/POPRC.16/CRP.11). Argentina, Suriname, Pakistan, Thailand, Argentina, and Egypt expressed support for the decision. Interim Chair Dawson asked if there were any objections to adopting the decision; seeing none, he pronounced the decision adopted.

Final Decision: In its final decision (UNEP/POPS/POPRC.16/CRP.11), the POPRC, having completed the review of information related to specific exemptions for decaBDE and SCCPs requested by the COP, *inter alia*:

- submits the reports on the review of information to the COP for consideration at its tenth meeting; and
- requests the Secretariat to prepare, for consideration by the COP at its tenth meeting, a draft decision reflecting the recommendations of the Committee contained in the reports.

Evaluation and review of parties' progress towards eliminating BDEs contained in articles and their continued need for specific exemptions for BDEs:

On Thursday, the Secretariat introduced this agenda item, explaining that in 2013 parties agreed on a process to evaluate progress towards eliminating the brominated diphenyl ethers (BDEs) listed under the Convention in 2009: commercial octabromodiphenyl ether (c-octaBDE) and commercial pentabromodiphenyl ether (c-pentaBDE). She explained the Secretariat analyzed information submitted by parties and prepared a report on these BDEs. Following its discussion at the POPRC-16 pre-meetings, the Secretariat prepared a revised version of the draft report (UNEP/POPS/POPRC.16/INF/11/Rev.1).

Pakistan stressed the need to develop strategies for identifying products in articles in use and waste containing or contaminated with these BDEs. He stressed each party should take measures to prevent the recycling of these BDEs, especially for electronic waste.

Belarus commended the Secretariat's work on the report.

An observer from the US underscored it is not practicable to remove all BDEs from recycling streams.

The Secretariat explained they would take into account any further comments by the POPRC to finalize the report and submit it to COP10.

Indicative list of substances covered by the listing of PFOA, its salts, and PFOA-related compounds:

On Thursday, the Secretariat introduced the agenda item, explaining that parties tasked the Secretariat with periodically updating an indicative list of substances covered by the listing in 2019 of perfluorooctanoic acid (PFOA), its salts, and PFOA-related compounds. She introduced a revised draft updated indicative list that takes into account comments from the POPRC-16 pre-meetings (UNEP/POPS/POPRC.16/CRP.6).

Ghana stressed the importance of updating the list to aid customs and other compliance officers to comply with the Convention.

FluoroCouncil suggested calling it a "non-exhaustive" rather than an "indicative" list. He also sought clarification on when and how the list would be updated.

An observer from Japan, noting there are 176 compounds on the list, said more time was necessary to look at these substances' degradation data.

An observer from Switzerland underscored that additions to the list were drawn from a paper published in 2020 based on extensive scientific work.

China noted it was not possible to complete a thorough review of the recently proposed additions during POPRC-16.

An observer from the US supported periodic updating of the list but said parties should be encouraged to do their own evaluation of updates to the indicative list.

Ghana underscored the need to design a way forward to validate the list.

An observer from China underscored the importance of the list being provided in the six UN languages.

Interim Chair Dawson stressed the importance of the list in light of the Rotterdam Convention's Chemical Review Committee having forwarded their recommendation to list PFOA, its salts and PFOA-related compounds for consideration by Rotterdam Convention COP10, which is scheduled for July 2021.

An observer from Finland who drafted the PFOA list for the Chemical Review Committee noted the list generated for the Rotterdam Convention's purposes reflects those PFOA-related compounds that have been regulated nationally.

An observer from China warned continually updating the list would render it meaningless.

Emphasizing there is a subtle difference between the terms, Interim Chair Dawson noted that the original title of the document referred to a "non-exhaustive" list and asked if the POPRC could agree to revert to this terminology. Suriname supported using the term "non-exhaustive." Ghana requested an explanation of the previous change in terminology. Japan explained that his country had requested use of the word "indicative" as it could not accept "non-exhaustive" for its national regulation, and requested that the wording not be changed.

Interim Chair Dawson agreed that while the term "non-exhaustive" is more accurate, changing the phrasing would potentially go against the decision of parties in setting the mandate for the Secretariat to update the list. FluoroCouncil acknowledged this and proposed using the phrase "indicative but non-exhaustive." Japan said it could not accept a non-exhaustive list for its legislation.

Interim Chair Dawson suggested using the term "non-exhaustive" in the text instead of the title. FluoroCouncil supported this, emphasizing that it should be made clear somewhere in the document that this is a non-exhaustive list. Japan expressed a preference for keeping the term "indicative" in the text as well as in the title. Ghana, supported by Peru, suggested adding a footnote to clarify that "indicative" connotes "non-exhaustive," thus leaving the body of the text unchanged.

Interim Chair Dawson invited discussion of the American Chemistry Council's suggestions to include information related to applications, countries in which a substance is registered for use, and where a substance has been detected in the environment. He noted that the last point could entail substantial work.

FluoroCouncil acknowledged that gathering information on detection of substances in the environment could be cumbersome but said it would be helpful for parties to have some indication of the applications in which compounds are used. Namibia agreed having information about applications in specific countries would be useful.

Underscoring the difficulty of gathering information about applications, Norway said she would be hesitant to include this unless industry would be willing to provide this type of information. An observer from ETH Zürich concurred, emphasizing this requirement could make the process of adding more substances to this list more difficult. Norway added that the information on levels in the environment is not relevant for the list. Belgium proposed waiting for industry to produce a list of applications in industrial use and then considering whether updating the list accordingly is worthwhile.

Interim Chair Dawson asked for comments on the American Chemistry Council's proposal to add a definition of fluoropolymers, noting that the POPRC could not change the Annex A listing. The Secretariat clarified that the list cannot be updated during this meeting, and that the draft decision would

include a process during which the Committee would submit comments on the draft indicative list of substances as updated during POPRC-16.

Interim Chair Dawson proposed the Secretariat prepare a draft decision that would include a proposal for commenting and revision periods.

On Saturday, the Secretariat introduced a draft decision on the issue (UNEP/POPS/POPRC.16/CRP.12) and noted the indicative list had been updated to reflect comments received during the meeting (UNEP/POPS/POPRC.16/CRP.6/Rev.1) and would be published as UNEP/POPS/POPRC.16/INF/12/Rev.1. She explained the decision provides for two rounds of comments by members and observers to assist the Secretariat in finalizing the list, which is to be posted on the Convention website in advance of COP10 in July 2021.

China expressed concern about the many substances that had been added to the indicative list since the POPRC-16 pre-meetings. He explained the short timeframe of two comment periods prior to COP10 would not allow a thorough consideration of each proposed addition.

Canada cautioned that any revisions must be in line with the Convention. Regarding a paragraph in the draft decision inviting parties and observers to submit information on applications and registration of use for the substance, Canada cautioned this would be too onerous and was not fully discussed by the Committee and proposed removing the paragraph. Argentina, New Zealand, and Belgium supported this deletion.

Germany said it would be useful to have a process to update the list given there are so many PFOA-related substances. Pakistan supported the draft decision.

An observer from China underscored the importance of providing the list in the six UN languages. Noting the suggested additions to the list, put forward by Switzerland, were so numerous so as to preclude a careful review in an already tight time schedule, he opposed their inclusion in the document and subsequent consultations.

An observer from Switzerland clarified that their submissions were based on a peer-reviewed paper only published recently, and that this paper has extensive supplemental information available online for members and parties to review.

China warned against rushing review of any additions to the list.

Following several clarifications of the Secretariat's mandate for updating the indicative list and the process that would be followed in taking comments, members agreed to adopt the decision with the understanding that the original document circulated by the Secretariat would serve as the foundation for the consultative process (UNEP/POPS/POPRC.16/INF/12).

Final Decision: In its final decision (UNEP/POPS/POPRC.16/CRP.12, as amended orally), the POPRC, *inter alia*:

- invites members, parties, and observers to submit, by 28 February 2021, comments on the revised draft indicative list of substances;
- requests the Secretariat to prepare, by 31 March 2021, a further revised draft indicative list of substances covered by the listing of PFOA, its salts and PFOA-related compounds, taking into account the comments submitted;
- invites members, parties, and observers to submit further comments on the revised draft indicative list by 30 April 2021;
- requests the Secretariat, in consultation with the Chair and the Vice-Chair of the POPRC to update the indicative list of substances covered by the listing of PFOA, its salts and

PFOA-related compounds, taking into account the comments submitted, and to make it available on the Convention website in advance of COP10; and,

- recommends that the COP consider inviting parties and observers to submit to the Secretariat any further information regarding the identification of substances covered by the listing of PFOA, its salts and PFOA-related compounds so the information can be considered when the list is further updated.

Report on Activities to Support Effective Participation in the Work of the Committee

On Thursday, the Secretariat reported that it has organized and is planning to organize additional workshops to support participation in both the POPRC and the Rotterdam Convention Chemical Review Committee (UNEP/POPS/POPRC.16/INF/13). She highlighted a recent workshop in Nigeria that aimed to support science-based decision-making in implementation of the Basel, Rotterdam, and Stockholm Conventions, and noted that the work of the POPRC was cited as a prime example of effective interaction among science, policy, and industry. Interim Chair Dawson invited participants to provide feedback and express their needs to the Secretariat.

Pakistan expressed appreciation for the Secretariat's organization of webinars, orientation workshops, online briefings, and awareness-raising materials on chemicals that are under review or newly listed and suggested that capacity-building and training activities could be enhanced.

Ghana encouraged the Secretariat to organize a virtual workshop to support participation in POPRC, noting that many people can participate when workshops are online.

The Committee agreed to take note of the information provided.

Workplan for the Intersessional Period

On Saturday, the Secretariat introduced the document outlining a proposed plan for intersessional work (UNEP/POPS/POPRC.16/8), noting that this period is shorter this year due to the rescheduling of POPRC-16.

An observer from China expressed concern about the intensive timeline and asked if parties could be given more time to collect and submit comments. The Committee considered possible adjustments to the plan, were unable to identify deadlines that could be moved, and concluded that drafters should work in a "flexible and integrative manner." Norway supported this, noting that drafters are always flexible in taking comments received after deadlines.

An observer from Sweden asked if it was possible that the September 2021 meeting would be rescheduled due to the COVID-19 pandemic and when such a decision might be taken. Interim Chair Dawson acknowledged the uncertainty and said that a decision would have to be made in April about whether to have POPRC-17 in person or online. The Secretariat reiterated that the Committee is preparing for a face-to-face meeting in Rome in September.

Pakistan stressed the importance of meeting face-to-face, noting that the Committee had experienced many challenges related to connectivity, and requested that any decision to move the meeting online be delayed as long as possible. Ecuador supported holding the meeting in September, but noted that some people may not be able to be vaccinated in time to attend in person.

The Committee adopted the workplan as presented in the document.

The Committee also agreed to establish an intersessional working group on long-range transport. Noting the high level of interest in this issue, Interim Chair Dawson said that a Chair and Drafter would be identified after POPRC-16, in consultation with POPRC members.

Venue and Date of POPRC-17

On Saturday, the Secretariat announced that the seventeenth meeting of the POPRC is scheduled for 27 September to 1 October 2021 at the headquarters of the Food and Agriculture Organization of the United Nations in Rome, Italy. She noted the meeting would be held back-to-back with the seventeenth meeting of the Rotterdam Convention Chemical Review Committee, which is scheduled to be held the preceding week. She noted that the length of the meeting could be adjusted, depending on the volume of work.

Participants took note of the information.

Adoption of the Report and Closure of the Meeting

On Saturday, the Committee adopted the report of its meeting (UNEP/POPS/POPRC.16/L.1) with minor editorial amendments.

Interim Chair Dawson commended participants for their "fortitude, hard work and dedication," and expressed particular gratitude to the Secretariat, IT specialists, and Interprefy staff who made the virtual meeting work.

BRS Executive Secretary Rolph Payet thanked all participants and lauded Interim Chair Dawson for his "sterling chairmanship" in difficult circumstances.

Interim Chair Dawson closed the meeting at 7:02 pm (UTC+1).

A Brief Analysis of POPRC-16

"Good evening! Good afternoon! Good morning!" So went the cheerful daily greeting from the Persistent Organic Pollutants Review Committee's (POPRC) Interim Chair, Peter Dawson, as the POPRC convened for its 16th meeting in most unusual circumstances. The Committee, originally scheduled to meet in Rome in September 2020, postponed its annual meeting to January and ultimately met online due to the COVID-19 pandemic. Committee members and observers from governments, civil society, and industry logged on from around the world, with many joining during decidedly non-standard working hours.

With three potential POPs under review and substantial technical work related to implementation of its past recommendations, the POPRC maintained its full pre-pandemic agenda in hopes of avoiding delaying action on issues that pose risks to human health and/or the environment.

This brief analysis considers the key outcomes of this meeting and the impact of the virtual format on the POPRC's work.

Twenty Years On: Two Tests of the Convention's Long-Term Relevance

The Stockholm Convention was designed to be an evolving treaty that could address problems already well understood when the Convention was adopted in 2001, as well as new issues that drafters anticipated would be identified in coming years. Accordingly, the types of pollutants that come before the POPRC have changed over the last two decades, with two broad shifts: first from "dead" chemicals—obsolete substances that are no longer produced or used—to "live" substances that are still of

significant economic and practical importance; and second, from pesticides to more technically-complex industrial chemicals. These industrial chemicals are often newer substances, and regulatory authorities and scientists have struggled to keep up with their proliferation. As a result, there are limited monitoring data or scientific studies providing the reliable information the POPRC needs to evaluate the risks they might pose to human health and/or the environment.

Furthermore, some newly nominated substances are testing the limits of the Convention's ability to respond to other environmental problems, such as climate change and plastic wastes, that are exacerbating the global impact of chemical pollution. The Swiss nomination to list UV-328 illuminates this challenge. The proposal hypothesizes that a key mechanism by which this industrial chemical spreads globally is via marine plastic debris. Plastic waste of various sizes can travel around the world on water currents, and may also be ingested by seabirds and other migratory species. UV-328 is itself a plastic stabilizer and so some of this plastic debris has contained the substance since its fabrication, but once leached out into the environment UV-328 may also be adsorbed onto yet other plastic fragments. The listing proposal argued that such fragments are being transported long distances and seabirds ingesting the plastic are particularly vulnerable to the adsorbed UV-328. In fact, UV-328 has been detected in their preen oil (the oil they produce that maintains their feathers).

This hypothesized pathway presented the POPRC with a crucial question: does transport via plastics meet the legal and technical definition of long-range environmental transport? Some members and observers cautioned that if this pathway were to be recognized as satisfying the criterion for long-range environmental transport, a slew of substances that do not otherwise meet the POPs criteria could be proposed for addition to the Convention. Others contended that recognizing this pathway for long-range environmental transport is in line with the Convention's objective and does not negate the importance of the other screening criteria that together make up the POPs characteristics (i.e., persistence, bioaccumulation, and adverse effects).

The flame retardant Dechlorane Plus also represented a key challenge for the POPRC, with some members and observers contending that the available information on adverse effects, especially on human health, was insufficient for POPRC to reach a conclusion on whether the substance warrants global action. This illuminated several far-reaching questions that are also likely to arise in relation to other relatively new substances: Can high-dose lab studies yield conclusions on effects at environmentally-relevant exposure levels? Are certain mechanisms for potential adverse effects, such as potential endocrine disruption, of sufficient concern to warrant greater precaution? Those in favor of concluding that global action was warranted by available data underscored that uses and emissions of this already commonly-used substance will soon skyrocket as industries turn to it as an alternative for POPs recently listed in the Convention. They stressed that few monitoring programmes test for Dechlorane Plus and that only a few studies on the substance's effects have even been undertaken, and that such data gaps should not be interpreted as evidence of no adverse effects. POPRC-16 revealed a stark division in members' understanding of the balance between scientific certainty and precautionary action to protect human health and the environment. As the POPRC deals with a

growing number of newer chemicals, the Committee will have to decide how and when taking precautionary action in the absence of full scientific certainty is necessary.

Discussions of both UV-328 and Dechlorane Plus also highlighted an enduring tension in the POPRC's work. At the first stage of review, the POPRC simply has to determine whether there is any evidence that a substance nominated for listing is likely to possess each of the POPs characteristics (the Annex D screening criteria). If evidence indicates that a substance possesses these characteristics, the Committee will advance the substance to the next stage of review, at which point it will carefully scrutinize available evidence to determine whether global action is warranted. As such, POPRC members and observers frequently argue that a substance should pass the Annex D stage even if evidence is limited, since the second stage of review is designed to rigorously assess the quality of evidence. However, over the years some members and observers have expressed frustration that once a substance passes the Annex D stage, eventual listing is virtually guaranteed, even if reaching that point takes many years. They cite short-chain chlorinated paraffins (SCCPs) as an extreme example of this: the substance was under review for ten years before the Committee could reach consensus to recommend listing this substance in Annex A of the Stockholm Convention. The Committee has yet to determine that a nominated substance does not warrant global action, much to the dismay of some stakeholders.

Virtual Collaboration: A Vacation, not a Lifestyle

While meeting arrangements are often only noticed if there are problems, 10 months into the COVID-19 pandemic, POPRC-16 serves as a useful case study of the strengths and limitations of virtual collaboration. Instead of its usual six hours a day for plenary plus time for contact groups, POPRC-16 was limited to meeting for two hours in plenary and two hours in contact groups each day.

The Committee's ambitious agenda ceded nothing to the coronavirus; members and observers tackled the same agenda that was circulated before the pandemic struck. This was possible in part due to the Secretariat's efforts to facilitate extensive preparation of members and observers, including three days of online pre-meetings held in December 2020. The Interim POPRC Chair, intersessional working group chairs, drafters, and Secretariat staff put in extensive work between 4 December 2020 and 11 January 2021 to gather additional information, update documents, and otherwise enable the Committee to build on those pre-meetings during POPRC-16. The success of this meeting is a credit to the extraordinary time and effort put in to keep the POPRC's work on track.

The technology used to support this meeting also enabled more effective collaboration than had been available for many meetings held early in the pandemic. The user-friendly platform supported interpretation of plenary sessions in the six UN languages and allowed participants to be on camera when they made interventions, with their names and affiliations clearly displayed. These features helped to personalize the meeting, facilitate interaction among participants, and create a semblance of the camaraderie that has long been a characteristic of the POPRC. The Secretariat also went to great lengths to provide personalized support to participants, using a variety of back-channels to guide them through the complexities of a virtual meeting.

Despite advances in technology and the heroic efforts of the Secretariat and information technology experts, slow or patchy internet connections limited the contributions of many participants. Some were unable to turn their cameras on at all during the meeting, and discussions were frequently marred by echoes, delays, or dropped connections. Some Committee members were forced to submit their comments by email or text message to the Secretariat, a situation that significantly hampered the free flow of discussion that is vital to the POPRC's work.

The online format also limited opportunities for the informal exchanges that commonly help participants reach shared understandings of problems and potential solutions. In the POPRC, such discussions are often highly technical and discipline-specific, giving scientists with different areas of expertise the chance to share knowledge and learn from each other. Such opportunities are central to the work of science advisory bodies and have played a significant role in the POPRC's work over the years. Their absence was evident throughout the week, but especially as POPRC members struggled to find a way forward on Dechlorane Plus on the final day. Once it became clear the POPRC would be deferring its decision, the amount of time required to craft consensus language reflecting the situation far exceeded what potentially could have been resolved at a brief in-person meeting by a small huddle at the back of the room.

The pandemic has thrown inequities into sharp relief, and by the conclusion of the meeting, the limitations of this format were clear. One member stressed the importance of meeting face-to-face for the next meeting, citing the issues many faced in connecting and fully participating in POPRC-16. However, as the POPRC adopted a workplan that presumes an in-person COP in July 2021 and an in-person POPRC in September 2021, many also noted that uneven vaccine distribution could severely constrain opportunities for travel in the short and medium term, implying that virtual meetings might continue to be necessary.

Looking Ahead to POPRC-17

POPRC-16 set out plans for substantial intersessional work. In addition to continuing work on the three chemicals that are currently under review (the pesticide methoxychlor and the industrial chemicals UV-328 and Dechlorane Plus), the Committee also established a new working group to develop guidance on application of criteria related to long-range transport. This last group attracted a high level of interest from members and observers, in large part due to its focus on the links between POPs and plastic pollution.

With the pandemic worsening in many parts of the world, uncertainties remain about how participants will collaborate in coming months, and how much work can be done at the country level. This meeting illustrated the extent to which the POPRC depends on its members putting in the hours to fulfill their mandate throughout the year, on top of their other commitments. The toll the pandemic has taken on this close-knit community of experts was also never far from discussions, whether in one expert's COVID-related cough or another reporting the loss of a colleague to the virus. Interim Chair Dawson echoed the sentiments of many as he closed the meeting with an admonition to all participants to stay safe.

Upcoming Meetings

Fifth Session of the UN Environment Assembly (UNEA-5) Part I: The fifth session of UNEA is expected to adopt a "two-step" approach that will convene virtually in February 2021 with a revised and streamlined agenda. This session will be complemented by a second component in the form of a resumed UNEA-5 to be held in person in Nairobi in February 2022 in a format to be defined and agreed upon. **dates:** 22-23 February 2021 **location:** virtual **www:** <http://web.unep.org/environmentassembly/>

Resumed Meeting of Basel Convention OEWG 12: The Open-ended Working Group is tentatively scheduled to resume its twelfth session face-to-face to conclude negotiations and forward its recommendation to the COP. **dates:** June 2021 (TBC) **location:** Nairobi, Kenya **www:** <http://www.basel.int>

Fifth Meeting of the International Conference on Chemicals Management (ICCM5): The top decision-making body of the Strategic Approach to International Chemicals Management (SAICM) will consider a possible post-2020 platform for addressing chemicals and waste. **dates:** 5-9 July 2021 **location:** Bonn, Germany **www:** <http://www.saicm.org>

Basel Convention COP15, Rotterdam Convention COP10 and Stockholm Convention COP10: The 15th meeting of the COP to the Basel Convention, the 10th meeting of the COP to the Rotterdam Convention and the 10th meeting of the COP to the Stockholm Convention will convene back-to-back. The meetings will include joint sessions covering matters of relevance to at least two conventions, separate sessions of the meetings of the each of the three COPs, and a high-level segment. The theme is "Global Agreements for a Healthy Planet: Sound management of chemicals and waste." **dates:** 19-30 July 2021 **location:** Geneva, Switzerland **www:** <http://www.brsmeas.org/>

Seventeenth Meeting of the Chemical Review Committee: CRC-17 will review notifications of final regulatory action for possible listing in Annex III of the Rotterdam Convention. **dates:** 20-24 September 2021 **location:** Rome, Italy **www:** <http://www.pic.int>

Seventeenth Meeting of the Persistent Organic Pollutants Review Committee: POPRC-17 will consider the draft risk profile for UV-328 and the draft risk management evaluation for methoxychlor. POPRC will also resume consideration of the draft risk profile on Dechlorane Plus. **dates:** 27 September - 1 October 2021 **location:** Rome, Italy **www:** <http://www.pops.int>

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

Glossary

BDEs	Brominated diphenyl ethers
BRS	Basel, Rotterdam, and Stockholm Conventions
CEFIC	European Chemical Industry Council
COP	Conference of the Parties
decaBDE	Decabromodiphenyl ether
IPEN	International Pollutants Elimination Network
OECD	Organisation for Economic Co-operation and Development
PFOA	Perfluorooctanoic acid
POPs	Persistent organic pollutants
POPRC	POPs Review Committee
SCCPs	Short-chain chlorinated paraffins