

## Summary of the 15th Meeting of the Persistent Organic Pollutants Review Committee of the Stockholm Convention on Persistent Organic Pollutants: 1-4 October 2019

During its fifteenth meeting, the Persistent Organic Pollutants Review Committee (POPRC) to the Stockholm Convention on Persistent Organic Pollutants (POPs) carried out a range of technical work necessary to support the Convention's objective to protect human health and the environment from POPs. The group of 31 government-designated experts (30 of whom were present) reviewed three chemicals nominated for listing in Annexes A, B, and/or C to the Convention: the insecticide methoxychlor, the industrial chemical Dechlorane Plus (and its syn-isomer and anti-isomer), and perfluorohexane sulfonic acid (PFHxS), its salts, and related compounds.

The POPRC agreed that the first two chemicals, which were in the first phase of the POPRC's three-stage review process, satisfy the screening criteria (persistence, bioaccumulation, potential for long-range environmental transport, and adverse effects). Both methoxychlor and Dechlorane Plus will move to the second stage of the POPRC's review process, in which the Committee will evaluate a draft risk profile to determine whether the substances meet the specific thresholds necessary for categorization as POPs. The Committee also concluded its work on PFHxS, deciding to recommend that the Conference of the Parties consider listing this substance in Annex A (elimination) with no exemptions.

The agenda for POPRC-15 was relatively light in comparison with previous years, with two chemicals at the nomination stage and one at the final stage of review, and the Committee made swift progress during this four-day meeting. In the case of PFHxS, several participants credited the quality of work completed intersessionally to prepare the draft risk management evaluation for the Committee's review. Discussions of Dechlorane Plus were thornier, and highlighted a range of data gaps that will need to be addressed intersessionally in order to facilitate the Committee's decision-making at the next stage of review.

POPRC-15 took place from 1-4 October 2019 in Rome, Italy. Over 100 participants attended, including POPRC members and observers from parties, governments, industry, and civil society.

### 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 (LRET) of these substances to regions where they have never been used or produced, and 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 183 parties. The Convention can list chemicals in three annexes: Annex A contains chemicals to be eliminated; Annex B contains

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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 (COP-1), 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 LRET, 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 LRET, 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 POPs recommended by the POPRC.

**POPRC-1 to 3:** The first, second, and third meetings of the POPRC met between 2005 and 2007. During this time, the POPRC recommended that the COP consider listing the following POPs under Annexes A, B, and/or C: lindane; chlordecone; hexabromobiphenyl (HBB); commercial pentabromodiphenyl ether (c-pentaBDE); 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 12th meeting.

**POPRC-4:** This meeting convened from 13-17 October 2008. The Committee approved the risk management evaluations of four chemicals and recommended that the COP consider listing under Annexes A, B, and/or C: commercial octabromodiphenyl ether (c-octaBDE), pentachlorobenzene (PeCB), alpha and beta hexachlorocyclohexane. POPRC-4 also 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 COP-7 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 meet 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 PFHxS, its salts and PFHxS-related compounds.

### POPRC-15 Report

The fifteenth meeting of the Persistent Organic Pollutants Review Committee (POPRC-15) opened on Tuesday, 1 October 2019 in Rome, Italy at the headquarters of the Food and Agriculture Organization of the United Nations (FAO).

POPRC Chair Estefânia Gastaldello Moreira (Brazil) welcomed the 14 newly appointed members, who will officially join the Committee in May 2020, as observers at POPRC-15. Rolph Payet, Executive Secretary of the Basel, Rotterdam, and Stockholm Conventions, lauded the POPRC's work to support the listing of 18 new chemicals in the annexes to the Stockholm Convention since its entry into force in 2004, bringing the total number of listed POPs to 30. He emphasized the importance of the Committee's scientific review process and called for continued engagement of all stakeholders to protect human health and the environment.

The POPRC adopted the provisional agenda (UNEP/POPS/POPRC.15/1) without amendment and agreed to the organization of work (UNEP/POPS/POPRC.15/INF/2).

### Rotation of the Membership

On Tuesday morning, the Secretariat introduced the document on the rotation of membership (UNEP/POPS/POPRC.15/INF/3), recalling that at COP-9 parties had confirmed several appointments to the POPRC, including 14 members with terms from 2020-2024. He explained that these 14 experts were invited to participate in POPRC-15 as observers. Encouraging new experts to participate, Chair Moreira thanked Germany for supporting an orientation session that was to be held later that day.

The Secretariat also noted that POPRC-15 would be the last meeting for POPRC Chair Moreira as her term of service ends in May 2020. He explained that according to Decision IX/10, Committee members are required to identify an Interim Chair to serve at POPRC-16 and that parties will consider the election of a new POPRC Chair at COP-10 in 2021.

On Friday, the POPRC selected Peter Dawson (New Zealand) as the as the Interim Chair of POPRC-16.

### Technical Work

**Consideration of the draft risk management evaluation on PFHxS, its salts and related compounds:** On Tuesday, the Secretariat introduced the draft risk management evaluation (RME) on perfluorohexane sulfonic acid (PFHxS, UNEP/POPS/POPRC.15/2), as well as the document outlining comments submitted intersessionally and the working group's responses (UNEP/POPS/POPRC.15/INF/5).

Peter Dawson, Chair of the intersessional working group, presented the draft RME, noting that it had gone through three rounds of comments. He explained that the draft RME focused on PFHxS (CAS No. 355-46-4), and that, in accordance with decision POPRC-13/3, the chemical identity includes any substance that contains the chemical moiety  $C_6F_{13}SO_2-$  as one of its structural elements and potentially degrades to PFHxS. He

noted releases to the environment arise throughout its lifecycle, but especially from the service-life of consumer products treated with PFHxS and waste disposal. He also explained that PFHxS is widely present in the environment, is one of the most frequently detected per- and polyfluoroalkyl substances (PFAS), and is produced both intentionally and unintentionally. Outlining challenges, he underscored the lack of information available on production and use of PFHxS, as well as on the broader category of PFAS in consumer products, and emphasized the importance of avoiding regrettable substitutions. He noted that the group had not received requests for exemptions or information on uses for which no alternatives were available. He reported that the draft RME recommended listing in Annex A without exemptions.

China raised concerns about the sufficiency of information related to increasing concentrations in remote sites and queried the comparability of different data points related to global emissions.

Citing possible unintentional production of PFHxS, Indonesia suggested discussing a potential Annex C listing in a contact group. Canada called for further discussion of ways to address unintentional production. The Netherlands called for more information on the uses of PFHxS and asked whether the drafters of the RME think PFHxS has been added to firefighting foams intentionally or whether it is an unintentional trace contaminant.

Noting that low intersessional participation from stakeholders made it difficult to form a clear picture of production and use of PFHxS, Belarus called for further discussion of alternatives to known uses. Luxembourg noted that confidentiality of business information had hampered the evaluation of alternatives and estimation of socio-economic impacts of listing.

Peru underscored the need for reference values to help countries determine whether potentially-contaminated sites warrant further investigation.

Citing increasing PFAS levels in pregnant women in the Arctic, International POPs Elimination Network (IPEN) supported a recommendation to list PFHxS in Annex A without exemptions and called for the POPRC to follow up on its recommendation that regrettable PFAS substitutes be avoided.

An observer from the US called for inclusion of a clearer cost-benefit analysis in the draft RME, queried the use of the phrase "critical uses," emphasizing that POPRC should not designate uses as critical, and highlighted its domestic launch of a PFAS action plan.

An observer from Russia lamented the lack of a standardized analytical method for identifying PFHxS in wastes.

Inuit Circumpolar Council underscored that the Inuit are disproportionately affected by PFAS, which are increasingly found in the Arctic environment, and supported listing PFHxS in Annex A without exemptions.

An observer from China queried statistics in the draft RME related to concentrations of PFHxS in firefighting foam in his country and called for a more comprehensive list of compounds, including CAS numbers, to accompany any listing of PFHxS.

An observer from Australia noted references to Australian information in the draft RME, especially on guidance values and costs related to contamination, and called for further discussion of this information in the contact group.

An observer from the Republic of Korea underlined that some changes to the text would be necessary for clarity.



National Toxics Network drew attention to Australian communities contaminated by PFHxS and called for action to be taken. The United Firefighters Union of Australia, highlighting their interest in safety, called for listing PFHxS in Annex A without exemptions.

An observer from Argentina underlined that countries that are not producers of PFHxS are concerned by the importation of products containing PFHxS and, with an observer from the United Kingdom, called for more discussion on unintentional production.

eSwatini also underscored difficulties related to detection of PFHxS and suggested the Committee consider information from developing countries.

An observer from Japan highlighted that his country is currently drafting legislation on PFHxS and called for clarification on the identification of its related compounds. Luxembourg said it is worth considering the scope of the RME.

A contact group, chaired by Dawson, was established to further discuss, *inter alia*, the chemical identity, purpose, uses, and alternatives to enable further revision of the draft RME. The contact group met on Tuesday and Wednesday.

On Thursday morning, POPRC Chair Moreira opened plenary discussions on the revised draft risk management evaluation (UNEP/POPS/POPRC.15/CRP.3) and its accompanying draft decision (UNEP/POPS/POPRC.15/CRP.2) arising from the contact group's deliberations.

Japan underscored the regulatory need for CAS numbers and, supported by Luxembourg, Canada, and China, asked to append a list of known PFHxS-related substances with CAS numbers, stressing this list should be a living document and open to input from industry to identify additional PFHxS-related substances. China further clarified that CAS numbers help avoid confusion when decision documents have undergone translation. Ghana noted that the document could use the Organisation for Economic Co-operation and Development's (OECD) list of 147 PFHxS-related substances as a starting point.

The Secretariat drew attention to the process used to address a similar need for perfluorooctanoic acid (PFOA)-related substances, explaining that Decision IX/13, Section III, requests the Secretariat to collect the non-exhaustive list of CAS numbers, make it available on the Stockholm Convention website, and update it periodically. She further recalled that information that had been submitted along with the PFHxS risk profile (UNEP/POPS/POPRC.14/INF/4) could serve as a starting point, should parties decide to follow a similar process. She noted that the POPRC might recommend that the COP take such a decision, or that the Secretariat could craft text to recommend using the approach taken for PFOA with respect to the identification of a non-exhaustive list of CAS numbers for PFHxS-related substances.

Morocco underscored that most developing countries do not produce PFHxS, nor are they importing it as a stand-alone substance; rather, they are dealing with imported goods containing PFHxS. She explained that instead of CAS numbers, developing countries use the Harmonized System for the classification of products.

The United Firefighters Union of Australia endorsed that the recommendation was to list PFHxS in Annex A without exemptions. Noting that there are another 4720 PFAS, he encouraged members to include a statement that PFHxS should

not be replaced by other PFAS and also cautioned against PFAS being "dumped" on developing countries. An observer from China said that CAS numbers alone are not sufficient for countries' legislatures to implement parties' commitments arising from the Convention, stressing the need for additional scientific information on PFHxS-related substances and substances that might turn into PFHxS.

On a paragraph regarding PFHxS' unintentional production as a by-product of the electrochemical fluorination (ECF) process for PFOSE, Luxembourg asked to include a mention that unintentional production has been cleaned up. Canada praised the contact group discussions, especially on the risks of unintentional presence, and commended the solution of stating that, subject to note (i) of Annex A, the presence of PFHxS, its salts and PFHxS-related compounds in other substances can only occur as an unintentional trace contaminant.

On the chemical identity, Austria noted that she had brought attention to the group that the EU has a broader definition of PFHxS, and that this was not taken up in the draft. An observer from Sweden also queried why this information was not taken on board. Luxembourg further explained that the argument put forward by the EU was that removing the oxygen in the structural formula would broaden the chemical's scope and cover theoretical PFHxS-related substances, even though no such substances have been identified at the moment. Contact group Chair Dawson reported that the contact group did not have much of a discussion on the EU's proposal to broaden the scope. He further explained that the intersessional working group had not seen sufficient scientific merit behind the proposal and furthermore was unsure whether the scope of the chemical's identity could be broadened after the risk profile stage.

On the draft decision on PFHxS, Canada supported including a paragraph in the chapeau of the decision recognizing the challenge of not transitioning to other PFAS substitutes, recalling that POPRC-14's decision on PFOA, its salts and related compounds had a sentence recognizing that a transition to the use of short-chain PFAS for dispersive applications such as firefighting foams is not a suitable option from an environmental and human health point of view and that some time may be needed for a transition to alternatives without PFAS.

Members agreed that a drafting group, chaired by Peter Dawson, would revise the documents based on the discussion in plenary.

On Friday, Dawson updated the plenary on the changes agreed by the drafting group for the revised draft RME (UNEP/POPS/POPRC.15/CRP.3/Rev.1). He noted that some references were clarified and that the drafting group decided to include a paragraph to better identify the list of related compounds.

The POPRC decided to adopt the RME of PFHxS (UNEP/POPS/POPRC.15/CRP.3/Rev.1) and recommend this industrial chemical for listing in Annex A to the Stockholm Convention with no exemptions.

**Final Decision:** In its decision on PFHxS, its salts and related compounds (UNEP/POPS/POPRC.15/CRP.2/Rev.1), the POPRC, *inter alia*:

- adopts the RME for PFHxS, its salts and PFHxS-related compounds;

- decides to recommend to the COP that it consider listing PFHxS, its salts and PFHxS-related compounds in Annex A to the Convention without specific exemptions; and
- recommends to the COP, should it decide to list PFHxS, its salts and PFHxS-related compounds, that it establish a process for the identification of substances covered by such a listing, taking into account the process established for PFOA.

**Consideration of chemicals proposed for listing in Annexes A, B and/or C to the Convention: Methoxychlor:** On Tuesday morning, the Secretariat introduced the proposal by the European Union to list methoxychlor under Annex A of the Convention (UNEP/POPS/POPRC.15/4) and the Secretariat's note on whether the proposal contains the information specified in Annex D (UNEP/POPS/POPRC.15/INF/Rev.1).

Lucie Ribeiro (Austria) introduced the EU's proposal, explaining that methoxychlor is an organochlorine insecticide that has been used as a DDT replacement in agricultural and veterinary practices. She said the substance is one of the chemicals identified for priority action under the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), and is also listed as a persistent, bioaccumulative, and toxic chemical under the US Environmental Protection Agency's Toxics Release Inventory programme. She reported on information available regarding methoxychlor's persistence, bioaccumulation, potential for LRET, and adverse effects on human health and/or the environment, and said that the substance meets each of the Annex D screening criteria.

Belarus supported moving methoxychlor to the risk profile stage of the POPRC's review. Switzerland asked for additional information on isomers. The Netherlands raised questions regarding low levels of the substance in monitoring data and their implications regarding persistence and LRET.

Underscoring the importance of paragraph 2 of Annex D, which calls on the proposing party, where possible, to provide in its statement of reasons for concern a comparison of toxicity or ecotoxicity data with detected or predicted levels resulting or anticipated from its LRET, CropLife International underscored such a comparison should form a fundamental part of any proposal and regretted that "yet again" this requirement has been ignored. An observer from the US regretted the lack of the comparison called for under paragraph 2 of Annex D and noted such a comparison would help the proposal moving forward.

An observer from the UK welcomed further discussion of persistence, bio-accumulation, and potential for LRET.

An observer, speaking for both Pesticide Action Network (PAN) and IPEN, expressed support for the EU's proposal and noted that methoxychlor's endocrine disrupting properties are of "great concern" for the health of humans and wildlife. Noting that the proposal satisfies the Annex D screening criteria, an observer from China highlighted the need for more comprehensive scientific data. An observer from Norway supported moving methoxychlor to the next phase of review.

Members agreed to establish a contact group on the issue, chaired by Thabile Ndlovu (eSwatini). The group met on Tuesday afternoon and Wednesday morning to determine whether methoxychlor satisfies the Annex D screening criteria.

On Thursday morning, Ndlovu reported to plenary that the group had completed its work following discussions that focused particularly on evidence of LRET and adverse effects. Chair

Moreira invited delegates to comment on the draft decision, noting that formal decision-making would not take place until Friday, when the decision text would be available in all UN languages.

Pointing to limited detail in the draft decision related to chemical identity, New Zealand asked whether CAS numbers should be included. Austria clarified that the CAS numbers were removed in order to broaden the entry and ensure all isomers were covered.

On Friday, the POPRC agreed that methoxychlor satisfied the Annex D screening criteria. The Committee also agreed to establish an intersessional working group, to be chaired by Mantoa Sekota (Lesotho), with Lucie Ribeiro (Austria) as drafter.

**Final Decision:** In its decision (UNEP/POPS/POPRC.15/CRP.1), the POPRC, *inter alia*:

- decides that it is satisfied that the screening criteria have been fulfilled for methoxychlor;
- decides to establish an intersessional working group to review the proposal further and to prepare a draft risk profile in accordance with Annex E (information requirements for the risk profile) to the Convention; and
- invites parties and observers to submit to the Secretariat the information specified in Annex E by 2 December 2019.

**Dechlorane Plus:** On Tuesday, the Secretariat introduced the documents (UNEP/POPS/POPRC.15/3 and UNEP/POPS/POPRC.15/INF/6/Rev.1). Christel Olsen (Norway) presented her country's proposal to list Dechlorane Plus and its syn- and anti-isomer in Annexes A, B and/or C to the Convention. She explained that Dechlorane Plus is an additive flame retardant used since the 1960s in applications such as electrical wire and cable coatings, plastic roofing materials, connectors in TV and computer monitors, and automobiles. Noting that the substance is ubiquitous in humans and wildlife around the world, she cited evidence indicating that the substance is persistent, bioaccumulative, toxic, and subject to LRET.

The Netherlands asked whether Dechlorane Plus has been used as pesticide. Luxembourg characterized the "overall data package" on the substance as limited, and said that while there is growing evidence concerning possible health effects, it was difficult to draw definitive conclusions. Denmark, and observers from the UK, and Australia, called for further discussion of adverse effects in a contact group. China called for further discussion of citations used in the proposal.

Emphasizing that Dechlorane Plus has been found in human milk, serum, and cord blood and is thus transferred to future generations, IPEN said this substance meets all Annex D screening criteria "and should have been banned long ago."

The POPRC agreed to establish a contact group chaired by Helen Jacobs (Jamaica).

On Thursday morning, Jacobs reported that the group had met on Wednesday afternoon and evening and agreed in "relatively short order" that the proposal fulfilled specific criteria related to identity, persistence, bioaccumulation, and LRET. She noted, however, that the criterion related to adverse effects on human health was not satisfied by the information available, that there needed to be consensus on which toxicity or ecotoxicity data would be used, and that there were divergent views about the relevance and adequacy of information and the quality of studies

provided. She confirmed that the group had ultimately agreed on a draft text for further discussion in plenary.

Expressing “full confidence” in the conclusions of the contact group, Denmark, supported by Austria, highlighted the need for additional data on adverse effects to be presented at the risk profile stage. Luxembourg and Ghana expressed concern about the lack of data related to adverse effects. Morocco and Japan, supported by the Netherlands, called for additional data on toxicity.

The Netherlands also called for caution in using monitoring data as proof of bioaccumulation, underscored that preservation of a chemical in an ice core is not proof of persistence, and drew attention to paragraph 2 of Annex D to the Convention, which states “The proposing Party shall provide a statement of the reasons for concern including, where possible, a comparison of toxicity or ecotoxicity data with detected or predicted levels of a chemical resulting or anticipated from its long-range environmental transport, and a short statement indicating the need for global control.” He suggested that, if the data exists, it could be used to demonstrate that Dechlorane Plus has adverse effects on human health or the environment.

An observer from the UK also called for inclusion of the data referenced in paragraph 2 of Annex D and emphasized that there must be a threshold for quality of information used to support the progression of a substance through the POPRC’s review process. An observer from the US reiterated her concerns about data related to adverse effects and looked forward to hearing “clearer expectations” about paragraph 2 of Annex D.

The Netherlands also queried the possibility of developing guidance on LRET and persistence to facilitate future decision-making. The Secretariat explained that such guidance could be developed on a volunteer basis by a member of the POPRC with relevant expertise.

Highlighting the need for transparency, Luxembourg asked whether the rationale and limitations of data could be added to either the decision text or meeting report. POPRC Chair Moreira confirmed that the uncertainties raised by Committee members during the plenary discussion would be reflected in the meeting report. Kenya, Yemen, Ghana, and eSwatini expressed support for this approach.

On Friday, the POPRC decided that Dechlorane Plus (and its syn-isomer and anti-isomer) satisfies the Annex D screening criteria of the Stockholm Convention. The Committee established an intersessional working group to prepare a draft risk profile for consideration at POPRC-16. The working group will be chaired by Victorine Augustine Pinas (Suriname), with Andreas Buser (Switzerland) to serve as the drafter until his term ends in May 2020, after which he will be replaced by incoming POPRC member Christina Tolfsen (Norway).

**Final Decision:** In its decision (UNEP/POPS/POPRC.15/CRP.4/Rev.1), the POPRC, *inter alia*:

- decides that it is satisfied that the screening criteria have been fulfilled for Dechlorane Plus (CAS No. 13560-89-9) and its syn-isomer (CAS No. 135821-03-3) and anti-isomer (CAS No. 135821-74-8);
- decides to establish an 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 2 December 2019, for Dechlorane Plus and its syn-isomer and anti-isomer.

**Review of information related to specific exemptions for decaBDE and SCCPs:** On Tuesday afternoon, the Secretariat introduced the agenda item on the review of information related to specific exemptions for decabromodiphenyl ether (decaBDE) and short-chain chlorinated paraffins (SCCPs) (UNEP/POPS/POPRC.15/5). Recalling decisions adopted during COP-8, the Secretariat said that parties are to provide, by 2 December 2019, information on progress made in building the capacity of countries to transfer safely to alternatives to decaBDE and SCCPs. The Secretariat clarified that the committee is not expected to debate those chemicals or their exemptions at this stage; rather, it could establish an intersessional working group on this issue.

Belarus said that the draft workplan proposed by the Secretariat was realistic and asked for members to support its adoption.

POPRC-15 agreed to establish intersessional working groups on specific exemptions for decaBDE and SCCPs and adopted the draft workplan as proposed by the Secretariat. On Friday, the POPRC agreed that the working group on decaBDE would be chaired by Tamara Kukharchyk (Belarus) until 4 May 2020, and that she will be replaced by incoming POPRC member Magdalena Frydrych (Poland). The drafting will be done by a consultant.

The Committee agreed that Jean-François Ferry (Canada) would chair the intersessional working group on SCCPs and that the drafting would be done by a consultant.

### **Review of the Outcomes of COP-9**

On Wednesday, the Secretariat introduced the document on the outcomes of COP-9 that are relevant to the work of the POPRC (UNEP/POPS/POPRC.15/INF/4), including, *inter alia*, decisions to list dicofol and PFOA, its salts and PFOA-related compounds.

Expressing regret that she had been unable to attend COP-9, Chair Moreira underscored the importance of participation by POPRC members at meetings of the COP. She noted that POPRC members at COP-9 made significant contributions to the success of the meeting, including by explaining the scope of proposed listings, justifying exemptions, focusing negotiations on science and facts, and avoiding discussions of issues already covered at POPRC meetings. The Netherlands reiterated the importance of POPRC members’ participation in meetings of the COP.

Ghana noted his displeasure that some countries had presented new information at the COP that had not been considered by the POPRC, saying this undermines the science-based work of the POPRC.

Belarus lamented that the Committee’s recommendations for exemptions related to PFOS had to be expanded to reach consensus at COP-9, but emphasized that the quality of the work done by the POPRC had “safeguarded and maintained” many of the Committee’s recommendations.

An observer from China emphasized that the COP must take both scientific and political factors into account in its decision-making. New Zealand noted that national concerns might not align with scientific evaluation of substances, and reminded



members that national management of chemicals is not “100% about the science.”

The United Firefighters Union of Australia expressed disappointment about exemptions related to PFOA, emphasizing that the decision is unrealistic in asking firefighters to try to capture firefighting foam when their priorities are to save lives and property. Norway underscored the importance of listening to information provided by end-users, as well-intended decision texts might not work in real life.

The POPRC agreed to take note of these outcomes.

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

On Wednesday morning, the Secretariat introduced the report (UNEP/POPS/POPRC.15/INF/7). She reported on a joint Stockholm-Rotterdam regional workshop on effective participation in the work of chemical review committees for the South-East Asian subregion held in November 2018, and thanked the EU and Norway for their financial support. She explained the Secretariat is planning to organize, subject to available resources, similar joint workshops in other regions during the 2020-2021 biennium. She also reported on the orientation session for newly appointed POPRC members held on Tuesday at lunchtime, and highlighted the convening of online briefings and the preparation of awareness-raising materials on newly listed POPs.

Ghana underscored that members in his region whose terms are ending in 2020 look forward to having access to such a workshop prior to the end of their service on the POPRC. Indonesia recalled having participated in the 2018 workshop and underscored its value, including in facilitating connections and clarifying POPRC procedures.

The POPRC agreed to take note of the information provided by the Secretariat.

### ***Workplan for the Intersessional Period***

On Friday, the Secretariat introduced the workplan for the intersessional period between the fifteenth and sixteenth meetings of the Committee (UNEP/POPS/POPRC.15/6), which the POPRC adopted.

### ***Venue and Date of POPRC-16***

On Friday, the Committee agreed that POPRC-16 will take place from 14-18 September 2020 in Rome, Italy.

### ***Adoption of the Report and Closure of the Meeting***

On Friday morning, the Secretariat introduced the draft report of the meeting (UNEP/POPS/POPRC.15/L.1), noting that completion of the second half of the report, containing Friday's proceedings, would be entrusted to the meeting rapporteur. Rapporteur Svitlana Sukhorebra (Ukraine) led the Committee through a paragraph-by-paragraph reading of the meeting report, which the POPRC adopted with minor edits.

Chair Moreira thanked all participants for sharing their expertise and, noting that this was to be her last meeting as a member of the POPRC, thanked all participants, saying that working with the Secretariat and members and observers of the POPRC had been “a rich and joyful experience.” Several members and observers expressed appreciation for Chair

Moreira's leadership over the past six years, noting that during her tenure, nine new POPs had been listed in the annexes of the Stockholm Convention.

POPRC-15 was gavelled to a close at 11:08 am.

### **A Brief Analysis of POPRC-15**

*“The work of the POPRC is more and more difficult, and more and more efficient, and more and more important to the environment and people's health.”* – Professor Jianxin Hu, POPRC Member (China)

Fifteen years. Thirty substances. Since entering into force in 2004, the Stockholm Convention on Persistent Organic Pollutants (POPs) has expanded its reach from the original “dirty dozen” chemicals to include 18 new listings. As the gatekeeper to the Convention, the POPs Review Committee (POPRC) has played a critical role in the expansion and success of the Convention in responding to newly identified threats to human health and the environment. However, this task has become more challenging over the years as the focus of the Committee's work has shifted increasingly toward technically complex industrial chemicals that are often difficult to classify for regulatory action, identify in products, and replace.

At their fifteenth meeting, delegates to the POPRC had before them what some characterized as a relatively light workload: there were only three substances on the agenda, and none were in the most technically difficult and contentious second stage of review (when the Committee conducts a rigorous assessment of evidence to determine whether a substance should be categorized as a POP). This meeting set the stage for major decisions, as the POPRC decided at this meeting to recommend one widely used industrial chemical for elimination with no exemptions, and also agreed to commence the second stage of review for two chemicals that were newly proposed for listing. As we near the international community's goal to achieve the sound management of chemicals throughout their lifecycle by 2020, this brief analysis explores the POPRC's contributions to this goal through its work so far and considers what is in store for the Committee in the coming years.

### ***Streamlining Complexity: Lessons from PFOS and PFOA for PFHxS***

One of the most significant areas of achievement of the POPRC is its trailblazing work in determining how to address technically complex substances in ways that are rigorous, replicable, and amenable to implementation in countries around the world. The Committee's work on perfluorooctane sulfonate (PFOS)—one of the most technical and politically challenging issues parties to the Convention have dealt with to date—has proven to be a valuable model for action on other complex substances.

PFOS is an industrial chemical that has been widely used in a range of applications such as firefighting foams, textiles, semi-conductors, and pesticides. While Sweden's initial proposal on this chemical included a list of 96 “PFOS-related substances,” during the review process it became clear to the POPRC that agencies around the world had different ideas about how many PFOS-related substances existed: listings ranged from 48 to 271. How were they to proceed? Would future discoveries of PFOS-related substances require separate proposals for listing?

It was not until the POPRC's third meeting, when the draft risk management evaluation for PFOS was being discussed, that the Committee took up a member's suggestion to express the identity of the chemical recommended for listing as "Perfluorooctane sulfonic acid (PFOS), its salts, and perfluorooctane sulfonyl fluoride (PFOSF)." Upon consideration of how it would recommend to parties that PFOS, its salts and PFOSF be listed under the Convention, the Committee suggested that parties might list the substance under Annex A (elimination) or Annex B (restriction), thus leaving parties to come to agreement about what exemptions for continued production and/or use should be allowed.

At POPRC-11, members were confronted with a similar set of questions about perfluorooctane sulfonic acid (PFOA). In this case, the Committee took a cue from its experience with PFOS on how to most flexibly communicate the chemical identity, and agreed that a European Union (EU) proposal to list "perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds" fulfilled the screening criteria. The need to ensure that parties could implement actions was also recognized by the Conference of the Parties (COP), which was keen to assist countries in complying with their obligations. As such, the COP agreed to append an initial indicative list of substances covered by the listing with their CAS numbers, and to entrust the Secretariat to make it available on the website and update it periodically. No further POPRC review was required.

The lessons learned from the reviews of PFOS and PFOA have informed the POPRC's work on the latest candidate from the family of per- and polyfluoroalkyl substances (PFAS): perfluorohexane sulfonic acid (PFHxS), its salts, and PFHxS-related compounds. Even as the POPRC continues to be challenged by issues related to substances in the PFAS family, the efficiency with which the POPRC dealt with PFHxS demonstrates the Committee's ability to draw on related experiences to efficiently deal with ever-more complex problems. To respond to concerns about the lack of detailed information on the suite of PFHxS-related substances, the POPRC ensured that parties would be able to access CAS information for all currently known PFHxS-related chemicals through a method analogous to that put in place at COP-9 for PFOA: using an Organisation for Economic Co-operation and Development (OECD) list as a starting point, the Secretariat will maintain and update a list on its website. Notably, however, members did not endorse a broader means of conveying the identity of PFHxS suggested by the EU, which would have encompassed theoretically-related substances that have not yet been identified.

### ***Bringing those Affected by POPs to the Table***

Observers from both industry and civil society have played significant roles in POPRC's work since its inception, offering critical perspectives on the ways in which chemicals under review are used and affect particular populations. This information complements the technical expertise of the POPRC members, and informs participants' understanding of the implications of potential listing of chemicals. At POPRC-15, representatives from the United Firefighters Union of Australia vividly explained that, even though Decision IX/4 (amending the PFOS listing in Annex B) and Decision IX/12 (listing PFOA under Annex A) require that firefighting foam that uses either of these substances be limited

to situations where "all releases can be contained," containment cannot be a priority when firefighters are trying to save lives and property in dangerous situations. Indeed, containment is often impossible due to collapsing infrastructure, explosions, and other uncontrollable events. Given this practical limitation on a well-intended directive, these delegates called for the Stockholm Convention to ban PFAS-containing firefighting foams, which would ensure that firefighters around the world use only fluorine-free alternatives.

In another example of learning from both observers and past experience, in its decision on PFHxS, the POPRC states that a transition to short-chain PFAS for dispersive applications such as firefighting foam is "not a suitable option from an environmental and human health point of view." The firefighters also reminded participants that, due to the extent of their exposure, they have unusually high levels of PFAS in their bodies. As the POPRC concluded its work on PFHxS, Commander Mick Tisbury of the United Firefighters Union of Australia reflected on how long it has taken the POPRC to address just three of these PFAS, drawing attention to the other 4720 PFAS to which he warned against turning for substitutes, and, in an emotional closing statement, thanked the Committee "on behalf of firefighters around the world" for recommending that PFHxS be listed without exemptions.

However, firefighters were not the only users of PFHxS represented at POPRC-15. The FluoroCouncil raised concerns about PFAS potentially being assumed to have POPs characteristics prior to any systematic and scientific review. Indeed, representatives from the manufacturing and semiconductor sectors highlighted the many positive attributes of fluorotechnology that help bring about important social benefits, including in helping to bring about a "digital, secure, and sustainable future." They also called for caution in labeling chemicals as PFAS, and warned against prejudging substances that have not yet gone through a rigorous risk assessment.

### ***Issues on the Horizon for the POPRC***

At the other end of the pipeline, POPRC-15 considered two new proposals: the first by the EU to list methoxychlor in Annex A, and another by Norway to list Dechlorane Plus (and its syn- and anti-isomer) under Annexes A, B and/or C. With concerns about data gaps related to each substance, neither of these were what you might call a "slam dunk" for categorization as a POP. However, now that the POPRC has completed the three-stage review process 18 times, it has become clear that it is not Annex D that presents a stumbling block to a nominated substance moving forward.

While participants raised a range of concerns about the quality of the data contained in the two proposals before the Committee, the basic screening criteria have proven relatively easy to meet, given the flexibility built into Annex D. In particular, questions were repeatedly raised to query whether the mere detection of a substance being nominated should be used as automatic proxies for evidence of persistence or of long-range environmental transport. Indeed, substantive concerns over the validity and relevance of the information presented prompted one member to suggest that it is time to look to POPRC's past to solidify its future. He recalled that at its third meeting, the POPRC had endorsed guidance, prepared by one of its then members, for



applying the bio-accumulation screening criteria, and suggested that similar guidance might be prepared regarding persistence and long-range environmental transport.

However, preparing such guidance requires extensive time and resources. During the intersessional period, stakeholders will need to gather information to help the POPRC address questions regarding the validity and relevance of the information contained in the proposals. These concerns may also serve as a guide to any party looking to put forward their own proposal for a further listing for POPRC-16 to consider.

### A Time of Transition

At the close of POPRC-15, participants made emotional tributes to outgoing POPRC Chair Estefânia Moreira, celebrating her successful tenure at the helm of the Committee. Many lauded Moreira's steady, principled leadership and success in guiding the POPRC's work to recommend 10 substances for listing over the past six years. Veteran POPRC member Peter Dawson (New Zealand) will take over as interim Chair of the POPRC until COP-10, guiding the Committee in its critical work to contribute to the protection of human health and the environment.

### Upcoming Meetings

**Intergovernmental Forum (IGF) on Mining, Minerals, Metals and Sustainable Development - 15th Annual General Meeting (AGM):** The IGF emerged from the 2002 World Summit on Sustainable Development in Johannesburg, South Africa. **dates:** 7-11 October 2019 **location:** Geneva, Switzerland **www:** <https://www.igfmining.org>

**15th Meeting of the Chemical Review Committee (CRC-15):** CRC-15 is set to address PFOA, its salts and related compounds, and other notifications submitted during the intersessional period. **dates:** 8-10 October 2019 **location:** Rome, Italy **www:** [www.pic.int](http://www.pic.int)

**Montreal Protocol MOP-31:** The 31st Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer will address, *inter alia*, implementation of the Kigali Amendment, linkages between hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs) in transitioning to low global warming potential alternatives, issues related to energy efficiency while phasing down HFCs, and critical and essential use exemptions. **dates:** 4-8 November 2019 **location:** Rome, Italy **www:** <http://ozone.unep.org/>

**3rd Meeting of the expert working group on the review of Annexes to the Basel Convention:** The expert working group will continue its work so as to enable the development of amendment proposals and for presentation and discussion at the twelfth meeting of the Open-ended working group (OEWG-12). **dates:** 5-8 November 2019 **location:** Bratislava, Slovakia **www:** <http://www.basel.int/>

**Third Meeting of the Conference of the Parties to the Minamata Convention on Mercury:** COP-3 is expected to discuss, *inter alia*, waste thresholds, releases, interim storage, contaminated sites, open burning of waste, review of Annexes A and B, and harmonized customs codes. **dates:** 25-29 November 2019 **location:** Geneva, Switzerland **www:** <http://www.mercuryconvention.org>

**57th Meeting of the Global Environment Facility (GEF) Council:** The 57th meeting of the GEF Council will take place in December. The Council meets twice annually to develop, adopt and evaluate the operational policies and programs for GEF-financed activities. It also reviews and approves the work program (projects submitted for approval), making decisions by consensus. **dates:** 17-19 December 2019 **location:** Washington D.C., USA **www:** <https://www.thegef.org/council-meetings>

**4th Meeting of the Intersessional Process (IP4) considering the Strategic Approach and the Sound Management of Chemicals and Waste beyond 2020:** IP4 is expected to continue the discussions on a possible post-2020 platform for chemicals and waste and will convene ahead of the fifth session of the International Conference on Chemicals Management (ICCM-5), scheduled for 5-9 October 2020 in Bonn, Germany. **dates:** 23-26 March 2020 **location:** Bucharest, Romania **www:** <http://www.saicm.org/>

**8th International Nitrogen Initiative Conference:** The conference is expected to stimulate an exchange among policymakers and other relevant stakeholders of results, ideas, and visions to improve future holistic management of reactive nitrogen. **dates:** 3-7 May 2020 **location:** Berlin, Germany **www:** <https://ini2020.com/>

**12th Helsinki Chemicals Forum (HCF):** HCF 2020 is organized by the Chemicals Forum Association, in cooperation with the European Chemicals Agency, the European Commission, the European Chemical Industry Council, and the Finnish Government with local partners, including the City of Helsinki, the Chemical Industry Federation of Finland, and the University of Helsinki. **dates:** 4-5 June 2020 **location:** Helsinki, Finland **www:** <https://helsinkichechemicalsforum.messukeskus.com/>

**42nd Meeting of the Open-Ended Working Group (OEWG-42) of the Parties to the Montreal Protocol:** OEWG-42 will convene to prepare for the next Meeting of the Parties. **dates:** 13-17 July 2020 **location:** Montreal, Canada **www:** <https://ozone.unep.org>

**Sixteenth Meeting of the Persistent Organic Pollutants Review Committee:** The POPRC will review the possible listing of hazardous chemicals under the various annexes of the Stockholm Convention. **dates:** 14-18 September 2020 **location:** Rome, Italy **www:** [www.pops.int](http://www.pops.int)

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

### Glossary

COP	Conference of the Parties
decaBDE	Decabromodiphenyl ether
IPEN	International POPs Elimination Network
LRET	Long-range environmental transport
PFAS	Per- and polyfluoroalkyl substances
PFHxS	Perfluorohexane sulfonic acid
PFOA	Pentadecafluorooctanoic acid
PFOS	Perfluorooctane sulfonic acid
PFOSF	Perfluorooctane sulfonyl fluoride
POPs	Persistent organic pollutants
POPRC	POPs Review Committee
RME	Risk management evaluation
SCCPs	Short-chain chlorinated paraffins