POPRC-17 FINAL

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Summary of the Seventeenth Meeting of the Persistent Organic Pollutants Review Committee: 24-28 January 2022

The seventeenth meeting of the Persistent Organic Pollutants (POPs) Review Committee (POPRC-17) to the Stockholm Convention had a full agenda with six chemicals to consider in addition to ongoing work related to the implementation of the Stockholm Convention. The Committee successfully adopted decisions on all six chemicals and either moved them on to the next stage of the review process or adopted recommendations to the Conference of the Parties (COP) to list them under the Convention.

At the first, Annex D stage, the POPRC considered three chemicals that were nominated for potentially possessing POP characteristics of persistence, bioaccumulation, long-range environmental transport (LRET), and adverse effects. These chemicals were: chlorpyrifos, chlorinated paraffins with carbon chain lengths in the range C14-17 and chlorination levels at or exceeding 45% by weight, and long-chain perfluorocarboxylic acids (LC-PFCAs), their salts and related compounds. All were ultimately moved to the next stage of review, after some debate, particularly on the scope of chemicals to be considered.

At the second, Annex E stage, the POPRC conducts an in-depth review to determine if the chemical is a POP that warrants global action due to its adverse effects on human health and/or the environment, and LRET. The two Annex E chemicals, UV-328 and Dechlorane Plus, proved difficult to review. For UV-328, a stabilizer used in plastic products, the debate centered on LRET, and whether plastic debris in the oceans or seabirds is a mechanism for transporting the chemical around the world. For Dechlorane Plus, participants differed in their assessment of whether the chemical shows "significant adverse effects." In the end, for both, the POPRC, relying on and citing the precautionary approach, agreed that global action is warranted, and moved the chemicals to the next and final stage of review.

The pesticide methoxychlor was the only one at the final stage where POPRC considers a draft risk management evaluation that includes socio-economic considerations and determines if there are safe alternatives. The POPRC agreed to recommend that methoxychlor should be listed under Annex A to the Convention, without exemptions, which would eliminate its production and use.

POPRC-17 convened in a hybrid format from 24-28 January 2022. Twenty of the 31 POPRC members attended in person in Geneva, Switzerland, and 10 members participated virtually, through an online portal. In total, 273 observers registered for the meeting, including 183 from governments and 75 civil society and industry representatives. In person, there were 82 observers.

POPRC members participate in their expert capacity, and are identified as individuals, rather than countries, throughout this report. The POPRC members are: Agustin Harte (Argentina); Ingrid Hauzenberger (Austria); Tamara Kukharchyk (Belarus); Valentina Bertato (Belgium); Greg Hammond (Canada); Jianxin Hu (China); Luis G. Romero Esquivel (Costa Rica); Jean Paul Otamonga (Democratic Republic of the Congo); Rikke Donchil Holmberg (Denmark); Mario Rodas (Ecuador); Elham Refaat Abdelaziz (Egypt); Mehari Wondmagegn Taye (Ethiopia); Caren Rauert (Germany); Sam Adu-Kumi (Ghana); Ved Prakash Mishra (India); Amir Nasser Ahmadi (Iran); Kazuhide Kimbara (Japan); Mantoa Sekota (Lesotho); Amal Lemsioui (Morocco); Gotfried Uiseb (Namibia); Peter Dawson (New Zealand); Christina Tolfsen (Norway); Syed Mujtaba Hussain (Pakistan); Vilma Morales Quillama (Peru); Magdalena Frydrych (Poland); Hyo-Bang Moon (Republic of Korea); Victorine Augustine Pinas (Suriname); Chalongkwan Tangbanluekal (Thailand); Nadjo N'Ladon (Togo); Svitlana Sukhorebra (Ukraine); and Anass Ali Saeed Al-Nedhary (Yemen). Mehari Wondmagegn Taye (Ethiopia) did not attend POPRC-17.

In this Issue

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A Brief History of the POPRC

During the 1960s and 1970s, the use of chemicals and pesticides in industry and agriculture increased dramatically. 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. POPs are capable of LRET to regions where they have never been used or produced, and consequently pose threats to the global environment. Given these characteristics, the international community called for urgent global action to reduce and eliminate their release into the environment.

The UN Environment Programme's Governing Council launched negotiations in February 1997 and the Stockholm Convention was adopted in May 2001. The Convention entered into force on 17 May 2004, and currently has 185 parties. The Convention lists chemicals in three annexes: Annex A lists chemicals to be eliminated; Annex B lists chemicals to be restricted; and Annex C calls for minimizing 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 its 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 Annexes A, B, and/or C to the Convention.

The POPRC has met annually since its establishment.

Chemicals Reviewed in the POPRC Process

To date, the COP has listed all 18 POPs recommended by the POPRC. For most parties, the amendment listing a new POP enters into force automatically within a set time frame after the COP listing. However, 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 convened between 2005 and 2008. 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 recommended 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 to 9: These meetings convened between 2009 and 2013. During this time, the POPRC recommended that the COP consider listing the following POPs under Annexes A and/or C: hexabromocyclododecane (HBCD), with specific exemptions; chlorinated naphthalenes (CNs), and hexachlorobutadiene (HCBD). The POPRC agreed to recommend listing endosulfan, by a majority vote at both the draft risk profile and risk management evaluation stages.

At these meetings, the commercial mixture of decabromodiphenyl ether (c-decaBDE) advanced to the draft risk profile stage. Pentachlorophenol (PCP), its salts and esters advanced to the draft risk management evaluation stage.

At POPRC-7, for the first time, the Committee considered POPs alternatives, with assessment of alternatives to PFOS in open applications, DDT, and endosulfan.

POPRC-10: At this meeting in 2014, the Committee adopted seven decisions, including: 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 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 recommended 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: This meeting was held online in 2021 due to the COVID-19 pandemic. Delegates agreed UV-328 met the Annex D criteria, although questions remained about whether transport via plastics in the ocean and seabirds represents a viable mechanism for LRET. The POPRC agreed to prepare a guidance document on LRET. POPRC-16 also agreed that methoxychlor met Annex E criteria, but debate about the evidence base for adverse effects of Dechlorane Plus meant that the chemical remained at the Annex E stage.

POPRC-17 Report

On Monday, 24 January, Interim Chair Peter Dawson (New Zealand) welcomed participants, acknowledging those joining the session both online and in-person. He pointed out that the current hybrid mode of working has benefits, including for participation, citing the record POPRC attendance of over 300 people, with more than 200 joining online.

Rolph Payet, Executive Secretary of the Basel, Rotterdam and Stockholm (BRS) Conventions, attending virtually, greeted participants and welcomed those attending in person in Geneva despite the challenges. Acknowledging the heavy agenda, he expressed appreciation for all the work done by intersessional working groups as well as Interim Chair Dawson and Vice-Chair Svitlana Sukhorebra (Ukraine). He told delegates to "be safe, stay healthy, and have a successful meeting."

The POPRC adopted its agenda (UNEP/POPS/POPRC.17/1) and organization of work (UNEP/POPS/POPRC.17/INF/2/Rev.1). The POPRC welcomed new members as set out in the rotation of membership (UNEP/POPS/POPRC.17/INF/3). The Secretariat reported that the terms of 17 members expire in June 2022, after a two-month extension to avoid a membership gap between the end of their terms and the upcoming COP.

Technical Work

Consideration of a draft risk management evaluation on methoxychlor: On Monday, the Secretariat introduced the draft risk management evaluation on methoxychlor (UNEP/POPS/POPRC.17/2), additional information relating to the draft risk management evaluation (UNEP/POPS/POPRC.17/INF/7) and comments and responses relating to the draft risk management evaluation (UNEP/POPS/POPRC.17/INF/8). She noted that POPRC-16 adopted the risk profile on methoxychlor and established an intersessional working group to prepare a risk management evaluation.

Chalongkwan Tangbanluekal (Thailand), Chair of the intersessional working group, presented the draft risk management evaluation. She reported that methoxychlor is used as an insecticide and a biocide in both agricultural and veterinary practices. Noting that its production and use have been phased out in many countries for almost 20 years, she said there is limited information about current production and use.

Tangbanluekal highlighted relatively recent findings of methoxychlor in food and environmental samples that could possibly indicate ongoing use in some parts of the world. She also noted that: no critical uses were identified by parties; a range of alternatives are available and widely used; and no parties highlighted any need for exemptions.

Tangbanluekal concluded that the prohibition of all production, use, import, or export is likely the most effective and appropriate control measure and highlighted the recommendation to list methoxychlor says that the COP should list and specify the related control measures for methoxychlor in Annex A without exemptions.

During the discussion, there was widespread support for listing methoxychlor in Annex A without exemptions.

Rodas, Abdelaziz, and Harte called for elaborating the guidance on managing contaminated sites.

Hauzenberger said the potential ongoing use underlined the need to list methoxychlor in Annex A without exemptions. Morales noted methoxychlor was found in coffee grains from South America, including Peru. Noting methoxychlor has never been used in Peru, she suggested this could be due to LRET, inadequate monitoring, or ongoing use despite Peru's ban. She underlined the need for support with inventories.

Tolfsen, supported by Frydrych, and an observer from the US, queried the phrase "specifying related control measures" in the final recommendation for listing methoxychlor, suggesting that this could be deleted.

Harte called for assessing the alternatives suggested in the risk management evaluation, particularly neonicotinoids, noting these can adversely affect pollinators such as bees.

Comments from observers also supported listing methoxychlor in Annex A without exemptions. Pesticides Action Network (PAN) and International Pollutants Elimination Network (IPEN) underlined that no critical uses were identified.

The Russian Stockholm Convention Regional Centre (SCRC) supported listing in Annex A without exemptions and clarified that there is no production or use in the Russian Federation.

An observer from the US requested that the information on American regulations specify that methoxychlor was phased out rather than banned, as a better characterization of the US regulatory system.

The POPRC established a contact group, chaired by Tangbanluekal, to address the outstanding questions regarding inventories, contaminated sites, and the control measures referenced in the conclusion, and then draft a decision. On Tuesday, Tangbanluekal reported that the contact group had finished the draft decision and draft risk management evaluation, with the exception of some data from the Russian Federation that would be submitted during the day.

On Friday, the Secretariat introduced the draft decision (UNEP/POPS/POPRC.17/CRP.1) and draft risk management evaluation (CRP.2).

Tolfsen, Abdelaziz, PAN, and the Russian SCRC expressed support for the final draft decision.

Final Decision: In its decision, the POPRC adopts the risk management evaluation for methoxychlor and decides to recommend to the COP that it consider listing methoxychlor in Annex A to the Convention without specific exemptions.

Consideration of Draft Risk Profiles: *Dechlorane Plus*: On Monday, the Secretariat introduced the draft risk profile for Dechlorane Plus (UNEP/POPS/POPRC.17/3), comments and

responses (UNEP/POPS/POPRC.17/INF/10), and additional information relating to draft risk profile (UNEP/POPS/POPRC.17/INF/9).

Victorine Augustine Pinas (Suriname), Chair of the intersessional working group, introduced the revised draft risk profile and Christel Olsen (an observer from Norway), drafter of the intersessional working group, presented it to the Committee. Recalling that POPRC-16 was unable to agree on the adverse effects criterion, Olsen said she would focus on this criterion. She noted that Dechlorane Plus is a global contaminant, with the highest levels of exposure in industrial areas and e-waste recycling sites with levels comparable to polybrominated diphenyl ethers (PBDEs).

Summarizing data on human exposure, Olsen noted that Dechlorane Plus has been detected worldwide in human tissue, including placenta, cord blood, breast milk, adipose tissue, and hair, with high exposures in toddlers and young children, as well as high occupational exposures. She pointed out that Dechlorane Plus is linked to ageing and to diseases in animals, and has potential for endocrine disruption and liver impairment in humans. Olsen noted that it is impossible to draw definitive conclusions on whether Dechlorane Plus is carcinogenic to humans and animals.

Bruce Bloomberg (University of California Irvine) elaborated on these studies and explained the mechanism of endocrine disruptors acting as obesogens in humans and animals. He then presented studies on rats that were treated with low doses of Dechlorane Plus, and concluded that Dechlorane Plus, combined with a high-fat diet, led to pancreatic dysfunction, white adipose tissue dysfunction, brown adipose tissue dysfunction, and predisposition to type II diabetes. Bloomberg also noted that Dechlorane Plus can disrupt thyroid hormone receptor signaling, which can promote attention deficient hyperactivity disorder (ADHD).

Olsen then stressed that maternal exposure to Dechlorane Plus causes embryo exposure in fish, frogs, birds, sharks, and humans, and crosses the blood-brain barrier in fish and frogs. She highlighted the structural similarity of Dechlorane Plus to aldrin and heptachlor, indicating the potential for neurotoxicity and/or hepatotoxicity.

Rodas said Dechlorane Plus had already fulfilled the criteria of persistence, bioaccumulation, and potential for LRET. He stressed that regarding toxicity, the studies presented show beyond reasonable doubt that Dechlorane Plus is toxic to animals and humans.

Bertato, Frydrych, Tangbanluekal, and Hauzenberger supported the draft risk profile and the conclusion that the adverse effects criterion has been met.

Kimbara said he looked forward to discussing studies on human health.

Hu questioned the statement in the draft risk profile that "modelled half-lives in air are largely based on gas phase reactions and do not consider possibly longer half-lives following sorption to particles," saying he has the opposite understanding of this issue. He asked for references supporting the statement.

Mishra called for more information about the socio-economic implications of global action on Dechlorane Plus, especially on developing countries and countries with economies in transition, before making a decision.

Observers from the US, Japan, and the UK questioned whether the draft risk profile shows sufficient evidence of adverse effects. The UK observer said he can provide more details about tests the UK is undertaking on Dechlorane Plus to characterize long-term fish toxicity.

Alaska Community Action on Toxics (ACAT) said there is sufficient evidence of adverse effects and supported moving to the next stage.

A contact group, chaired by Pinas, was established to revise the draft risk profile and prepare a draft decision. The Committee agreed that the Secretariat should prepare draft text to serve as the starting point for the draft decision.

On Friday, the Secretariat introduced the draft decision on Dechlorane Plus (UNEP/POPS/POPRC.17/CRP.9). In the draft decision, the Committee decides to defer its decision on the draft risk profile for Dechlorane Plus to POPRC-18, noting, *inter alia*, that it had been unable to agree that the information on the significance of adverse effects was sufficient to reach a conclusion.

Tolfsen opposed the draft decision, and drew attention to an alternative decision that she submitted (CRP.8). Suggesting that more data are being required for the adverse effects criterion than was required for other criteria, she outlined the proposal that adopts the risk profile and notes that there is limited data on toxicity and ecotoxicity, but that available data indicates concern for potential adverse effects at low levels. She also noted that the proposal cites the precautionary principle.

Kukharchyk, Abdelaziz, Hammond, Bertato, Frydrych, Tangbanluekal, ACAT, and an observer from China supported moving the chemical to the Annex F stage, with Kukharchyk noting that although the data shows limited effect on human health, it shows adverse effects on the environment. Abdelaziz and Bertato supported a reference to the precautionary approach. Hu noted China is considering a proposal to ban Dechlorane Plus and will likely do so this year.

Hauzenberger noted that although the characteristics of Dechlorane Plus justify global action, there are limitations in the available data. She called for including forthcoming information on fish toxicity and human biomonitoring to further strengthen the nomination. The observer from the UK confirmed that the UK is undertaking a long-term fish toxicity test using dietary exposure and that the first results are expected in June 2022.

Kimbara and Holmberg supported waiting for the data from the UK to strengthen the evidence of significant adverse effects.

Chair Dawson noted that if the Committee defers consideration of Dechlorane Plus pending the availability of additional information, the chemical would be considered by the COP in 2025, but if the draft risk profile is approved, it could be considered in 2023.

Chair Dawson proposed that the Committee adopt the draft risk profile, including the reference to the precautionary approach. He said once additional data becomes available, such from the UK study, the risk profile can be revised accordingly.

Kimbara asked what happens if the forthcoming data does not show adverse effects. Hauzenberger and Holmberg reiterated their reservations and asked for them to be noted in the meeting report.

The Committee agreed to the proposal and adopted the text of the draft risk profile (UNEP/POPS/POPRC.17/CRP.10) and adopted a draft decision.

Final Decision: In its decision, as orally amended (UNEP/POPS/POPRC.17/CRP.8, the POPRC, taking into account that Dechlorane Plus and its syn-isomer and anti-isomer is persistent, bioaccumulative and has potential for long-range environmental transport, and recognizing that the dataset on toxicity and ecotoxicity is limited, but that available short-term toxicity data indicates concern for potential adverse effects to the environment and humans at low levels:

- adopts a risk profile for Dechlorane Plus;

- invites the intersessional working group on Dechlorane Plus that prepared the risk profile to explore any further information on adverse effects, and, if appropriate, to revise the risk profile for consideration by POPRC-18;
- recognizing that a lack of full scientific certainty should not prevent a proposal to list a chemical in the annexes of the Convention from proceeding;
- decides that Dechlorane Plus is likely, as a result of long-range environmental transport, to lead to significant adverse human health and/or environmental effects such that global action is warranted;
- decides to establish an intersessional working group to prepare a risk management evaluation that includes an analysis of possible control measures for Dechlorane Plus in accordance with Annex F to the Convention;
- invites parties and observers to submit to the Secretariat the information specified in Annex F for Dechlorane Plus before 14 March 2022.

***UV-238*:** On Monday, the Secretariat introduced the draft risk profile for UV-328 (UNEP/POPS/POPRC.17/4), comments and responses (UNEP/POPS/POPRC.17/INF/11), and additional information (UNEP/POPS/POPRC.17/INF/17).

Sam Adu-Kumi (Ghana), Chair of the intersessional working group, thanked delegates for their work intersessionally. Andreas Buser (an observer from Switzerland), Drafter for the intersessional working group, presented the report, noting it concludes that all Annex E criteria are met. On persistence, he said the half-life exceeds six months as required by the Convention, based on a read-across from a structurally similar compound in sediment. He reported adverse effects including toxicity to liver and kidneys, and reproductive effects.

On bioaccumulation, he reported that the lipid normalized test exceeds the Annex E threshold and highlighted a study from Japan that indicates higher concentrations in finless porpoises than in their prey. He stated that, taken together, the low metabolic rate, slow rate of excretion via urine, and ability to bind to blood proteins, indicate the potential for UV-328 to bioaccumulate in humans.

On LRET, Buser reported studies that found UV-328 in Arctic biota, including in seabird eggs, as well as in birds on remote islands in the Southern hemisphere. Regarding LRET via plastic debris in birds, he highlighted a recent study on additives, including UV-328, and legacy POPs, that concluded plastic ingestion was the likely source of exposure. He said this was because there were no corresponding UV-328 concentrations in the birds' prey and the birds with high concentrations had plastic in their stomachs. Buser also highlighted evidence of LRET in water via plastics, including experimental and monitoring results that show slow or negligible leaching of UV-328 from plastics into the water.

Kimbara, supported by Hu, noted little data on LRET and called for further discussion on the contribution of plastics to the presence of UV-328 in remote regions. Hammond said the evidence of persistence and bioaccumulation supports the conclusions for these criteria, but stated there are some uncertainties regarding adverse effects and LRET.

Hauzenberger stated that the evidence is convincing, highlighting the multiple lines of evidence of LRET, and, supported by Bertato, Holmberg, and Kukharchyk, said the review should move to the Annex E stage. Kukharchyk suggested that, while it raises questions, LRET via plastic debris likely exists given the growing environmental threat that plastics pose.

Tolfsen and Frydrych said the data in the risk profile, including the data regarding LRET, are sufficiently convincing to support the Committee moving to the next phase, with Frydrych noting there are still issues to be discussed.

Mishra noted the difficulties developing countries and countries with economies in transition will experience in implementing any restrictions on UV-328.

An observer from Japan called for further discussion on the issue of LRET of UV-328 by plastics. He said discussions should focus on this specific issue and not include discussions of the general characteristics of plastics.

An observer from China noted that the draft risk profile identified several pathways for LRET, including atmospheric aerosols and microplastics. He called for caution in the treatment of microplastics as a LRET route, pending completion of the work of the intersessional working group developing guidance on applying the LRET criterion.

An observer from the US said the risk profile provides sufficient information, but noted there are still uncertainties that need to be addressed, particularly given the novel nature of the introduction of plastic debris.

An observer from Australia acknowledged that some evidence of LRET has been provided, noted the need for more extensive monitoring information before concluding that UV-328 satisfies the Annex E criterion. She stressed the Stockholm Convention should maintain its focus on chemicals.

IPEN underlined that recent measurements of UV-328 show that it undergoes LRET and global action is therefore warranted. The Inuit Circumpolar Council (ICC) stressed that plastics transport UV-328 to the Arctic and expressed concerns about UV-328 measurements in Arctic seabirds. She concluded that UV-328 meets the Annex E criteria and supported moving to the next phase.

International Panel on Chemical Pollution supported the draft risk profile, noting UV-328 meets the LRET requirement, as it is transported both through plastics and through seabird migration.

The European Chemical Industry Council (CEFIC) supported global action to address plastic pollution, but emphasized the need to comply with Annex E. Stressing that demonstrating the risk of LRET is crucial, he said bringing plastic debris into the Convention will change its intention from the examination of chemicals to the examination of products.

Members agreed to establish a contact group to further review the draft risk profile and prepare a draft decision. The contact group was chaired by Adu-Kumi.

On Friday, the Secretariat introduced the draft decision (UNEP/POPS/POPRC.17/CRP.13) and draft risk profile (UNEP/POPS/POPRC.17/CRP.14).

Hu called for deferring a decision given the lack of data on adverse effects, noting that the studies that show adverse effects involved a high concentration. He said there is no data on toxicity. He noted that the draft risk profile includes studies that have not yet been published and expressed hope more data would be available for a decision at the next POPRC meeting.

Abdelaziz, Bertato, Kukharchyk, Kimbara, Tolfsen, Holmberg, Romero, Frydrych, Tangbanluekal, Hammond, Harte, Rodas, Morales, and Mujtaba supported the decision.

An observer from Switzerland underscored that all criteria were fulfilled, saying that the EU assessment cited in the nomination proved human toxicity and that the evidence from birds in remote regions shows adverse effect on the environment. He highlighted

that reference to marine plastics as a vehicle for LRET was dropped from the concluding statement of the draft risk profile in a spirit of compromise.

The American Chemistry Council said the plastics problem requires a separate global instrument. She said LRET by marine plastics is unclear, but looked forward to engaging at the next stage of review.

IPEN said the evidence is clear that all criteria were met.

An observer from China supported deferring a decision until there is further information, saying that it is too early to conclude there are adverse effects as a result of LRET.

An observer from Japan said there is sufficient evidence of adverse effects and supported the decision.

An observer from the UK, supported by an observer from the US, agreed that the data show that LRET via plastics is plausible and that the criteria were met.

Hu proposed, as a compromise, to reference the precautionary approach of the Rio Declaration on Environment and Development, also mentioned in Article 8 of the Stockholm Convention, in the draft risk profile.

Hauzenberger, Tolfsen, Bertato, and an observer from Switzerland supported the compromise, but stressed that in their view, there is no uncertainty that would require using the precautionary approach.

Final Decision: In its final decision (UNEP/POPS/POPRC.17/CRP.13), the POPRC:

- adopts the risk profile for UV-328;
- decides that UV-328 is likely, as a result of its LRET, to lead to significant adverse human health and/or environmental effects such that global action is warranted;
- decides to establish an intersessional working group to prepare a risk management evaluation that includes an analysis of possible control measures for UV-328 in accordance with Annex F; and
- invites parties and observers to submit to the Secretariat, before 14 March 2022, the information specified in Annex F.

Consideration of chemicals proposed for listing in Annexes A, B and/or C to the Convention: *Chlorpyrifos*: On Monday, the Secretariat introduced the proposal from the EU and additional information (UNEP/POPS/POPRC.17/5 and INF/4) and verification that the proposal contained the information specified in Annex D (UNEP/POPS/POPRC.17/INF/6).

Bertato presented the nomination, focusing on summary information on the criteria for listing. On persistence, monitoring data shows chlorpyrifos in sediment cores that can be dated back several decades. She reported that persistence is dependent on application rate, ecosystem type, and soil/sediment characteristics and that the half-life in water and in soil have wide ranges, with degradation in both cases probably overestimated due to volatility. For anaerobic sediment, one non-guideline study shows a half-life of 144 days. Bertato reported that the threshold of Annex D criteria is met.

On bioaccumulation, Bertato stated that, in combination with high toxicity, even moderate bioaccumulation is a serious concern, noting the Log Kow value of 4.7-5.2 and moderate bioconcentration factor of 440-5100 in fish. She said chlorpyrifos was also found in apex predators in remote regions, as well as in human breast milk at levels concerning for the offspring.

Reporting that while models do not predict LRET, Bertato said chlorpyrifos is widely detected in abiotic compartments, such as sea ice, air, snow, seawater, as well as in Arctic biota. She underlined that, compared to other pesticides measured in the same studies, chlorpyrifos was found more often in higher concentrations.

On adverse effects, she said there is high acute toxicity to birds and vertebrates, and even higher to invertebrates, especially bees, at very low concentrations. She drew attention to evidence of developmental neurotoxicity in *in vivo* animal studies, and available epidemiological evidence showing developmental neurological outcomes in children.

Bertato suggested chlorpyrifos fulfills all the criteria outlined in Annex D and that global action is warranted. She also pointed out that even though chlorpyrifos-methyl, on which less data is available, shows less persistence, bioaccumulation, and is less often found in the environment, it has similar toxicity and adverse effects as chlorpyrifos. She said it would be a regrettable substitution for chlorpyrifos. Bertato suggested that it might be worthwhile to collect additional information on chlorpyrifos-methyl to see if potential nomination is warranted.

Several POPRC members reported ongoing use in their countries or regions. Morales noted the challenges that would be associated with banning or restricting chlorpyrifos but supported further review, especially because of its toxicity. Kukharchyk expressed concern that without global action, the EU ban would result in chlorpyrifos being even more widely used in Belarus.

Mishra questioned evidence of adverse effects and LRET. He pointed out that chlorpyrifos is not a carcinogen and its concentrations are low, and that some of the studies in the proposal were not peer reviewed.

Harte highlighted the good technical basis of the proposal, noted sufficient evidence of adverse effects to health, and mentioned a 2020 study in Argentina that proposed the elimination of chlorpyrifos.

Sukhorebra stressed that chlorpyrifos is part of the group of phosphorus organic pesticides, and if it is banned, these other pesticides may become regrettable substitutions.

Hammond agreed that chlorpyrifos meets the requirements for persistence, LRET, and adverse effects, and pointed to the interrelation between bioaccumulation and toxicity in the studies.

Hauzenberger noted that including the reliability of the information from other authorities will help strengthen the document, especially the section on persistence in water and soil, for which she called for further information.

Hu observed that the chemical is highly toxic, but also that the criteria for persistence and bioaccumulation did not appear to be met. He underscored that all the criteria are equally important.

Hauzenberger and Tolfsen supported considering including chlorpyrifos-methyl into the scope of future work. An observer from the US objected, saying these are separate organophosphates and suggested a new nomination will have to be received to consider chlorpyrifos-methyl.

Observers from the US and China said the criteria for persistence did not appear to be met. The observer from the US questioned the use of quantitative adjustments as a "precedent setting" approach. The observer from China further noted that the bioaccumulation data reported were below the thresholds in Annex D.

An observer from Japan said the purpose of review at this stage is to identify if a chemical is a potential POP and supported further review.

IPEN called for strong global action, saying all the criteria have been met. She said the issue is more pressing in the Arctic where persistence is higher due to the lower temperatures and noted that chlorpyrifos has been found in Arctic apex predators.

The Health and Environmental Alliance said the criteria have been met, underlining that exposure has been linked to developmental neurotoxicity in children.

PAN underscored that the criteria have been met, particularly under Arctic conditions. She suggested a similar approach as in the case of dicofol, a listed POP, that the Committee agreed was persistent, even though evidence of persistence was only in low temperature regions.

Observing differing views on persistence and bioaccumulation, Chair Dawson suggested, and the POPRC agreed, to establish a contact group, chaired by Agustin Harte.

On Friday, the Secretariat introduced the draft decision and its annex (UNEP/POPS/POPRC.17/CRP.11 and CRP.23). Harte reported from the contact group, noting brackets around the conclusions on LRET.

Mishra stressed that the LRET criteria were not met, pointing to the criterion for persistence in the atmosphere. With Hu, he stated that chlorpyrifos has a short half-life in the atmosphere. He suggested that the Committee should not draw a conclusion on LRET on the basis of monitoring data showing that chlorpyrifos is found in remote regions without further research on the mechanisms for LRET, and noted that modelling did not indicate LRET. Hu noted that several of the studies used were relatively old.

Adu-Kumi, Kukharchyk, Sekota, Hauzenberger, Rauert, Tangbanluekal, Romero, Holmberg, Hammond, Morales, Tolfsen, Mujtaba, Kimbara, Frydrych, and Harte supported moving chlorpyrifos to the next stage of review. Several members said there is strong evidence of chlorpyrifos in the Arctic and Antarctic, which is very far from where the pesticide is produced or used, which they stated is clear evidence of LRET.

PAN characterized the suggestion that chlorpyrifos does not undergo LRET as "unscientific."

An observer from Switzerland said all criteria were clearly met and recalled that economic considerations are part of subsequent stages of review.

An observer from China said chlorpyrifos in the atmospheric particulate phase does not easily undergo LRET and said the criterion is not met.

An observer from India underlined that it is not appropriate to support the proposal given limited evidence of LRET.

IPEN stressed that the evidence is clear because the pesticide is a problem in the Arctic and said persistence is evident.

An observer from the UK supported the decision to move chlorpyrifos to the Annex E stage.

Chair Dawson noted that there are multiple criteria for LRET, separated with "or," which he said, based on the Convention text and past POPRC practice, shows that not all criteria need to be met for the Committee to conclude that the substance undergoes LRET. Recalling the draft LRET guidance, he said that evidence in remote regions, far from production and use, is often the basis for concluding LRET occurs. Chair Dawson asked members if they could adopt the decision.

Mishra objected and questioned if the bioaccumulation data are sufficient to meet the criterion.

Chair Dawson noted that members' comments can be included in the meeting report, and asked members if they could adopt the decision to move chlorpyrifos to the Annex E stage of review.

The decision was adopted.

Final Decision: In its final decision (UNEP/POPS/POPRC.17/CRP.11), the POPRC:

- expresses satisfaction that the screening criteria for chlorpyrifos 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 14 March 2022.

***Chlorinated paraffins with carbon chain lengths in the range C14–17 and chlorination levels at or exceeding 45% chlorine by weight*:** On Monday, the Secretariat introduced the proposal from the UK and additional information (UNEP/POPS/POPRC.17/6 and INF/5) and verification that the proposal contains the information specified in Annex D (UNEP/POPS/POPRC.17/INF/6).

An observer from the UK presented the proposal, highlighting how the chemicals fulfil the criteria for listing. On persistence, he reported that in an unpublished Organisation for Economic Co-operation and Development (OECD) study using two sediments, there was no observable transformation in 120 days and the study therefore concluded that there was very little likelihood of significant degradation occurring within 180 days. Based on this and other studies, he concluded that the Annex D criterion on persistence is met.

On bioaccumulation, the UK said this criterion is met as bioconcentration factor values exceed 5,000 for at least the C14 constituents with a chlorination level in the range 45-50%. He noted less reliable data suggesting that the C15-17 constituents may also meet the criteria. The UK highlighted biota monitoring results showing that the chemicals are widely detected in wildlife, including predators, as well as in human breast milk and other tissues.

On adverse effects, the UK presented results from laboratory studies indicating that constituents of chlorinated paraffins with C14-17 chain lengths are very toxic to aquatic invertebrates in the environment. Based on this and other studies, including on mammals, he concluded that the Annex D criterion for adverse effects is met.

On LRET, the UK concluded that the limited data available indicate that there is both a pathway and delivery of chlorinated paraffins with C14-17 chain lengths to remote locations.

The UK concluded that the data indicate that all Annex D criteria are met and proposed listing the substance under the Convention.

Holmberg and Kimbara agreed that it meets the Annex D criteria, although Kimbara also noted limited data, especially on C15-17.

Bertato supported the proposal and suggested that medium-chain chlorinated paraffins (MCCPs) with lower chlorination levels should also be included in the scope of the proposal, noting the EU has identified MCCPs as substances of very high concern. Bertato further noted that the proposal seems to cover other substances that can contain MCCPs and proposed setting a limit level for concentration of MCCPs in other substances so that these other substances can be included in the nomination.

Rauert stressed the need to discuss the scope of nomination, and highlighted some German studies showing that levels of MCCPs in the environment exceed levels of SCCPs.

Adu-Kumi reiterated his concern expressed at the preparatory stage, to the effect that SCCPs are already listed under the Convention, now MCCPs are being considered for listing, and there is therefore a need to evaluate longer chains to ensure there is no impact on human health.

An observer from Switzerland agreed that the proposal meets the criteria, noted that the definition excludes the same chain length but lower chlorination levels, and proposed reducing the levels to at least 42%. He stated isomers that could be included in the scope of the nomination were found in some whales and mussels, which indicates LRET and bioaccumulation.

An observer from the US supported that Annex D criteria are met. She noted the discrepancy between 48% chlorination level in SCCPs as listed in the Convention and 45% chlorination level in MCCPs, pointing out that if MCCPs are listed, countries will switch to SCCPs that are below 48%.

An observer from China pointed to discrepancies of biomagnification factor and trophic magnification factor in the studies used in the nomination and asked the Secretariat and POPRC to continue collecting data to clarify contradictions in the studies.

An observer from the EU expressed interest in discussing interpretation of screening tests, pointing to the need to broaden the entry and include lower chlorination levels. She also noted that instead of formulating it as chlorination level, it should be by number of free chlorine atoms.

ACAT noted that 1.1 million tons of chlorinated paraffins were manufactured in 2015, which nearly equals PCB production over six decades. She suggested there was a shift to using MCCPs after SCCPs were listed in the Stockholm Convention. She reported that MCCPs measure at higher levels than SCCPs, citing a study on breast milk concentrations conducted on five continents that found MCCPs equal to or exceeding SCCPs in 75% of the sample.

The US Council on International Business underscored that it is working to engage downstream users and take proactive action to collect data on MCCPs, which usually takes years. She suggested a non-exhaustive list and a list of CAS numbers, not just for eventual compliance and enforcement, but also to identify and phase out non-essential downstream uses.

The European Automobile Manufacturers' Association (ACEA) expressed concern about using CAS numbers, pointing out that within the same CAS number, there are both chlorinated paraffins of concern and those not of concern, depending on chlorination levels.

The World Chlorine Council said he would share the results of research undertaken by the chlorinated paraffins industry.

A contact group was established, chaired by Kukharchyk, to discuss the proposal, particularly the scope.

On Friday, the Secretariat introduced the draft decision (UNEP/POPS/POPRC.17/CRP.15) and annex (CRP.16).

Kukharchyk reported that no agreement was reached on whether C15-17 chlorinated paraffins meet the bioaccumulation criterion. She outlined two options for moving forward: Option 1, concluding that the full scope of substances in the original proposal meet the Annex D criteria; and Option 2, concluding that only C14 meets the criterion of bioaccumulation with certainty, and that screening criteria for C15-17 were less certain.

Tolfsen, Bertato, Rauert, Holmberg, and Hammond supported Option 1 noting that monitoring data are relevant for the whole group of chemicals and given the way these substances are produced as a commercial mixture, it would be more relevant to gather more evidence at the draft risk profile stage.

Hu lamented that the proposal states that the data for bioaccumulation for C15-17 "is not solid." He cited contradicting evidence and underlined that it is hard to agree that C15-17 meet the bioaccumulation criterion. As a compromise, he reaffirmed that he accepts C15-17 meet other criteria, but not bioaccumulation.

An observer from the EU noted her support for Option 1, stating that Log Kow values and monitoring data indicate bioaccumulation for C14-17, which are widespread in biota, including top predators.

ACAT underscored that MCCPs fully meet Annex D criteria, citing the evidence that when measured in breast milk, MCCP levels exceed those of SCCPs.

An observer from the UK expressed his support for keeping the original scope of their proposal, stating that with substances of unknown variable composition or biological substance (UVCB), it is impossible to have perfect data, and therefore read-across is acceptable. He said while there is some uncertainty, the bioaccumulation criterion is met. He suggested keeping the full range of MCCPs within the scope and using it as a starting point for the draft risk profile, otherwise, if only C14 is considered, it might lead to regrettable substitutions.

An observer from China said C15-17 do not meet the Annex D screening criteria and suggested the Committee set aside this part of the proposal while the UK continues collecting data.

An observer from Switzerland expressed support, saying the bioaccumulation criterion is fulfilled.

Hauzenberger underlined the uncertainty with longer chain lengths, but noted the entire proposal meets bioaccumulation criteria and that read-across and the category approach to regulating the whole group are accepted in risk assessment. She stressed her support for the full scope.

Hu warned against making hasty decisions and mislabeling substances as POPs when there is a lack of data.

Bertato, Kimbara, Hauzenberger, and Tangbanluekal supported moving the chemical forward and collecting more data at a later stage, with Bertato citing a decision on long-chain PFCAs made earlier that day with even less data available.

Hammond, supported by Tolfsen, warned that accepting Option 2 will break down the group of chemicals and change the very concept of UVCB. He said it is better to move the whole group forward. Tolfsen requested that the meeting report reflect these concerns and that only one member viewed the bioaccumulation criterion not met.

Chair Dawson proposed moving forward with Option 1 and noting in the meeting report that many members felt that the criterion on bioaccumulation was fully met. Dawson said that this would allow the proposal to move forward with the caveat of collecting more data and deciding on the exact scope at the risk profile stage, which is said is consistent with past practice.

Hu stressed that Option 2 does not preclude the proposal from moving to the next stage of review. He said that the different substances each require proper evaluation, as done in past POPRC practice.

The Committee adopted its decision.

Final Decision: In its decision (UNEP/POPS/POPRC.17/CRP.15), the POPRC:

- decides that the screening criteria have been met with certainty for chlorinated paraffins with carbon chain lengths of C14 and chlorination levels at or exceeding 45% chlorine by weight;
- notes that information relating to the screening criteria on bioaccumulation was for chlorinated paraffins with carbon chain lengths in the range C15–17 was less certain, and that, however, the information relating to the remaining screening criteria specified in Annex D was conclusive, and decides that more detail on bioaccumulation data should be included in the draft risk profile;

- 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;
- decides issues related to chlorinated paraffins with carbon chain lengths in the range C14–17 and chlorination levels at or exceeding 45% chlorine by weight should be dealt with in developing the draft risk profile; and
- invites parties and observers to submit to the Secretariat, before 14 March 2022, the information specified in Annex E.

***Long-chain perfluorocarboxylic acids (LC-PFCAs), their salts and related compounds*:** On Monday, the Secretariat introduced the proposal from Canada (UNEP/POPS/POPRC.17/7) and verification that the proposal contains the information specified in Annex D (UNEP/POPS/POPRC.17/INF/6).

Hammond presented the nomination, focusing on the scope, use, and data for the longer chain lengths. On persistence, he reported no degradation under environmentally-relevant conditions. On bioaccumulation, he reported measurements of PFCAs up to C18 in predator species. He said there is a long half-life in humans for C9-C11.

On LRET, he observed presence in remote areas from atmospheric and oceanic transport of the volatile related compounds and of the acids themselves. He noted measurements of related compounds in ambient air and seawater in regions around the world, including remote regions.

He relayed adverse effects including hepatotoxicity, thyroid toxicity, developmental and reproductive toxicity, and immunotoxicity in animal models. He said there is animal data available for C9-C14, which have also been detected in human biomonitoring studies. Hammond reported increasing temporal concentration trends in top predator wildlife species for C9-C15.

On the scope, Hammond shared patent application information, using the example of a fluorinated lubricant additive that describes the chain length as "1 to about 20 fluorinated carbons." He explained that carbonyl carbon will be produced at the top range of the chain length, which brought the total in the nomination to 21 substances.

Regarding a suggestion that industries are moving away from this chemical, Hammond presented studies that found LC-PFCAs were present in cosmetics, automotive care products, children's car seats, and anti-fog products. He cited ongoing releases in industrial areas, waste treatment facilities, and land application of biosolids. Concluding, Hammond acknowledged analytical challenges at the upper end of the range.

On Tuesday, members and observers commented on the proposal. Many considered the Annex D criteria to be met, but noted limited information on some chain lengths and called for discussion on scope.

Kimbara noted that there is no data on C19-21 and asked if these should be considered at the next stage of review.

Hauzenberger highlighted that some of the longer chain lengths are also PFOA-related and, with Bertato, said this should be considered to avoid double regulation. She stated that the bioaccumulation data for chain lengths longer than C17 could be included in the next stage of the review. On adverse effects, she said the structural similarities argument is enough to conclude that the criteria are met.

Bertato noted less information on LRET for longer chain lengths and said this could be addressed at the next stage of the review, suggesting a read-across approach if data are not available. She asked if the ongoing use reported for consumer products was intentional or represents impurities.

Hu observed the lack of data for C19-21. He questioned if nominations should be submitted with limited information or no information on production, saying it increases the Committee's workload to review chemicals that are not being produced.

Holmberg expressed appreciation for the wide scope of chemicals included in the nomination, but noted data limitations for the longer-chain lengths, particularly regarding toxicity and bioaccumulation.

Tunniit Community Organization underscored the disproportionate exposure and health effects on Inuit peoples from PFCAs, in addition to PCBs and mercury.

An observer from the US agreed that the Annex D criteria are met and suggested addressing the uncertainties around the longer chain lengths at the next stage of review. She called for further information on production and use.

An observer from China observed that there is a lack of data for C9-14 and C16-18. She said there is little information on direct sources, and the C9 and aluminum salts detected may be impurities, which she suggested is not the focus of the Convention. She requested clarification on the production and use of C9-C21, and said the Committee should consider whether to include these chain lengths in the absence of such information.

IPEN appreciated that the chemicals are treated as a group and hoped that this approach could be applied moving forward. She underscored the need to include the full range of chain lengths in keeping with the precautionary approach of the Convention and the structural similarity of these substances.

The ICC expressed concerns about the high prevalence of PFCAs across the circumpolar Arctic. She highlighted recent findings including that PFCA concentrations in pregnant women in Nunavut are higher than for PFOA.

An observer from Switzerland acknowledged the limited evidence for bioaccumulation and adverse effects for chains longer than C18 and said the shorter chained PFCAs meet the criteria. He proposed, and Rauert supported, that the longer chain PFCAs could be reviewed while preparing the draft risk profile.

An observer from Sweden congratulated Canada and noted that the proposal is almost at the risk-profile stage, agreeing that the Annex D requirements are fulfilled. He noted that data gaps in the dataset for higher homologues C15-C17 could be overcome by read-across or by obtaining new data, and acknowledged lack of data on C19 and C21, noting these substances should be kept within scope since there is an option to get more data at the risk profile stage as C19 and C21 are widely used in products.

Plastics Europe pointed out there was and is no intentional use of the discussed compounds, and they are all by-products of C8 or PFOA-related telomeric products. He said with the finalization of the US Environmental Protection Agency Product Stewardship programme, the industry has developed alternatives and developed C6-based products that may contain long-chain products only at non-detectable levels.

Chair Dawson summarized the discussion and noted that key issues are scope and longer chain members of the group. A contact group was established, chaired by Syed Mujtaba Hussain (Pakistan).

On Friday, the Secretariat introduced the draft decision (UNEP/POPS/POPRC.17/CRP.6) and annex to the draft decision (CRP.7).

Hu expressed concern about including longer chains (C19-21) in the scope of the decision, saying it is risky to extrapolate the data and label these substances as POPs while the criteria are not sufficiently met because there is an absence of data.

Bertato supported the decision, agreeing that there is less data on longer chains, but noting for this stage of review, the read-across method is justified. She said the Committee can consider data on longer chains at the risk profile stage.

Tolfsen, Sekota, IPEN, and an observer from France supported moving to the next stage for the full range of chains.

The Russian SCRC noted although she agrees there is a lack of evidence for longer chains, she supports moving to the next stage of review.

An observer from China supported deferring a decision on longer chains (C19-21) until more data are available.

An observer from the US, echoed by observers from the UK, France, and Switzerland, supported adopting the full scope of the proposal, noting that more data will be collected at the Annex E stage where, if data uncertainty persists, the scope can be narrowed following existing precedents.

Hu agreed to the full scope in the proposal as a compromise, stressing that if there is no data on C19-21 at the Annex E stage they should be excluded from the scope. He underscored that the Committee is setting a dangerous precedent if it moves forward substances with no available data and no information on commercial production.

Adu-Kumi supported validity of the extrapolation method when the data for some chains are not available, and said he is glad to move this proposal to the next stage of review.

Final Decision: In its decision, (UNEP/POPS/POPRC.17/CRP.6), the POPRC:

- decides it is satisfied that the screening criteria have been fulfilled for LC-PFCAs, their salts and related compounds;
- decides to establish an intersessional working group to review the proposal further and to prepare a draft risk profile in accordance with Annex E;
- invites parties and observers to submit to the Secretariat, before 14 March 2022, the information specified in Annex E for PFCAs that have the molecular formula $C_nF_{2n+1}CO_2H$ in which $8 \leq n \leq 20$ and their salts, and any substance that consists of a perfluorinated alkyl group that has the molecular formula C_nF_{2n+1} in which $8 \leq n \leq 20$ and that is directly bonded to any chemical moiety other than a fluorine, chlorine or bromine atom; and
- requests the Secretariat to make available to parties and observers a non-exhaustive list of CAS numbers for LC-PFCAs, their salts and related compounds.

Review of information related to specific exemptions for decabromodiphenyl ether and short-chain chlorinated paraffins: On Tuesday, the Secretariat introduced the review of information related to specific exemptions for deca-BDE and SCCPs (UNEP/POPS/POPRC.17/8) and on a draft workplan for the review (UNEP/POPS/POPRC.17/INF/12).

Kukharchyk characterized the workplan as realistic for the ongoing work.

An observer from the US said she looks forward to participating in the intersessional working group.

The decision was adopted.

Final Decision: In its final decision (UNEP/POPS/POPRC.17/8), the POPRC:

- invites parties and observers to provide to the Secretariat, by 15 March 2022, information on the composition of commercial chlorinated paraffins that include homologues with C10–C13 chain length;
- invites parties listed in the register for specific exemptions for decaBDE to provide to the Secretariat, by 15 March 2022, additional information to justify the need for the registration of such exemptions, including on: production; uses; efficacy and efficiency of possible control measures; information on the availability, suitability and implementation of alternatives; status of control and monitoring capacity; and any control actions taken at the national or regional levels; and
- decides to establish intersessional working groups on decaBDE and on SCCPs to update the reports on the review of information related to specific exemptions for those chemicals, for consideration by COP11.

Process for the evaluation of perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride pursuant: On Tuesday, the Secretariat introduced notes on the process for the evaluation of PFOS, its salts and PFOSF (UNEP/POPS/POPRC.17/9), and on draft terms of reference for the assessment of alternatives (UNEP/POPS/POPRC.17/INF/13).

Hauzenberger welcomed the sulfuramid section, saying it will facilitate evaluating consumption and production in detail.

Hu agreed with the proposed action, but expressed concern about whether the information submission process will ensure that potential replacements are not potential POPs.

An observer from the US encouraged parties to submit information on relative suitability and accessibility of alternatives, as well as an overview of capacity-building needs for transition to such alternatives. She questioned if there should be reference to screening alternatives for POPs characteristics and suggested asking about broader human health and environmental implications instead.

The Russian SCRC also underlined the need to avoid regrettable substitutions and to identify effective, non-toxic, and affordable alternatives.

Rodas supported including information on health aspects of available alternatives.

Hauzenberger, Frydrych, Hammond, IPEN, and an observer from South Africa underscored the need to refer to Annex D and POPs characteristics, referring to the mandate of the Committee and the Stockholm Convention, and the need to avoid regrettable substitutions. An observer from the Netherlands suggested using the wording that was previously agreed to review alternatives to PFOS.

Chair Dawson clarified the report will include a discussion on potential alternatives. He noted that, at POPRC-18, members can decide on how to move forward with the issue of potential substitutes.

The Committee adopted its decision.

Final Decision: In its final decision (UNEP/POPS/POPRC.17/9), the POPRC:

- invites parties and observers to provide to the Secretariat, by 15 March 2022, information on PFOS, its salts and PFOSF using the form set out in the terms of reference for the assessment of alternatives;
- decides to establish an intersessional working group to undertake the evaluation; and
- agrees to work in accordance with the terms of reference for the assessment of alternatives.

Indicative list of substances covered by the listing of perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds: On Tuesday, the Secretariat introduced notes on the indicative list of substances covered by the listing of PFOA, its salts

and PFOA-related compounds (UNEP/POPS/POPRC.17/10), and an updated indicative list of substances covered by PFOA, its salts and PFOA-related compounds (UNEP/POPS/POPRC.17/INF/14).

An observer from Japan noted that countries use the list differently, some as a guidance and others, as the basis for domestic regulatory action, which he said in Japan could involve financial penalties and imprisonment. He requested changing the name to "draft indicative list," rather than "indicative list." He also suggested inviting comments on the modalities for updating the list.

An observer from the US supported the development and periodic updating of the list. She reported from the US review of the list that the substances in Table 1 meet the definition of PFOA-related compounds, except for two entries, while substances listed in Table 2 do not, and polymers and mixes with no defined structure could not be assessed. She reported from an automated process trialed in the US to list PFAS substances and stressed the need for unambiguous structure definitions.

Plastics Europe expressed concern about the definition used for fluoropolymers, saying that it may not cover the entire range that Plastics Europe members are manufacturing and placing on the market.

ACEA stressed the need for CAS numbers to allow industry to remain compliant. He called for the list to be an exhaustive, not indicative, list, that could be periodically re-opened as needed. ETH Zurich said an exhaustive list is not possible because there could be thousands of substances, particularly if transformation pathways are included.

An observer from China called for caution in adding new chemicals, noting that many substances on the list are not industrially produced and therefore lack data. She called for information on the transformation pathways of the environmental behavior of relevant substances.

Mujtaba supported further work on the list and the transformation pathways.

Harte disagreed that the list should be considered a draft. He underscored that it is indicative and would be updated periodically, noting the COP already discussed this. He recalled that the POPRC's mandate is to review and comment on the list, not approve it.

Chair Dawson noted that the COP has the task of updating the list. He suggested that the Secretariat prepare a draft decision that could include a recommendation to the COP regarding how to update the list.

On Friday, the Secretariat introduced the draft decision (UNEP/POPS/POPRC.17/CRP.3).

Holmberg noted that the exemption for fluoropolymers has been extended and is quite specific. She stressed the need to ensure that in the production of polymers impurities are not high.

Final Decision: In its decision (UNEP/POPS/POPRC.17/CRP.3), the POPRC:

- requests the Secretariat to make available the updated indicative list of substances covered by the listing of PFOA, its salts and PFOA-related compounds on the website of the Stockholm Convention in an easily accessible manner;
- recommends 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; and
- also recommends that the COP consider requesting the Secretariat, in consultation with the Committee, to take this information into account for the purpose of further updating the indicative list, and to make the updated indicative list available on the Convention website.

Long-range environmental transport: On Tuesday, the Secretariat introduced a note on LRET (UNEP/POPS/POPRC.17/11), a draft guidance (UNEP/POPS/POPRC.17/INF/15), a draft workplan for the development of the draft guidance (UNEP/POPS/POPRC.17/INF/16) and the related comments and responses (UNEP/POPS/POPRC.17/INF/19).

Timo Seppälä (an observer from Finland) presented the document, outlining the drafting process, which included consultations with three experts who produced scientific summaries of the relevant Annex D criteria. He said these summaries, as well as previous decisions of the POPRC on Annexes D and E, informed the first draft outline which received more than 500 comments. Moving forward with the second draft, he identified further questions to be considered, including:

- initial definition of transport processes covered by the Convention;
- how to consider the influence of climate change on POPs;
- whether to include further Annex E considerations; and
- how existing science can be applied.

He highlighted that the issues of microplastics and release of plastic additives were separated, and local sources were differentiated from LRET. He also asked for views on how to reflect use of models and on depth and level of detail for the document, as well as whether it should be a living document.

Hu observed that the POPRC is not a research committee, but a review body that evaluates whether a particular chemical is a POP and bases such decisions on published reports and results. He noted that, from the consultation with three experts, a lot of research is ongoing, and several conclusions are uncertain.

Frydrych pointed out that the document can facilitate and guide the work of the POPRC. She supported the idea of a living document with the possibility of updates based on the latest available information. She stressed that the POPRC should not wait for adoption of the LRET guidance before making a decision on UV-328, and rather use UV-328 to add to this document.

Rauert supported including separate issues on transport of microplastics and plastic additives, as well as the issue of model application.

Tolfsen stressed that the POPRC should evaluate chemicals on a case-by-case basis. She said the document should be a compilation of information and POPRC decisions. She supported limiting the scope to Annex D. With Kukharchyk and an observer from Japan, she expressed concerns about the title, as "guidance" may have implementation or legal connotations.

Harte noted that the document should be science-based, focusing on practical aspects of LRET assessment in new chemicals. He suggested a living document could be problematic, and that the POPRC needs to agree on the text that can further be updated and improved.

Kukharchyk pointed out that the document presents available knowledge on LRET, its mechanisms, factors, and models, as well as experience of previous POPRC decisions. She supported continuation of work without increasing its scope.

An observer from the US expressed concern about addressing plastic debris and microplastics in the document, given that discussions are ongoing.

CEFIC noted the science is evolving quickly. He said the guidance should help identify what is and is not subject to LRET and distinguish between local sources and LRET. He underscored

that not all plastics are equal and noted a recent study that concluded that LRET via microplastics is not a relevant process. He urged not acting prematurely on current proposals, given the ongoing work on the guidance.

An observer from Canada suggested additional interpretive guidance on issues such as: factors weighed in determining LRET; histories of use; analytical sensitivities; interpretation of monitoring results; and interpretation of unknowns and uncertainties.

IPEN suggested the guidance should not be too extensive given that the guidance has not played a role in any chemical evaluated to date and called for including additional references on the role of plastics in oceanic LRET of POPs, which she said she will provide.

An observer from the UK supported the guidance on the scope of issues typically raised. He said the document cannot be open-ended, but should be finalized with a process to update when needed.

An observer from Switzerland said this will be useful for future nominations, but stressed the need to assess chemicals on a case-by-case basis. He agreed that the process should not be open-ended.

Chair Dawson suggested adopting the decision, with two minor amendments to: change the references to "guidance" to "document"; and for intersessional work to take into account the inputs received at this meeting.

The decision was adopted as amended.

Final Decision: In its final decision (UNEP/POPS/POPRC.17/11) as orally amended, the POPRC requests the intersessional working group on LRET to further develop the draft document.

Workplan for the Intersessional Period

On Friday, the Secretariat introduced the draft workplan (UNEP/POPS/POPRC.17/12), noting that the dates of the next meeting are tentative.

Tolfsen requested four weeks for the third drafts and for comments each. With that change, the POPRC adopted the workplan.

Venue and Date for POPRC-18

On Friday, the Secretariat announced that POPRC-18 is tentatively scheduled for 26-30 September 2022 in Rome, Italy. Chair Dawson noted that the dates are tentative and depend on venue availability. He noted the meeting will be held back-to-back with the meeting of the Rotterdam Convention's Chemical Review Committee.

Closure of the Meeting

The POPRC adopted the report (UNEP/POPS/POPRC.17/L.1).

An observer from the US recalled that the COP mandated the POPRC to provide a technical review according to the relevant annexes and not consider policy or timing issues in its deliberations. She expressed disappointment that the views of members were overlooked to rush a decision to the COP to facilitate a faster listing.

An observer from Japan lamented that a decision was taken on the basis of scheduling of the COP rather than science.

Chair Dawson thanked delegates for their diligent work over the week, particularly those participating online in various time zones around the world.

Rolph Payet, BRS Executive Secretary, expressed his thanks to all participants for their efforts and a successful meeting.

Chair Dawson gaveled the meeting to a close at 6:47 pm CET (UTC+1).

A Brief Analysis of POPRC-17

Science and the precautionary approach are pillars of the global response to persistent organic pollutants (POPs) and fundamental to the functioning of the Stockholm Convention's POPs Review Committee (POPRC). As a committee of experts tasked with reviewing substances for possible POP characteristics, the POPRC has a reputation for sound scientific review undertaken in a "flexible and integrated manner" and in line with the precautionary approach, as the Convention requires. POPRC members often have to contend with new data, uncertainty, and the question of when to recommend action in the absence of certainty, in line with the precautionary approach.

Over the past two years, POPRC members, like everyone else, have had to grapple with the challenges posed by the pandemic. However, at POPRC-17, the Committee proved nimble, meeting in a hybrid format and adopting decisions that advanced every chemical on its ambitious agenda. Several of these decisions were hard won, as members grappled with the question of how much scientific data is sufficient to advance a review of a substance.

This brief analysis considers how POPRC members completed the Committee's reviews, struggling with long-standing questions of scope and uncertainty, while potentially setting new precedents for the Stockholm Convention.

A Question of Scope

The scope of a nominated chemical dictates what precisely is reviewed and, potentially, listed in the Convention. Scope is a question that the Committee regularly confronts when they consider commercial mixtures or groups of chemicals that are so closely related through complex relationships that it may be impossible to tease out the effects of one chemical from the others in the group. The question had renewed salience at POPRC-17, specifically for the proposals for "medium-chain" chlorinated paraffins (MCCPs) and long-chain perfluorocarboxylic acids (PFCAs).

The use of this group approach to listing seems to be more popular as the Committee and Convention address large families of chemicals attracting concern. Chlorinated paraffins are a large group of chemicals used as plasticizers, flame retardants for plastics, fabrics, paints and coatings, and additives to paints, coatings and sealants to improve their resistance to chemicals and to water. Short-chain chlorinated paraffins are already listed in the Convention, after a decade-long review by the POPRC. Perhaps being used as a regrettable substitution for SCCPs, MCCPs are now suspected to be produced in much higher volumes.

Long-chain PFCAs are part of the per- and polyfluoroalkyl substances (PFAS) chemical family, dubbed "forever chemicals" by the media and movements calling for their regulation. Over 4,700 chemicals in the group are found in a range of products, from firefighting foams and food packaging to cosmetics and textiles (including carpets, furniture, and clothing). Two other PFAS-related groups have already passed POPRC review. Perfluorooctanoic acid (PFOA) is listed, with a long indicative list of related chemicals that may continue to grow. Perfluorohexane sulfonic acid (PFHxS) could be addressed later this year, following the POPRC's agreement to recommend that production and use be eliminated.

The nominations at POPRC-17 presented unique questions about how much information the POPRC requires on the individual chemicals in the groups. Ultimately, the POPRC took different decisions for the two nominations. The full scope of MCCPs was moved to the Annex E stage, while C14 was the only substance moved forward for the long-chain PFCAs. Similar concerns were

raised about a lack of data. Both nominations involved a "read-across" of the properties of structurally similar chemicals, where the evidence of the effects of one chemical is used to extrapolate the effects of another. Some members supported further use of this method to deal with uncertainties and unavailable data. Others noted that confidence decreases further up the chain, particularly for long-chain PFCAs, leading to questions about whether the longest chain PFCAs meet toxicity and bioaccumulation criteria.

In the past, members have said the Annex D stage identifies "suspected POPs" that require further scrutiny. At the next stage of review, the Annex E stage, the POPRC has traditionally handled issues of scope, sometimes expanding to include related chemicals, or narrowing to specify only the congeners that are indeed POPs. For some members, allowing a wide scope at the Annex D stage would facilitate subsequent information gathering on MCCPs and long-chain PFCAs. Others, preferring a narrower scope, worry that the Committee could set a precedent for moving forward with chemicals with no or insufficient data showing POPs characteristics. For the longest chain PFCAs, there were also questions of whether they were intentionally produced, or were impurities, which raised questions if POPRC should review chemicals because they may not represent a concern if they are not produced or intentionally used.

The divergent decisions do not provide clear guidance moving forward on the applicability of the read-across approach. The read-across approach may be used more for subsequent group nominations, meaning the Committee may again have to confront the question of how much information, and how much confidence in extrapolation, is enough to move ahead. But, as several members underlined during POPRC-17, reviews are always on a case-by-case basis.

Uncertainty and Precaution

A range of issues at POPRC-17 illustrated how the Committee makes decisions amid uncertainty. The precautionary approach enshrined in the Stockholm Convention underscores that a lack of full scientific certainty should not preclude a proposal from moving forward. But there is a difference between uncertainty and a lack of data or data that indicates the POPs criteria are not met. The line is not as simple, as the scope discussion showed. The Dechlorane Plus and UV-328 discussions walked that line as the Committee strove for consensus.

For Dechlorane Plus, a flame retardant for plastics, the main question was whether the available data shows sufficient evidence of significant adverse effects, as required by Annex D. Several members felt that the proposal met this criterion. They had the same view at POPRC-16 when the Committee decided to wait before moving forward. With little new data since the last meeting, however, some members still questioned if there was evidence of significant adverse effects, particularly on human health. The existing evidence draws on high-dose laboratory studies, which may not be analogous to environmental conditions. But there is limited monitoring data. Word of an upcoming study from the UK, that should yield results in the summer, sparked considerable interest.

Some members preferred to wait for those results and consider Dechlorane Plus at POPRC-18. But the clock was against them. A one-meeting delay would mean that the chemical would be considered by the Conference of the Parties (COP) in 2025, not 2023. For several Committee members, urgency was crucial given the potential for production and use to increase. They were ready to conclude that due to its adverse effects and long-range environmental transport, Dechlorane Plus is a POP and global action is warranted.

The POPRC ultimately went with this view, but with unusual caveats. The Committee agreed to consider the information in the UK study when it becomes available and revise the risk profile if necessary. This approach was only used once before, for octa-BDE, when POPRC-3 asked for further information on risk estimations and bioaccumulation, and agreed to update the risk profile if necessary. It was a risky move, some felt, given the uncertainty. It worked then and octa-BDE was ultimately listed in the Convention. But what if the UK study is inconclusive? There is no process to send a chemical back to a previous stage. The bell cannot be unrung. Others were far more confident that the Committee made the right decision given all available evidence, especially in light of the precautionary approach.

For UV-328, a stabilizer used in plastics and other products, the precautionary approach was also explicitly invoked to assuage some members' concerns. Other members, and the Swiss proponents of the nomination, stressed that there was, to them, no uncertainty to warrant relying on the precautionary approach.

The debate was whether UV-328 undergoes long-range environmental transport (LRET). To be listed under the Convention, a chemical must have the potential to be transported outside the country or territory where it was used or released. Usually, this is inferred from the presence of the chemicals in remote areas, where they were never produced or used. It is not always necessary to definitively identify the mechanism of transport. The Convention identifies three mechanisms of transport: air, water, and migratory species. Previous POPRC reviews concluded that POPs could attach onto aerosols.

Now the Committee is considering a new vehicle: plastic debris. In the discussions on UV-328, the issue was whether plastics can be a mode of transporting the chemical to remote regions. For UV-328 the mechanism matters because plastics are everywhere, complicating any conclusion drawn from presence of the chemical in remote regions. The detected UV-328 could have originated from plastics used locally. In other words, plastics could be a local source of UV-328 or a mechanism to transport the chemical through LRET.

The draft risk profile on UV-328 states that UV-328 is considered to have the potential for LRET "via aerosols, plastic debris and migratory birds." There was pushback from several participants, not only to listing UV-328, but also to identifying plastics as one of the LRET mechanisms. For some, although they did not oppose moving UV-328 to the next stage in the listing process, they preferred simply identifying the potential for LRET by "air, water, or migratory species," as stated in the Convention. They noted that transport via floating plastic debris is still transport by water, and through ingestion of plastics by seabirds is transport by migratory species, and therefore the Convention language sufficiently addresses both situations. While some felt that the case "connected all the dots" to show that plastics containing UV-328 were (at least plausibly) a vehicle for LRET, others remained less certain.

In the end, the POPRC agreed that UV-328 is a POP warranting global action due to its LRET and adverse effects. This could set a precedent. There are other UV additives that are similar to UV-328, and in fact, some members believed that the nomination could have been for the entire group of chemicals. But data on those additives is currently scarce. Some members noted that many chemicals in plastics would not meet the POPs criteria, limiting any potential precedent this decision may set.

From POPRC to the COP, and Beyond

It was inescapable how many times plastics entered POPRC's conversations. Several chemicals linked to the PFAS group, and Dechlorane Plus and UV-328 are used in plastics. Some chemicals already listed in the Convention are used in plastics. As the UN Environment Assembly considers whether to begin negotiations for a new treaty on marine plastic litter later this year, the Stockholm Convention is already considering the chemicals within the products that are now ubiquitous in our lives and the environment.

More immediately, based on the POPRC's recommendations, the COP will consider two chemicals when it convenes in June 2022. From this meeting, methoxychlor will be proposed for listing in Annex A, eliminating its production and use. PFHxS is a group of chemicals that POPRC-15 recommended for elimination, without any exemptions. The COP's consideration of PFHxS may be difficult, as the substance is used in firefighting foams, among other things. While the POPRC agreed that safer alternatives are available, the COP is where political and economic issues truly enter the fray and occasionally lead to amending POPRC's recommendation to allow some continued uses in the short-term.

In these deliberations, the COP is expected to adopt the hybrid working modality trialed at POPRC-17. Those who attended both in person and online agreed it was almost seamless. Some online participants noted that documents were processed and released according to timelines set in Europe, meaning some participants online had little time to wake up, grab a coffee, and read the revised text before their 4:30 am start. Time zones are still very real, despite all the innovations. The Secretariat is now tasked with scaling up the POPRC pilot to the TripleCOP that includes the Stockholm, Rotterdam and Basel Conventions, which traditionally attracts roughly 3000 participants, a tenfold increase from POPRC-17.

POPRC-17 worked through old questions of scope and uncertainty that appeared under new guises, as case-by-case reviews of chemicals continue to present new challenges. The POPRC has never set aside a chemical, concluding that it did not meet the criteria. In part, this may because proponents ensure they only bring forward chemicals that are likely to be POPs, but some wonder if the Committee is reluctant to set aside a chemical that may harm human health and the environment. Ultimately, whether its actions in light of uncertainty are seen to have exceeded the bounds of the Convention or its usual practices, is for the COP to decide.

Upcoming Meetings

Joint Meeting of the Bureaux of the Conferences of the Parties to the Basel, Rotterdam and Stockholm Conventions: The bureaux of the Conferences of the Parties to the Basel, Rotterdam and Stockholm Conventions will meet to discuss the organization of the face-to-face segment of the 2021/2022 meetings of the Conferences of the Parties. Participants not able to attend the meeting in-person can participate through a secure online connection. **dates:** 1-2 February 2022 **location:** Geneva, Switzerland **www:** synergies.pops.int/

UN Environment Assembly (UNEA-5.1): The resumed session of UNEA will consider whether to launch negotiations for a treaty on marine plastics and for a science-policy interface for chemicals, among other issues. **dates:** 28 February-2 March 2022 **location:** Nairobi, Kenya **www:** unep.org/environmentassembly/unea5

Second Segment of the Fourth Meeting of the Conference of the Parties to the Minamata Convention on Mercury (COP-4.2): The in-person segment of COP-4 will resume the meeting opened at the virtual segment (COP-4.1) in 2021. Parties will consider the effectiveness evaluation and amendments to Annexes A and B proposed in advance of COP-4. COP-4.2 will also discuss the 2023 programme of work and budget. **dates**: 21-25 March 2022 **location**: Bali, Indonesia **www**: mercuryconvention.org/en/meetings/cop4

Twelfth meeting of the Open-ended Working Group of the Basel Convention: The face-to-face segment of the OEWG of the Basel Convention will conclude negotiations that began during an online segment held on 1-3 September 2020. **dates:** 4-6 April 2022 (TBC) **location:** Nairobi, Kenya **www:** basel.int

Basel COP-15, Rotterdam COP-10 and Stockholm COP-10: The face-to-face segments of the 15th meeting of the COP to the Basel Convention, 10th meeting of the COP to the Rotterdam Convention and 10th meeting of the COP to the Stockholm Convention will convene back-to-back and include a high-level segment. **dates:** 6-17 June 2022 **location:** Geneva, Switzerland **www:** synergies.pops.int/

62nd Meeting of the GEF Council: The next meeting of the Council will be preceded by the Global Environment Facility civil society consultations. **dates**: 20-24 June 2022 **location**: TBC **www**: thegef.org/events/62ndgef-council-meeting

Eighteenth Meeting of the Chemical Review Committee: CRC-18 will review chemicals and pesticide formulations and make recommendations to the COP for listing substances in Annex III to the Rotterdam Convention. **dates:** September or October 2022 (TBC) **location:** Rome, Italy **www:** pic.int/

Eighteenth Meeting of the Persistent Organic Pollutants Committee (POPRC-18): POPRC-18 will consider, *inter alia*: the draft risk profiles for chlorpyrifos, Chlorinated paraffins with carbon chain lengths of C14 and chlorination levels at or exceeding 45% chlorine by weight, and long-chain perfluorocarboxylic acids (LC-PFCAs), their salts and related compounds; and the draft risk management evaluations UV-328 and Dechlorane Plus. **dates:** 26-30 September 2022 (TBC) **location:** Rome, Italy **www:** pops.int

For additional upcoming events, see sdg.iisd.org/

Glossary

ACEA	European Automobile Manufacturers' Association
ACAT	Alaska Community Action on Toxics
BRS	Basel, Rotterdam, and Stockholm Conventions
CEFIC	European Chemical Industry Council
COP	Conference of the Parties
ICC	Inuit Circumpolar Council
IPEN	International Pollutants Elimination Network
LC-PFCAs	Long-chain perfluorocarboxylic acids
LRET	Long-range environmental transport
MCCPs	Medium-chain chlorinated paraffins
PAN	Pesticides Action Network
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonic acid
PFOSF	Perfluorooctane sulfonyl fluoride
POPs	Persistent Organic Pollutants
POPRC	Persistent Organic Pollutants Review Committee
SCCPs	Short-chain chlorinated paraffins
SCRC	Stockholm Convention Regional Centre
UVCB	Unknown variable composition or biological