POPRC-20 FINAL

IISD Earth Negotiations Bulletin

Earth Negotiations Bulletin

A Reporting Service for Environment and Development Negotiations

Vol. 15 No. 313 **Online at: enb.iisd.org/stockholm-convention-pops-review-committee-20** Monday, 30 September 2024

Summary of the 20th Meeting of the Persistent Organic Pollutants Review Committee: 23-27 September 2024

Persistent organic pollutants (POPs) are an especially dangerous set of chemicals. They are toxic, bioaccumulate, persist in the environment, and travel to remote areas. Before many POPs were identified and regulated, their long life and effectiveness made them useful industrial chemicals and pesticides. At the same time, chemicals continue to be identified as POPs. As a result, some stockpiles and products still contain these chemicals. This is why the Stockholm Convention on POPs manages their entire lifecycle: production, use, disposal, and steps in between.

The POPs Review Committee (POPRC) provides scientific and technical advice to support this lifecycle approach. Originally, the POPRC's role was to identify new POPs using the Convention's criteria and to recommend whether the POP should be eliminated or restricted and whether any short-term, ongoing uses may be required. Over its 20-year history, parties to the Convention entrusted the POPRC with additional work, including assessing the need for continued uses and addressing POPs in stockpiles, products, and waste.

At POPRC-20, several issues highlighted the complexities of eliminating POPs from increasingly complex global supply chains. Recommendations to list new chemicals in the Convention all involved discussions related to exemptions that would allow some ongoing uses and how to handle the downstream implications of those uses. In the end, POPRC members agreed to recommend listing the following chemicals in Annex A of the Stockholm Convention (elimination):

- chlorinated paraffins with carbon chain lengths in the range C14-17 and chlorination levels at or exceeding 45% chlorine by weight (medium-chain chlorinated paraffins, MCCPs), with a range of exemptions specified with different expiry dates. The decision also includes a management strategy to disclose and phase down the production of MCCPs with chlorination levels below 45%;
- long chain perfluorocarboxylic acids, their salts and related compounds (LC-PFCAs), with exemptions for semiconductors designed for replacement parts (for five years), including those used in combustion engine-powered vessels and out-of-production motor vehicles (until 2041 or the end of life, whichever is sooner); and
- chlorpyrifos, with exemptions for plant protection for controlling some pests on specific crops and ticks in cattle, and wood preservation against borers and termites in building foundations.

The POPRC agreed that a proposal on polyhalogenated dibenzo-p-dioxins and dibenzofurans (PXDD/Fs) met the Annex D criteria, establishing intersessional work to develop a draft risk profile.

The POPRC also adopted decisions recommending further work by the Conference of the Parties (COP) to address POPs in stockpiles, products, articles in use, and waste, and consider removing the recycling exemption for bromodiphenyl ethers (BDEs).

POPRC-20 convened from 23-27 September 2024 at the headquarters of the Food and Agriculture Organization of the United Nations (FAO) in Rome, Italy. Attendees included 30 members and 110 observers from parties, UN bodies, intergovernmental bodies, NGOs, and a Stockholm Convention regional centre.

There are 31 members of the Committee: Karina Miglioranza (Argentina), Artak Khachatryan (Armenia), Valentina Bertato (Belgium), Bertin Dossa Bossou (Benin), Joswa Aoudou (Cameroon), Andrew Beyak (Canada), Cecilia Andrea Aburto Schweitzer (Chile), Xuezhi Xiao (China), Boris Ávila Taborda (Colombia), Katarína Řiháčková (Czech Republic), Thabile Ndlovu (Eswatini), Timo Seppälä (Finland), Lamin Jaiteh (the Gambia), Caren Rauert (Germany), Suresh Lochan Amichand (Guyana), Ved

In this Issue

This issue of the *Earth Negotiations Bulletin (ENB)* © <enb@iisd.org> is written and edited by Jennifer Allan, Ph.D., Marc Calabretta, and Anna Dubrova. The Digital Editor is Matthew TenBruggencate. The Editor is Pamela Chasek, Ph.D. <pam@iisd.org>. The ENB is published by the International Institute for Sustainable Development (IISD). The Sustaining Donor of the *Bulletin* is the European Union (EU). General support for ENB during 2024 is provided by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV), the Japanese Ministry of Environment (through the Institute for Global Environmental Strategies - IGES), the New Zealand Ministry of Foreign Affairs and Trade, the Government of Switzerland (Swiss Federal Office for the Environment - FOEN), and SWAN International. Specific funding for the coverage of this meeting has been provided by the BRS Secretariat. The contents of this report are the sole responsibility of the authors and can under no circumstances be regarded as reflecting the position of the donors or IISD. Generative AI was not used in the production of this report. Excerpts from ENB may be used in non-commercial publications with appropriate academic citation. For information on the *Bulletin*, including requests to provide reporting, contact the ENB Lead, Jessica Templeton, Ph.D. <jtempleton@iisd.org>.

Prakash Mishra (India), Witta Kartika Restu (Indonesia), Kazuhide Kimbara (Japan), Mohammed Khashashneh (Jordan), John Mumbo (Kenya), Martien Janssen (Netherlands), Peter Dawson (New Zealand), Hassan Azhar (Maldives), Magdalena Frydrych (Poland), Doaa F.Y Abdallah (State of Palestine), Bondi Nyuma Gevao (Sierra Leone), Andreas Buser (Switzerland), Razaz Ibrahim Mohamed (Sudan), Victorine Pinas (Suriname), Chalongkwan Tangbanluekal (Thailand), and Nosiku Munyinda (Zambia).

A Brief History of the POPRC

During the 1960s and 1970s, the use of chemicals and pesticides in industry and agriculture increased dramatically. This upward trend continues today. 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 infant and child development.

POPs are chemical substances that persist in the environment, bioaccumulate in living organisms, and adversely affect human health and the environment. POPs are capable of long-range environmental transport (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.

The UN Environment Programme's Governing Council launched negotiations in February 1997. The Stockholm Convention was adopted in May 2001, entered into force on 17 May 2004, and currently has 186 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.

Role of the POPRC: The Stockholm Convention specifies a procedure for identifying and listing additional POPs. At the first COP, held in Punta del Este, Uruguay, in 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 fulfil 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 to recommend whether the COP should 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 22 POPs recommended by the POPRC. For most parties, an amendment listing a new POP enters into force automatically within a set timeframe after the COP adopts the decision. However, some parties can opt out of an amendment, and other parties submitted a notification when they ratified the Convention that they must opt in to each amendment.

POPRC-1 to 4: The first four meetings of the POPRC convened between 2005 and 2008. During this time, the POPRC recommended that the COP consider listing the following POPs under Annexes A, B, and/or C: alpha and beta hexachlorocyclohexane; chlordecone; commercial octabromodiphenyl ether (c-octaBDE); commercial pentabromodiphenyl ether (c-pentaBDE); hexabromobiphenyl (HBB); lindane; pentachlorobenzene (PeCB); and perfluorooctane sulfonic acid (PFOS), its salts, and perfluorooctane sulfonyl fluoride (PFOSF). At POPRC-2, the Committee also agreed to create a draft risk profile for short-chain chlorinated paraffins (SCCPs), an issue that would return to the POPRC's agenda several times before the Committee decided to recommend SCCPs for listing at its twelfth meeting. At POPRC-4, the Committee evaluated a proposal to list endosulfan under the Convention and agreed, by majority vote, that it met the Annex D screening criteria.

POPRC-5 to 9: These POPRC 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 to 14: These POPRC meetings were convened between 2014 and 2018. During this time, the POPRC recommended that the COP consider listing the following POPs in Annexes A and/or C: dicofol; decaBDE; HCBD; SCCPs; perfluorooctanoic acid (PFOA), its salts, and PFOA-related compounds;

In 2018, the Committee adopted the risk profile for perfluorohexane sulfonic acid (PFHxS), its salts, and PFHxS-related compounds.

POPRC-15: At its 2019 meeting, the POPRC recommended 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 during the COVID-19 pandemic in January 2021. Delegates agreed that UV-328 met the Annex D criteria, although questions remained about whether transport via plastics in the ocean and seabirds represented a viable mechanism for LRET. As a result of this question, the POPRC

agreed to prepare a guidance document on LRET. The POPRC 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: This meeting was held in a hybrid format, with in-person participation in Geneva in January 2022. The POPRC agreed to recommend listing methoxychlor in Annex A without specific exemptions. It also agreed that Dechlorane Plus and UV-328 warrant global action, due to the potential for adverse effects from their LRET. POPRC-17 also agreed that the following chemicals met the Annex D criteria: chlorpyrifos; chlorinated paraffins with carbon chain lengths in the range C14-17 and chlorination levels at or exceeding 45% chlorine by weight (MCCPs); and LC-PFCAs.

POPRC-18: In September 2022, the POPRC considered three draft risk profiles, adopting the LC-PFCAs and MCCPs risk profiles and deferring its consideration of chlorpyrifos, on which some members raised questions about the severity of adverse effects.

POPRC-19: The POPRC met in October 2023 and adopted the draft risk management evaluations for LC-PFCAs and MCCPs, but requested additional work related to specific exemptions for LC-PFCAs and the chemical identity of MCCPs. The draft risk profile for chlorpyrifos was adopted. Members began their consideration of POPs in stockpiles, articles-in-use, and products and also requested further intersessional work.

POPRC-20 Report

On Monday, 23 September 2024, POPRC-20 Chair Peter Dawson (New Zealand) welcomed members and said he looked forward to the contributions of the many observers present. He remembered Ramon Guardans, who recently passed away, and his many contributions to the POPRC and the Stockholm Convention.

Deputy Executive Secretary David Ogden stressed that actions today continue to impact people worldwide, including those yet to be born. He underscored the role of science in informing the sound management of chemicals toward just outcomes and reported on the Secretariat's activities toward eliminating PCBs by 2028.

The POPRC then adopted its agenda (UNEP/POPS/POPRC.20/1/Rev.1 and Add.1), scenario note (INF/1) and schedule (INF/2) for the meeting. It also adopted the rotation of membership (INF/3). The Secretariat noted that the terms of 17 members will expire in 2025, including the term of Chair Dawson.

Technical Work

Consideration of the draft risk management evaluation (RME) for chlorpyrifos: On Monday, the Secretariat introduced the draft RME (UNEP/POPS/POPRC.20/2), additional information (INF/5 and INF/5/Add.1), and comments and responses (INF/6).

Task Group Chair Pinas and Drafter Rauert introduced the draft RME for chlorpyrifos, noting it is a broad-spectrum organophosphate pesticide with agricultural, veterinary, residential settings, industrial, and public health applications. Reporting that alternatives are available for all uses, Rauert highlighted that some countries have already suggested possible requests for exemptions, including:

- cattle (Kenya);
- citrus, peanuts, and rice (China);
- locust control (India); and
- public health applications (China, India).

Informing that 42 countries have already banned chlorpyrifos, and many others have partially banned, restricted, or placed it under review, Rauert outlined two options for listing: prohibition by listing in Annex A without exemptions, or restriction by listing in Annex A or B with exemptions.

Buser, Seppälä, Khashashneh, Abdallah, Beyak, Kimbara, and Miglioranza welcomed the RME and emphasized alternatives are available for all uses and many countries have already banned chlorpyrifos, suggesting that the POPRC recommends listing it in Annex A with no exemptions.

Xiao, recalling the process of balancing health and environmental concerns when including DDT in Annex B of the Stockholm Convention, called for a similar balanced approach to chlorpyrifos. He stated that the draft RME does not address exemption requests made by parties and does not address the nuances of applying alternatives in developing countries, including their cost.

Joswa, Amichand, Sharma, Mumbo, and Nyuma Gevao recommended listing chlorpyrifos in Annex A with specific exemptions, but called for a "balanced approach." Nyuma Gevao observed the need to provide technical and financial support to developing countries to ensure an effective transition to alternatives. Azhar supported the draft RME's findings but stressed some industries' dependency on chlorpyrifos, calling for a thorough evaluation of the socio-economic impacts of a total ban. Mumbo called for time for parties to test alternatives that had not been studied in the tropical environment and other country-specific conditions. Munyinda called for an exemption for use in the construction industry as a termiticide. Khashashneh reminded that the POPRC is a scientific committee and suggested the COP could address such concerns.

An observer from IRAQ noted that chlorpyrifos has been used historically for termites but has recently been banned in Iraq, which he suggested indicates alternatives are available.

An observer from the RUSSIAN FEDERATION stressed that the draft RME needs "more convincing and unambiguous evidence of the social and economic rationale" to move to safer alternatives.

An observer from CHINA urged a gradual transition to avoid "overwhelming impacts" on China's agricultural production, food security, economy, and livelihoods. They suggested existing alternatives are three to four times more expensive than chlorpyrifos and less effective.

The STOCKHOLM CONVENTION REGIONAL CENTRE (SCRC) SENEGAL observed that chlorpyrifos is still actively used in the region for agricultural and public health applications. They emphasized the need for global action on chlorpyrifos to provide scientific information on the local level, which is currently lacking in the region.

Observers from PESTICIDE ACTION NETWORK (PAN)-NORTH AMERICA and INTERNATIONAL POLLUTANTS ELIMINATION NETWORK (IPEN) relayed the developmental and neurological effects chlorpyrifos can have on children and pregnant women, as well as the broader risks it poses through occupational and residential exposure. They also noted the impacts of chlorpyrifos contamination in the Arctic, including on the traditional food sources of Indigenous Peoples. They highlighted available and widely used alternatives, calling for the listing of chlorpyrifos in Annex A without any exceptions.

The observer from BRAZIL echoed concerns about chlorpyrifos' toxicological effects but stated that transitioning to available alternatives is a complex challenge.

Chair Dawson noted some agreement to list in Annex A and the need for further discussion on specific exemptions and available alternatives. The POPRC established a contact group, chaired by Pinas, to discuss the RME and develop a decision on chlorpyrifos.

On Wednesday, Chair Dawson reminded colleagues that, as a scientific subsidiary body, the POPRC needs a scientific basis for exemptions. He drew attention to China's conference room papers (CRPs) as an example of information that would form a basis for recommending exemptions. Mumbo queried how members from countries that lack capacity could be expected to provide such information. Chair Dawson said one option would be to recommend listing in Annex A with unspecified exemptions.

On Friday, the Secretariat introduced the draft decision (UNEP/POPS/POPRC.20/CRP.7) and the revised draft RME (CRP.8).

On the draft RME, IPEN relayed new information that chlorpyrifos will be banned in Kenya from 2025 for use in controlling ticks in cattle. Mumbo said it has not been banned, but there are discussions on managing highly hazardous pesticides.

Highlighting growing insecticide resistance in arthropod species, PAN observed that all the crops identified in the exemptions could be grown organically.

The POPRC adopted the draft RME.

On the draft decision, Joswa queried why the exemption related to weevils in cotton crops was removed, given the importance of this crop in Cameroon. He asked that this concern be recorded in the meeting report.

Nyuma Gevao recalled that he suggested an exemption for use on maize crops and underlined that he is representing 52 countries, which he foretold may ask for this exemption at the COP. He stressed food security is vital for his country, and he had requested more details from his ministry but had yet to hear back. Chair Dawson observed that the COP may agree to additional exemptions.

Pinas clarified that the contact group discussed these two uses thoroughly and agreed alternatives were available and affordable.

Joswa requested that the draft decision be amended to include use on cotton crops. Chair Dawson stated the POPRC had just agreed to the RME, which concludes that an exemption for this use is not required. He suggested deferring consideration of this decision to allow for informal consultations.

Chair Dawson later introduced changes to the RME and the decision to note that some countries may require additional time to phase out the use of chlorpyrifos for certain crop/pest combinations and transition to alternatives.

Joswa characterized this text as very broad and said the reasons to justify the exemptions currently listed in the decision would apply to other crop/pest combinations. He underscored that the exemptions could be re-opened at the COP. He asked his reservations to be noted in the meeting report. Chair Dawson recalled that it is the COP's role to consider and decide on the exemptions.

With those changes, the POPRC adopted the decision.

Final Decision: In its decision (UNEP/POPS/POPRC.20/CRP.7), the POPRC adopts the RME and recommends to the COP that it consider listing chlorpyrifos in Annex A with specific exemptions for production and use for the following:

- plant protection for: control of rice planthoppers, rice stemborers and rice leaf rollers in rice; control of scale insects in citrus; underground pest control of grubs on peanuts; underground pest control of sugarcane beetles on sugarcane; and control of locusts;
- control of ticks in cattle; and
- wood preservation against borers and termites in building foundations.

The POPRC notes some countries may require additional time to phase out uses of chlorpyrifos for certain crop/pest combinations and to transition to alternatives.

Consideration of recommendations to the COP: *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 outcomes of the further intersessional work (UNEP/POPS/POPRC.20/3), comments and responses (INF/7), and calculations sheet for estimates of emissions values (INF/14). She recalled POPRC-19 agreed to the RME and a recommendation to list MCCPs in Annex A with specific exemptions and undertake further intersessional work to strengthen the recommendation regarding chemical identity.

Task Group Chair Ávila Taborda and Drafter Liz Lawton (observer from the UK) introduced the assessment of further information. Lawton reported a lack of agreement on identifying MCCPs: defining the listing based on the congener group or the chlorination level. Lawton identified the benefits of both approaches, saying that the chlorination-level approach is more feasible for managing the production stage, both are feasible for managing products and articles in use, and the congener-based approach is more viable for environmental monitoring. She suggested a combined approach based on these benefits, where the chlorination level would be used at the production stage and the congener approach used at the other stages.

Chair Dawson noted the complexity of this issue and highlighted the need to find an approach that is understandable to producers but also effective at reducing MCCPs.

Buser said the Committee should not allow the production and use of congeners with "double-digit" chlorination levels that would have POP properties. He suggested the combined approach, as discussed in the draft RME, would create ambiguity and drew attention to new analytical methods for congener groups that were unavailable when MCCPs were initially proposed.

Bertato characterized the combined approach as problematic. She said that MCCPs produced below the 45% chlorination level might still result in products containing MCCPs that would be POPs. She drew attention to EU processes underway to use a congener-based approach in the EU Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Xiao objected to expanding the scope of chemicals to be listed beyond what was initially proposed and what substances were deemed to be POPs.

Khashashneh supported the combined approach, saying that the chemical identity should not be based solely on chlorination levels.

Janssen noted that short-chain chlorinated paraffins (SCCPs) are listed in the Convention based on their chlorination levels. Seppälä noted technical capabilities to analyze and detect chlorinated paraffins had evolved since the POPRC reviewed SCCPs. Kimbara highlighted new analytical method developed by a Japanese university that has only been published for SCCPs, but can also be applied for MCCPs.

Acknowledging procedural challenges with expanding the scope of the listing at this stage of the review, Seppälä stressed that the POPRC recommendation should be functional and reflect the possibility that listing MCCPs at or exceeding 45% chlorination

level could lead to the production of some congeners with POP-like qualities.

Xiao acknowledged that while POPRC is a scientific committee, it should also consider social sciences, noting their relevance to the Annex F review. Citing challenges with monitoring and enforcement in the absence of laboratory capacities, he expressed concerns about controlling substances like MCCPs and called for collecting more evidence and learning from the SCCPs experience.

The AMERICAN CHEMISTRY COUNCIL, also on behalf of the EUROPEAN CHEMICAL INDUSTRY COUNCIL (CEFIC), expressed the industry's readiness to implement POPRC's recommendation on MCCPs. Alongside an observer from CHINA, they underscored the challenge of expanding the definition to include congeners since not all of them have undergone all the stages of POPRC review.

An observer from the RUSSIAN FEDERATION highlighted that alternatives could increase the price of final products and compromise their quality since it is not clear whether alternatives have the same properties, for example, when it comes to plasticity.

An observer from AUSTRIA, citing the heterogeneous nature of chloroalkanes C14-C17, questioned the feasibility of the combined approach and suggested basing the identity on the linear chloroalkanes that are responsible for the hazard profile assessed under the Convention. She called this approach and effective means of identification as C14-C17 may be present in many substances.

Citing capacity differences between the EU and developing countries for feedstock paraffin production, an observer from CHINA questioned setting concentration levels at 0.1%, recalling that, for SCCPs, it is set at 1%.

An observer from the EU recalled that the POPRC had not agreed on a combined approach and the listing should refer to the congener group to ensure "turning off the tap" on manufacturing the substance since many substances with chlorination levels below 45% are known to have POP properties.

IPEN supported the congener approach, citing previous cases where chemicals were referred to by their trade name throughout most of the POPRC's review and, more precisely, identified at the Annex F stage. She lamented that exemptions could lead to the generation of 10 million tonnes of hazardous waste, and that wide MCCP application in packaging and running tracks increases children's exposure.

Chair Dawson clarified that POPRC-19 had not agreed upon the chemical identity but that both options put forward in the decision are based on the congener approach. The POPRC established a contact group chaired by Ávila Taborda with a mandate to revise the draft assessment and discuss the draft decision, with a focus on chemical identity, concentration limits, and exemptions.

On Friday, the Secretariat introduced the draft decision (UNEP/POPS/POPRC.20/CRP.11) and revised draft assessment of information (CRP.12). Chair Dawson congratulated colleagues for working through this complicated group of chemicals that have high production volumes for a large number of uses.

Bertato highlighted several aspects of the draft decision, including that:

- some of the congener groups were assessed and identified as POPs;
- the risk management measures will minimize exposure to these congener groups;
- there is a 3% concentration limit for substances and mixtures by weight;
- there is a transitional period for producers of MCCPs below a 45% chlorination level to comply with the 3% concentration limit;
- the COP will review the concentration limit over time; and
- producers must disclose information on the concentration of congener groups identified as POPs to ensure compliance with the concentration limit.

Frydrych, Kimbara, Beyak, Xiao, and observers from the EU and CHINA, among others, thanked members and observers for their efforts to find agreement on this despite the complex work and differing views. Some members underscored the need to explain this complicated listing and its rationale to capitals before and during the COP.

Seppälä and Buser suggested minor amendments for consistency, and the POPRC adopted the decision with those suggestions.

Final Decision: In its decision (UNEP/POPS/POPRC.20/CRP.11), the POPRC adopts the addendum to the RME. It recommends to the COP that it consider listing chlorinated paraffins with carbon chain lengths in the range C14–17 and chlorination levels at or exceeding 45% chlorine by weight in Annex A with specific exemptions for the following, for five years from the date of entry into force of the amendment:

- polyvinyl chloride (PVC) limited to uses as wires and cables in the construction sector, calendered films in the packaging field (excluding packaging), rubber and plastic insulation materials, and solid woven conveyor belts used in underground coal mines;
- adhesives and sealants, limited to one-component polyurethane foam used in sealing for doors and windows; waterproof coatings and anticorrosion coatings; and aerospace and defense applications (e.g., polyurethane adhesives and tamper-proof putty); and
- tape used for non-structural bonding in aerospace and defense products.

The POPRC agreed to recommend a specific exemption for metalworking fluids in professional or industrial settings with collection systems, until 2036, limited to use as extreme temperature and pressure additives for metalworking fluids used in "heavy-duty" processes for the production and repair of metals and metal alloy components such as those used in the following applications and uses:

- aerospace;
- defense;
- automobiles;
- electrical and electronic equipment (EEE) used in medical devices, in vitro diagnostics devices, and instruments for measurement, analysis, manufacturing, control, monitoring, testing and inspection;
- production of machinery and tools used in agriculture and building/construction;
- energy and power generation;
- oil and gas extraction;
- chemical production and refining;
- nuclear power facilities;
- low-carbon and renewable energy technologies; and
- non-EEE medical devices.

The POPRC further agreed to recommend a specific exemption for the use of polymers and rubbers used in replacement parts,

limited to use in the following applications (where it was originally used in the manufacture of those articles), until the end of service life of the articles or 2041, whichever comes first:

- production of automobile parts;
- EEE used for medical devices, in vitro diagnostics devices, and instruments for measurement, analysis, manufacturing, control, monitoring, testing and inspection; and
- aerospace and defense products.

The POPRC also recommends that the COP consider inserting a new note in Part I of Annex A that a list of congeners was assessed and identified as POPs. The POPRC decision then lists the congeners.

The POPRC notes that manufacturers of chlorinated paraffins can comply with the concentration limit by ensuring the concentration of n-alkanes-C14–17 present in the feedstock used to produce the corresponding chlorinated paraffin product is below the agreed limit.

The POPRC recommends that, if the COP agrees to list these substances, it consider adding a new part in Annex A that sets out a management approach to specific congeners, particularly those with a chlorination level under 45%. It includes:

- the Convention's note that unintentional trace contaminants in products and articles shall not be considered to be listed in Annex A, does not apply when the summed concentration of the chloroalkanes for the congeners specified in the listing that appear in substances or mixtures occur at concentrations greater than 3% by weight. This will be subject to review by COP-14 and every second meeting thereafter, with the aim to reduce this limit over time;
- the concentration limit does not apply to the production and use of chlorinated paraffins with carbon chain lengths in the range C14–17 and chlorination level below 45% by weight for a period of five years from the date of entry into force of the amendment. This is subject to review at COP 14 and every second meeting thereafter, with the aim to determine whether this period needs to be extended. Parties shall notify the Secretariat of their intention to use this provision with information on intended uses;
- the use of chlorinated paraffins with carbon chain lengths in the range C14–17 and chlorination levels at or exceeding 45% chlorine by weight shall be eliminated, except for parties that have notified the Secretariat of their intention to use them;
- each party shall require that manufacturers of chlorinated paraffins products within their jurisdiction disclose information on the concentration of C14-17 polychlorinated alkanes in these products as follows for the sums of the congeners included in the listing. Or alternatively, manufacturers can provide the concentration of C14-17 alkanes present in the feedstock used to produce the corresponding chlorinated paraffin products to demonstrate that they are below the agreed concentration limit for the chlorinated paraffin congener groups identified as POPs. For mixtures containing more than one chlorinated paraffin product, or containing chlorinated paraffin products and other substances, the information indicated above should be provided for all chlorinated paraffin products present in the mixture; and
- each party that has registered for a specific exemption for metalworking fluids in professional or industrial settings with collection systems shall ensure worker protection.

LC-PFCAs, their salts, and related compounds: On Monday, the Secretariat introduced the further assessment (UNEP/POPS/POPRC.20/4) and comments and responses (INF/8). Task Group Chair Ndlovu and Drafter Beyak presented the further assessment to support the RME. Noting the mandate to consider information related to the following exemptions, Beyak reported that exemptions may not be needed for:

- inactive/inert fluorine liquid for reliability testing and temperature control for the manufacture of electric components and electrical and electronic equipment, as the product used for this application is not anticipated to contain LC-PFCAs;
- heat media in a closed system, including in components of in vitro diagnostic medical devices, refractive media in analytical instruments for detecting fluorescence, and in thermostatic chambers for reliability and durability testing of equipment, as the product used for this application is not anticipated to contain LC-PFCAs; and
- textiles for oil and water repellency to protect workers from dangerous liquids, on which the limited information available suggests that a specific exemption may not be needed as the general exemption would cover it for quantities occurring as unintentional trace contaminants in products and articles.

Additionally, Bayek noted there is insufficient information to demonstrate the need for a specific exemption for cooling applications in the manufacture of high-heat and high-voltage semiconductor manufacturing equipment. Bayek also reported that literature points to the unintentional production of LC-PFCAs during the manufacturing of other per- and polyfluoroalkyl substances (PFAS) and in other industrial processes. He suggested the general exemption for trace contaminants could apply in this case.

Bertato recommended against an exception for LC-PFCAs in semiconductor applications, in reliability testing, and for textile applications, which she stressed would allow for the intentional use of LC-PFCAs.

Xiao queried the threshold or definition for "trace levels." Chair Dawson noted differing national definitions.

IPEN stressed that alternatives for LC-PFCAs are available and their continued use means continued exposure for workers and the environment. They suggested adding a statement to the decision warning against regrettable substitution, as it has done with previous PFAS listings.

An observer from CHINA noted that related compounds of LC-PFCAs are still present in some products and exceptions are required. An observer from the RUSSIAN FEDERATION underlined the need to consider environmental effects, not only health.

POPRC established a contact group, chaired by Ndlovu, to revise the item and provide a draft decision.

On Wednesday, Xiao requested that the meeting report reflect that parties define unintentional trace contamination.

On Friday, the Secretariat introduced a draft decision (UNEP/POPS/POPRC.20/CRP.3) and a revised draft assessment (CRP.4). Contact Group Chair Ndlovu reported on the completed work and highlighted the language in the draft decision regarding the precautionary principle and recommendation that parties take into account the information on potential alternatives, such as some short-chain PFAS, provided in the RME when determining whether an alternative is a regrettable substitution.

Xiao objected to emphasizing short-chained PFAS and suggested focusing more generally on avoiding regrettable substitutions. He cited different scientific approaches to defining PFAS, their properties, and the varied state of research on this in the EU and US,

where more extensive research had been done compared to China. He stressed that some short-chained PFAS are now successfully used as alternatives to banned or restricted substances and that restricting the whole group will pose challenges for industry in China and complicate domestic ratification.

Frydrych, Bertato, Řiháčková, and Beyak did not agree with deleting a reference to short-chained PFAS in the text of the paragraph, stressing it comes from the already agreed upon RME.

Bertato and Buser underlined that the proposed language does not imply that all PFAS are POPs, rather it draws parties' attention to this group when looking for alternatives, as some specific substances might have POP properties. Beyak noted similar language was agreed in POPRC and COP decisions on PFHxS and PFOA, and that it provides flexibility by leaving the search for alternatives at parties' discretion according to their regulatory systems.

Munyinda explained that the paragraph in question calls for more scientific research and indicates areas where it can be done to understand alternatives better, but it does not imply their ban.

Buser, supported by Bertato but opposed by Xiao, proposed a footnote with a link to the Organisation for Economic Co-operation and Development (OECD) document that contains a PFAS definition.

PLASTICS EUROPE, supported by the INTERNATIONAL CHEMICALS COUNCIL (ICC), requested the Committee clarify the use of CAS numbers during future discussions on the indicative list and provide more guidance to industry. They stated that, from the CAS number, it is often unclear which substances the listing covers.

IPEN supported language on alternatives, stating that the emphasis on short-chained PFAS draws attention to the available information.

The ICC stated the industry supports a comprehensive risk-based approach to PFAS, and aligned with Xiao's concerns regarding the lack of alternatives and that restricting this whole group will lead to regrettable substitutions and pose implications for downstream users.

An observer from CHINA explained that many alternatives to restricted chemicals are short-chained PFAS, and while they might not be perfect, other alternatives are not feasible.

Buser requested that time be allocated at POPRC-21 for a discussion on the indicative list. Chair Dawson proposed, and members agreed, to add a paragraph to the draft decision on initiating intersessional work on the indicative list instead of waiting for the COP recommendation to avoid delay.

Chair Dawson asked if deleting the acronym "PFAS" from the reference is acceptable. Munyinda, in the interest of progressing, proposed moving the phrase in question to the footnote and keeping the paragraph more broadly about alternatives that may be regrettable substitutions. The POPRC then adopted the decision based on the edits suggested.

Final Decision: In its final decision (UNEP/POPS/POPRC.20/CRP.3), the POPRC adopts the addendum to the RME. It also decides to recommend listing LC-PFCAs, their salts, and related compounds in Annex A of the Convention with the following specific exemptions:

- for five years from the date of entry into force of the amendment, semiconductors designed for replacement parts, except for those exempted until the end of their service life or 2041; and
- until the end of service life of the following articles or in 2041, whichever comes first, semiconductors designed for replacement parts for combustion-engine-powered vessels and replacement parts for motor vehicles that have ceased mass production.

The POPRC also recommends:

- the COP establish a process for the identification of substances covered by such a listing, taking into account the process established for PFOA, its salts and PFOA-related compounds and PFHxS, its salts and PFHxS-related compounds; and
- the COP consider reminding parties that, when replacing LC-PFCAs, they should take into account the information on potential alternatives in the RME and avoid regrettable substitutions.

Consideration of a proposal for listing PXDD/Fs in Annex C: On Monday, the Secretariat introduced the proposal (UNEP/POPS/POPRC.20/5) and verification that the proposal meets the Annex D criteria (INF/4).

Buser presented the proposal, noting that it does not include chlorinated dioxins and furans or halogenated dioxins or furans containing fluorine or iodine. He said PXDD/Fs are formed unintentionally during thermal processes when brominated aromatics are present. He reported elevated levels of some PXDD/Fs in recycled plastics, eggs, and soils around e-waste and automotive recycling plants.

On persistence, he noted that PXDD/Fs are precursors of chlorinated dioxins and furans already listed in Annex C. He reported that the half-lives exceed the Convention's thresholds for soil and water.

On adverse effects, he reported similar, or greater, toxicity than chlorinated dioxins and furans for most PXDD/Fs.

On bioaccumulation, Buser noted a logKow above five and elevated levels in human blood 35 years after exposure to some PXDD/Fs.

On LRET, he relayed modelling studies showing POP-like behavior for these substances. Despite challenging analysis, he reported that some of the chemicals have been found in remote locations, including the Arctic. He said transport could occur from plastic debris, and atmospheric transport is possible when absorbed or adsorbed to aerosol particles.

To conclude, he suggested that all Annex D criteria are met.

Kimbara asked if mono- and octo-PBDD are not included in the chemical identity. Buser stated this would be corrected and all are in the scope of the proposed chemicals. Kimbara said mono-chlorinated dioxin is less toxic and rarely detected, so he suggested, supported by Janssen, that members consider whether this should be in the scope of chemicals considered. Xiao called for a clear chemical identification, suggesting a lack of data to identify the scope.

Khashashneh, Frydrych, and Bertato, with observers from NORWAY, CANADA, AUSTRIA, and IPEN, said the information provided suggested that Annex D criteria may be met and warrants further consideration by the Committee. Seppälä agreed, suggesting more information will be needed to develop a draft risk profile under Annex E. He reminded, with Nyuma Gevao, that the purpose of the Annex D review is to see if the screening criteria are met. Nyuma Gevao suggested future discussions on whether the concentrations in remote regions warrant global action.

Janssen noted measures under the Convention to reduce BDEs, which he said should reduce their presence in the environment and

asked if the amounts of brominated dioxins and furans warrants a similar treatment as their chlorinated counterparts. He also queried if the measures would be similar. Buser suggested the measures from brominated dioxins could differ because of the range of aromatic brominated compounds that could produce the dioxins and furans. Janssen clarified his question was about the measures focused on unintentional production, which Buser said would likely be similar to chlorinated dioxins and furans.

Bertato noted this proposal includes more than 4,000 congeners, and thermal degradation is important because the EU is working on a possible restriction of a group of aromatic brominated flame retardants.

An observer from AUSTRALIA suggested further developing the evidence base related to the statement of reasons of concern and, with observers from the UK and CANADA, for persistence. The UK observer added further work on the LRET evidence base.

SCRC-SENEGAL observed that the shift from chlorinated to brominated flame retardants and other compounds underlines the need for this notification.

BROMINE SCIENCE AND ENVIRONMENTAL FORUM questioned the added value of listing these substances as POPs because current measures will suffice to manage their release. He noted one of the main routes of formation relates to plastics, which he said was likely due to the processing of polybrominated diphenyl ethers (PBDEs), and he noted the Basel Convention already manages these wastes.

An observer from CHINA noted halogenated dioxins have unique sources, such as producing brominated flame retardants and incinerating wastes containing PBDEs.

The POPRC established a contact group, chaired by Jaiteh.

On Friday, the Secretariat introduced the draft decision. Kimbara and Buser agreed it fulfills the Annex D criteria and suggested the intersessional group consider how much bromide should be included in the PxDDs. Buser requested that an additional reference to the LRET monitoring studies be included, which members agreed to.

Final Decision: In its decision (UNEP/POPS/POPRC.20/CRP.2), the POPRC expresses satisfaction that the screening criteria have been fulfilled. It establishes an *ad hoc* working group to review the proposal further and to prepare a draft risk profile in accordance with Annex E, and invites parties and observers to submit to the Secretariat the information specified in Annex E before 2 December 2024.

POPs in stockpiles, products and articles in use and in wastes: On Tuesday, the Secretariat introduced the draft report (UNEP/POPS/POPRC.20/INF/9) and comments and responses (INF/10), as well as a note with proposed way forward (UNEP/POPS/POPRC.20/6).

Task Group Co-Chair Azhar introduced the draft report, highlighting that many parties' responses reveal confusion between the definitions of stockpiles and wastes. He presented on national approaches to regulations and tracking systems, including labelling, and on challenges countries face when identifying POPs in articles. He concluded with a list of areas to be further discussed by the POPRC when formulating recommendations to the COP on improving transparency in value chains, improving analytical capacities of countries, improving harmonization and knowledge sharing, and promoting digital labelling and databases.

Chair Dawson noted that developed countries, including New Zealand, face many problems with transparency and identifying POP-containing articles, especially when entering waste streams. Khashashneh supported the report's conclusions and, recognizing the challenges in identifying and tracking POPs in articles in both developed and developing countries, called for capacity-building efforts.

Task Group Drafter Seppälä echoed Khashashneh on seizing this moment to start capacity building on this issue and noted while much information was collected on different approaches and challenges, regulations are the foundation for further action. He stressed there is no practical solution the POPRC can present to the COP as of now, stating that, in his view, digital passports are the most practical, but would require solving regulatory and practical challenges first.

Munyinda suggested adding DDT stockpiles to the exercise since many African countries still use DDT and most likely have stockpiles or waste, depending on the definition. She stressed the importance of analytical, regulation, governance, and technical capacity.

Gevao noted countries like Sierra Leone still face challenges in identifying stockpiles of old POPs like pesticides and PCBs. Noting POPRC needs to report on its work, he suggested urging the COP to find mechanisms for disposing of already identified stockpiles.

Jaiteh, noting the importance of labelling, stressed most new POPs are imported and called for identifying or establishing Harmonized System (HS) codes to identify and control POPs. Seppälä, with an observer from SWEDEN, agreed that more focus on HS codes may not be needed and recalled National Implementation Plan (NIP) guidance from 2019 that includes some information related to HS codes for POPs.

Mumbo highlighted the report's lack of recommendations, suggesting the lack of input from African countries in preparing the report stems from insufficient technical capacities. He suggested looking into options for capacity building, technology for identification, and regulation, including the application of extended producer responsibility. Janssen said 32 parties sent their information to the task group and expressed hope for identifying recommendations in a contact group.

Joswa noted new POPs are contained in widely used articles and, noting labelling is useful, called for identification measures for specific POPs to be developed at the listing stage.

Řiháčková noted the unexpected challenge of confusion over the definitions of stockpiles and waste and suggested developing clear definitions as a recommendation to the COP.

Ndlovu noted this work is long overdue since countries still struggle to identify the initial 12 POPs and to describe what constitutes a stockpile and what is waste. Miglioranza called for developing common terminology and other relevant aspects, like threshold limits, while also accounting for different capacities.

An observer from CANADA welcomed the report, noting they are mainly importers and are developing their own labelling system. The observer suggested edits to enable using information shared under the Rotterdam Convention prior informed consent procedure.

An observer from SWEDEN suggested accounting for related work done in other fora, including efforts to achieve Targets B2 (making reliable information on chemicals throughout the supply chain available) and B6 (implementation of the Globally Harmonized System of Classification and Labelling of Chemicals) of the Global Framework on Chemicals. She suggested a stronger emphasis on HS codes in the report.

IPEN stressed that costly and time-consuming techniques available for POP identification in articles are not feasible for many countries, highlighting labelling and public databases as a way to achieve higher levels of implementation. She recommended synergies with existing data collection and management systems, like the Global Framework on Chemicals (GFC) and HS codes. An observer from the RUSSIAN FEDERATION noted that identifying new POPs is problematic, especially in waste streams, and stressed the importance of developing analytical methods.

An observer from SOUTH AFRICA stressed labelling is a must, given the challenges developing countries have in identifying POPs in imported products because of a lack of laboratory and border-control capacities and called for the Compliance Committee to deal with cases of non-labelling by exporting countries.

An observer from NORWAY called for synergies with global instruments like the GFC, and for the decision on this report to include some broader recommendations to allow the COP to take further action.

Chair Dawson noted the overlap with the Basel Convention when it comes to POPs wastes and with the Rotterdam Convention when it comes to labelling. The POPRC established a contact group, chaired by Azhar, with a mandate to revise the document and develop a draft decision to find a way to present the report's findings to the COP.

On Friday, the Secretariat introduced the decision. Khashashneh stressed this matter is of great importance to industrialized and developing countries alike. He suggested the decision and report could represent a model for future conventions and other international agreements.

Seppälä noted it is clear from the intersessional work that there is no single answer to dealing with POP stockpiles and wastes, and it depends on the kind of POP, its articles, and the application in which the POP is used. He emphasized the information contained in the report and decision is "a big step forward toward better negotiations."

IPEN encouraged members to consider how the report and the decision can be used for decision making at the COP when discussing MCCPs and LC-PFCAs. They noted the decision contains important lessons learned that should be implemented at the COP.

Final Decision: In its decision (UNEP/POPS/POPRC.20/CRP.9), the POPRC decides to submit to the COP the report on the options for identifying POPs in stockpiles, products and articles in use and in wastes, and on issues related to the production, import and export of products and articles containing POPs. It also recommends that the COP:

- continue its work on improving the identification of POPs in stockpiles, products and articles in use and in wastes, especially taking into account developing countries' need for capacity building and technical assistance to address those challenges;
- continue cooperation and coordination with the Basel Convention, Rotterdam Convention, Minamata Convention, intergovernmental negotiating committee to develop an international legally binding instrument on plastic pollution, including in the marine environment, Inter-Organization Programme for the Sound Management of Chemicals, Montreal Protocol on Substances that Deplete the Ozone Layer and other forums relevant to the identification of POPs in stockpiles, products and articles in use and in wastes, and to invite those international agreements and initiatives to consider the outcomes and information provided in the report;
- explore ways to improve the identification of POPs in products and articles through the HS codes and continue collaboration with the World Customs Organization; and
- request the Secretariat to continue raising awareness among parties of existing guidance relevant to identifying POPs.

Evaluation and review of brominated diphenyl ethers (BDEs) pursuant to paragraph 2 of Parts IV and V of Annex A to the Convention: On Tuesday, the Secretariat introduced the evaluation and review (UNEP/POPs/POPRC.20/7) and draft report (INF/11). He reported that the Secretariat has collected and analyzed the information on progress made by parties towards eliminating BDEs contained in articles and their continued need for specific exemptions. He highlighted the report includes recommendations for further action at the COP, including a call for parties that have not yet done so to take necessary actions to eliminate the production and use of BDEs, as well as the recycling of products and materials that may contain BDEs. The recommendations also note the need for inventories of BDEs and for the ESM of BDE waste, as well as the need to strengthen import and export regulations on products that may contain POP BDEs and eliminate specific exemptions.

Seppälä stated that the report contains a lot of valuable information and noted the excellent timing of this review following the phase-out of these chemicals. He suggested the Secretariat include a study from the UK on the presence of POPs in various matrices from March 2024.

An observer from CANADA provided revisions related to information on Canada, low-POP content in POPs wastes under the Basel Convention, and the destruction of waste contaminated with BDEs. An observer from AUSTRALIA requested minor amendments to improve the document's accuracy related to Australia's regulatory frameworks.

IPEN noted the timeliness of the report, given discussions on POPs in stockpiles, products, and articles in use and in wastes, calling the report "a case study of the consequences of the lack of transparency and traceability of POPs" and the limited ability of countries to track imports. They suggested revisions on recommendations to end the recycling of products containing all the 2009 POP BDEs and highlighted reports published by IPEN that reveal the presence of BDEs, in various recycled products, including children's products. They stressed that exemptions, in combination with a lack of transparency, lead to the widespread contamination of recycled plastics. The POPRC took note of the report.

Indicative lists of substances covered by the listing of PFOA, its salts and related compounds and by the listing of PFHxS, its salts and related compounds: The Secretariat introduced the indicative lists of substances (UNEP/POPS/POPRC.20/8). She noted that COP-11 requested parties to submit further information regarding identifying substances covered by indicative lists for PFOA, its salts and PFOA-related compounds and PFHxS, its salts and PFHxS-related compounds.

Buser, supported by an observer from the EU, noted three substances were moved from table one (substances covered by the listing) to table two (substances not covered) based on comments from one party. He cited two studies demonstrating that these compounds are precursors to PFOAs and shorter-chain PFCAs and called for them to be moved back to table one on PFOA-related compounds.

Kimbara inquired about two chemicals on the PFHxS list and requested scientific data showing any mechanisms for generating PFHxS from these compounds.

Joswa stated that substances on the PFHxS list are highly carcinogenic, and, with Munyinda, that African countries cannot detect them in their labs. He called for building capacity to enhance lab equipment in developing countries before PFHxS substances are listed.

Dawson reminded that the COP has already agreed to list PFHxS.

An observer from AUSTRALIA welcomed a discussion on how to determine which chemicals would be included or excluded from the indicative lists.

The EUROPEAN AUTOMOBILE MANUFACTURERS' ASSOCIATION pointed out the high expectations placed on manufacturers to know and understand the composition of POPs in their products and urged the use of CAS numbers to facilitate industry compliance.

Dawson encouraged parties to resolve outstanding questions among themselves before another discussion in plenary.

On Friday, Chair Dawson reported that the Secretariat provided revised indicative lists based on input from members and others. The Secretariat highlighted no requests for changes to the PFHxS list. She also recalled the previous decision on the LC-PFCA indicative list and said the intersessional task group could consider this list as well. The POPRC took note of the changes to the PFOA indicative list and intersessional work.

Workplan for the Intersessional Period between POPRC-20 and POPRC-21

On Friday, the Secretariat introduced the intersessional workplan, which includes establishing two intersessional working groups on PXDD/Fs and the indicative list of LC-PFCAs, their salts, and related compounds.

Venue and Dates for POPRC-21

The next POPRC meeting will be held from 29 September to 3 October 2025 at FAO headquarters in Rome, Italy. It will convene back-to-back with the Rotterdam Convention's Chemical Review Committee.

Other Matters

On Friday, the Secretariat reported that COP-11 requested the POPRC to assess the need for interpretation in its meetings. Members unanimously agreed that simultaneous interpretation into the six official UN languages is paramount to the POPRC's efficient and effective work. Several members agreed that the POPRC's technical nature requires all parties to communicate effectively with each other and that interpretation is integral to this process. Observers echoed their support for interpretation. Buser reminded colleagues also to bring their support for interpretation to the budget discussions at the COP. The Secretariat noted the discussion and will report on the results of its assessment to COP-12.

Closure of the Meeting

Deputy Executive Secretary Ogden applauded the collegial and respectful work environment that allows members to tackle heavy agenda items and realize important outcomes and decisions for the COP to work with. He called POPRC a "shining example of how well multilateralism can work at the subsidiary body level." Members and observers applauded Ogden's 20 years of service to POPRC and important contributions to its many achievements.

Chair Dawson thanked all participants for robust discussions and achieved compromises that led to three chemicals going to the COP in 2025. He noted the importance of observers, especially from NGOs and industry, in bringing different dimensions of knowledge to inform POPRC decisions. He gaveled the meeting to a close at 4:40 pm.

A Brief Analysis of POPRC-20

In the 20 years of the Persistent Organic Pollutants Review Committee (POPRC), its work has become considerably more complex. Chemicals are now highly complicated. To take one, albeit huge, chemical group as an example, there are what one observer called "infinitesimal" potential forever chemicals that can be created from their shared basic structure. Some have already been identified as POPs. Others may not fall into this category.

Beyond increasingly complex chemistry, POPRC's work now involves navigating regulatory processes and supply chains for many sectors. POPs are present in an enormous range of products. They can be found coating wires in electronics or our bodies in personal products, like makeup. It's this invisibility of POPs that complicated much of POPRC-20's work. These chemicals present unseen risks in products. But also, POPs hide within intertwined groups of chemicals. Just as one member reminded "that not all fruits are sweet," another noted "but some might be…a little."

Much of the POPRC's work relates to managing these invisible risks. The first stages of the POPRC's review process are designed to determine the risks a POP poses to human health and the environment. The risk management evaluation (RME) compiles scientific information on a chemical's sources, hazards, environmental fate, environmental presence, and exposure to local communities. With this information, the Committee determines whether the chemical is likely, due to its long-range environmental transport, to lead to significant adverse effects on human health and/or the environment, such that global action is warranted.

Once the Committee agrees that global action is needed to eliminate or restrict a POP, attention turns to managing the risks associated with controlling the chemical. This stage occupied most of the POPRC-20's work, where the choices are sometimes less clear-cut, and members' views can vary. The POPRC weighs the risks of the POP against socio-economic considerations, as set out in Annex F of the Convention. These include an assessment of alternatives and the impacts on society of implementing measures to control it.

This brief analysis considers key questions POPRC-20 delegates confronted in their work to protect human health and the environment.

How to Balance Risks?

Protecting Indigenous Peoples in the Arctic was a significant motivation for the Convention's stringent measures because of POPs' disproportionate impact: those least likely to produce or use them can experience their adverse effects. However, as several members urged at POPRC-20, the risks to health and the environment must be balanced against the problems caused by eliminating a POP. The Committee can recommend specific exemptions allowing production to continue for narrowly defined uses, usually only five to ten years. In identifying these exemptions, members traditionally have focused on the availability, affordability, and efficacy of alternatives.

The POPRC's discussions of the pesticide chlorpyrifos complicated this usual assessment and its focus on alternatives. As one industry observer noted, this is the first pesticide that POPRC reviewed that is still widely used. Other pesticides reviewed by the POPRC, notably endosulfan, were "on their way out" in his view, because only a few countries, if any, still used them. Still, endosulfan was contentious, requiring several votes to get through the POPRC review process. With chlorpyrifos, the POPRC had again to find its way through the politics of pesticides.

Annex F's socio-economic analysis treads the line between science and politics. Some members and observers felt that some members' statements "veered" from providing independent scientific comments toward "the political." However, these members thought the draft RME underestimated the economic impacts of listing and, potentially, the efficacy of alternatives. A member from Africa questioned if the alternatives were tested on maize crops in tropical conditions, noting there was only a reference to a study in Brazil. For those desperately concerned about food security, particularly given the changing climate, chlorpyrifos was seen by some as an essential tool for major global crops, including maize and rice.

While the POPRC identified some exemptions, adopting the decision required more attention to the downsides of eliminating the pesticide. A last-minute addition, to recognize the need for time to transition to alternatives, helped some members agree to recommend eliminating chlorpyrifos. Still, some members from Africa foretold continued contention at the Conference of the Parties (COP) and likely additional requests for exemptions, which many members felt was the right place for these discussions.

Who Manages the Risks?

Once a POP is listed, regulatory authorities implement the ban or restriction, monitor compliance, and manage waste. This work requires a whole ecosystem of actors, such as industries manufacturing chemicals, companies using those chemicals in their products, customs agents allowing those products across borders, and anyone responsible for disposal. As the POPRC continues its work on complex, widely used chemicals, it touches many sectors.

Across POPRC-20's agenda, industry representatives argued that they need to be able to identify when their products contain POPS. They argued for precise CAS numbers in listings, which is their preferred method of cataloguing the chemicals in their supply chains. Some members and observers noted the precautionary approach may require different methods of listing chemicals to thoroughly eliminate the risks posed by a POP.

Medium-chain chlorinated paraffins (MCCPs) exemplified the debate on whether regulators or industry should bear primary responsibility for identifying, eliminating, and disclosing risks related to POPs. MCCPs are a group of chemicals produced in huge volumes. The POPRC conducted an emissions inventory for its RME in 2023; 16 countries and the EU reported an estimated total of 920,000 tonnes produced per year. Because MCCPs are an intertwined group of chemicals, it fell to the POPRC to determine what fell within the scope of the recommendation, in other words, what chemicals should be eliminated. POPRC had two options for identifying the group: a chemical's chlorination level or its congeners (roughly, its constituents). Both approaches are in use, variously across countries and manufacturers.

Whichever way POPRC recommended identifying MCCPs would have implications for its regulation and who would shoulder the burden of ensuring compliance with the listing. The UK and others favoring the chlorination level approach argued this would ease the burden on manufacturers, who could more easily identify if their products were at or above 45% chlorination. They argued that this approach was most feasible for managing the risks at the first stage of MCCP production.

The Europeans and other members disagreed that POPRC should make life easier for manufacturers. They worried that some chemicals, which could be generated with the same chemical reactions and processes, could fall below the 45% threshold but still be POPs. Instead, they favored expanding the family tree of chemicals included in the group by specifying the congeners that would be considered POPs and, therefore, eliminated.

After long days of intense, complicated scientific discussions, POPRC members agreed to a dense decision. Several members acknowledged the next challenge would be explaining this recommendation to their colleagues at the COP. A few quietly wondered if they fully understood this decision. It refers to chlorination level as the "headline" of the listing, but the more expansive set of congeners is specified as the group of POPs to be eliminated. It also sets a maximum chlorine concentration limit for substances and mixtures by weight.

The decision largely requires industry to identify compliant chemicals. In a nod to these challenges, POPRC members set out a transitional period for those producing MCCPs below a 45% chlorination level to comply with the 3% concentration limit and, in turn, the listing. During this period, industry must provide information to ensure compliance, which can help users of these chemicals determine if they are POPs. The COP will review aspects of the transitional plan, aiming to make it more stringent over time.

Who Shoulders the Risks?

The requirement for information disclosure could be a sign of things to come. Members repeatedly returned to a central implementation question: What happens after a POP is banned or restricted? It isn't a new question, but one with added urgency as the list of POPs expands to include chemicals used in everyday products. End-use consumers are increasingly bearing the risks posed by POPs.

In its early years, the Convention dealt with chemicals that were mainly "dead." These included pesticides no longer produced but sitting in storage and polychlorinated biphenyls (PCBs) that were widely present in old equipment in the energy sector. For PCBs, which must be phased out by 2025, with stockpiles and waste eliminated by 2028, many countries are still struggling to develop inventories and tackle the challenge of PCB-contaminated equipment still in use.

The new POPs that POPRC-20 recommended for listing present challenges on a whole new level since they are present in an array of everyday products people use worldwide. If you have polyvinyl chloride (PVC, or vinyl) pipes or use a phone charger, you could be exposed to MCCPs used as plasticizers. If you ordered takeout food or decided to cook yourself, your meal's packaging and cookware may contain another group POPRC-20 recommended for elimination, long-chain perfluorocarboxylic acids (LC-PFCAs). While the Committee's main task is to screen new listing proposals, it now must also grapple with an increasingly important question of ensuring safe management of the products containing listed POPs. The discussions on POPs in stockpiles, products, and wastes revealed more questions than answers.

Management requires an understanding of where the POPs are and in what quantities. Most countries import POP-containing products or POPs used in production or industrial processes. Customs agencies are crucial but often lack knowledge, technology, and analytical tools to determine whether the imported goods contain POPs. There is no current global labelling system that can help identify which everyday products were produced using POPs. Early POPRC members called for a "POPs free" label, which never materialized. There are existing tools, such as Harmonized System (HS) codes, a classification system commonly used in importing and exporting goods overseen by the World Customs Organization (WCO). Some suggested the Stockholm Convention could request HS codes for POPs-containing products. Others recalled the Rotterdam Convention's experience with this system. The WCO can take up to seven years to issue a code, if it issues one at all, by which time a POP could be phased out of production and use. Until a suitable system is found, POPs will remain invisible risks in products used by consumers worldwide.

Members recognized the limits of their expertise on this issue, and that the Stockholm Convention cannot achieve transparency and traceability of hazardous substances in global supply chains. The Stockholm Convention is not the only global process struggling with this issue. The new Global Framework on Chemicals includes targets related to this challenge, but as yet, specifies no means to achieve the targets. The ongoing negotiations for a plastics treaty feature debates on tracing chemicals in products, some of which are POPs.

Some hoped the first steps toward solutions may lie closer to home. After collecting information on various national approaches to regulation, POPRC members realized that countries use the terms stockpiles and wastes interchangeably, even though they require different management strategies. Despite calls for the Convention to work on standard definitions, members and observers preferred flexibility. The recommendations for future work may be tentative at this stage, but several felt it is just the tip of the iceberg that could—and perhaps should—occupy the future work of the Committee and Convention to ensure consumer safety.

Clarifying Risks for the COP

Based on the POPRC's work, the COP will consider three new POPs, each recommended for elimination, with specific exemptions. COP delegates will have much to discuss. The chlorpyrifos recommendation may involve deeply political decisions to weigh health and environmental protection against food security. While uncomfortable, some negotiators might prefer those discussions to the technicalities of the other recommended POPs. Several POPRC members hoped for little political intervention on the MCCPs listing at the COP, owing to the intricate science-based balance they struck at this meeting. If all the recommendations are accepted, which, based on historical precedent, is likely, 31 POPs will be included in the Convention, slated for elimination or restriction.

But listing is just the first step. As POPRC-20 showed, sound scientific work is still needed to understand and manage the risks posed by POPs throughout their lifecycle. Here, the COP will have less guidance from its scientific subsidiary body. POPRC addresses the risks posed by chemicals on a case-by-case basis. It will need political guidance on how—and where—to begin to tackle the systematic risks posed by chemicals lurking in supply chains and our everyday lives.

Upcoming Meetings

Montreal Protocol MOP 36: The combined 36th Meeting of the Parties and thirteenth meeting of the Conference of the Parties to the Vienna Convention will discuss issues related to implementation of the Convention and the Montreal Protocol on Substances that Deplete the Ozone Layer. **dates:** 28 October - 1 November 2024 **location:** Bangkok, Thailand **www:** ozone.unep.org

Annual General Meeting (AGM) of the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF): The 20th AGM of the IGF will meet with the theme: Redefining Mining: Balancing the Need for Minerals with Protecting People and the Planet. **dates:** 18-20 November 2024 **location:** Geneva, Switzerland **www:** igfmining.org/annual-general-meeting

Plastic Pollution Intergovernmental Negotiating Committee (INC) 5: The INC to develop an international legally binding instrument on plastic pollution, including in the marine environment, will continue negotiations with a view to reaching agreement on the treaty. **dates:** 25 November - 1 December 2024 **location:** Busan, Republic of Korea **www:** unep.org/inc-plastic-pollution/session-5

Basel Convention COP 17, Rotterdam Convention COP 12, and Stockholm Convention COP 12: The Basel, Rotterdam, and Stockholm COPs will meet to address proposed listings to the respective conventions' annexes, and issues of joint concern such as financial and technical assistance. **dates:** 28 April – 9 May 2025 **location:** Geneva, Switzerland **www:** brsmeas.org/2025COPs/

CRC-21: The Rotterdam Convention's Chemical Review Committee (CRC) will meet to consider notifications of final regulatory action and proposals for severely hazardous pesticide formulations. **dates:** 22-25 September 2025 **location:** Rome, Italy **www:** pic.int

POPRC-21: The POPRC will consider the draft risk profile for polyhalogenated dibenzo-p-dioxins and dibenzofurans (PXDD/PXDF). **dates:** 29 September – 3 October 2025 **location:** Rome, Italy **www:** pops.int

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

Glossary

BDEs	Bromodiphenyl ethers
COP	Conference of the Parties
HS	Harmonized System
IPEN	International Pollutants Elimination Network
LC-PFCAs	Long-chain perfluorocarboxylic acids
LRET	Long-range environmental transport
MCCPs	Medium-chain chlorinated paraffins
PAN	Pesticide Action Network
PCBs	Polychlorinated biphenyls
PFAS	Per- and polyfluoroalkyl substances
PFHxS	Perfluorohexane sulfonic acid
PFOA	Perfluorooctanoic acid
POPs	Persistent organic pollutants
POPRC	POPs Review Committee
PXDD/Fs	Polyhalogenated dibenzo-p-dioxins and dibenzofurans
RME	Risk management evaluation
SCCPs	Short-chain chlorinated paraffins
SCRC	Stockholm Convention Regional Centre