Organization of the Technology and Economic Assessment Panel and its technical options committees

Panel responses to parties' questions

Introduction

Decision XXXV/20 requested that the Technology and Economic Assessment Panel (TEAP) "in its progress report prepared ahead of the 47th meeting of the Open Ended Working Group of the Parties to the Montreal Protocol (OEWG), provide options on the organization of the Panel and its Technical Options Committees, considering the Panel's terms of reference established in decision XXIV/8, and informed by consultation with the Technical Options Committees' co-chairs and members, and by their experiences with operating, on a trial basis, with new ways of organizing their work."

The TEAP conducted its analysis of future TEAP configuration and presented its conclusions at the 47th OEWG. Given the substantial work in the period 2025-2026, the TEAP needed near-term stability to deliver all of its required analyses and reports (e.g., replenishment and quadrennial assessments), so the panel recommended retaining the current structure for the TEAP and its TOCs and asked parties to consider any future changes to come into force no earlier than 2027.

At an informal group meeting held during the 37th Meeting of the Parties (MOP) in Nairobi (November 2025), parties requested the TEAP to further elaborate on possible options for organisation of the TEAP and its technical options committees (TOCs) in its 2026 Progress Report. The TEAP reconvened the Working Group that prepared its response to Decision XXXV/20 (contained in the TEAP 2025 Progress Report) and presented further analysis for the consideration of the parties. Preferred options presented for the TOCs reflected practicalities of managing near-term anticipated changes within the committees over the next few years (i.e., normal attrition, lack of support for participation, recruitment of new members) as well as gaining more experience, for at least the largest two TOCs, with working through subcommittees structures.

The informal group met again at the 48th OEWG meeting in Bangkok to continue this discussion. Parties attending the informal group meeting requested that the topic remain open until the upcoming 38th MOP, and some parties asked specific questions for the TEAP to provide answers and further elaborate on this matter. These questions and corresponding answers from the TEAP are submitted below, as a basis for further discussion during the 38th MOP in Kigali.

The TEAP is grateful for the support of parties in considering its structure in the context of a Protocol which continues to evolve. This context is important, especially the expanded workload and broader range of topics.

Parties' questions to the TEAP on its organization

Can you provide more information about the TEAP's succession planning?

- To support the continued success of the Protocol, the TEAP needs to be a stable organization to deliver consistent, relevant and high-quality reports required by the parties for their deliberation

- TEAP members are appointed for a period of up to 4 years. They have had extensive prior experience in the TEAP or its TOCs. They have demonstrated strong leadership and interpersonal skills. They carry an extensive workload coordinating the regular reports and responses to new decisions of parties.
- TEAP and TOC co-chairs are continuously looking across its membership (e.g., from TOCs and TEAP Task Forces) as well as outside the TEAP and TOCs for new volunteers to take on the considerable workload and commitment required to be a TOC co-chair. Appointments are by decisions of the parties, but almost always by recommendation from the TEAP, coordinated through the regularly updated matrix of needed expertise.
- It is important that changes to the TEAP structure is done in an organized and planned manner to minimize disruption and so that sectoral and Protocol experience and expertise must be maintained while at the same time bringing in new members with newly needed expertise.
- The TEAP also identifies potential new members through its members networks. TEAP members are acknowledged experts in their various field(s) and liaise with other similar experts in the same field

The challenges to recruiting experts with the relevant expertise, experience, and availability for TEAP succession planning are substantial:

- Experts must have sufficient expertise and be able to volunteer extensive time to review and analyse technical and economic information to write reports for parties.
- Experts must be able to work independently (not representing companies or countries).
- Experts serve as volunteers, without administrative assistance or compensation.
- Experts participate in many online meetings. The introduction of multiple online meetings has changed the nature of the work with more frequent meetings. Online meetings are often outside normal working hours to accommodate the range of time zones, with impacts on personal time and commitments. While online meetings are useful for preparation, face-to-face meetings remain important for the technical debates and discussions necessary for the TEAP's work and for the development of consensus decision making, particularly on complex cross-cutting topics.
- Experts on the TEAP typically travel up to four times a year, with additional requests from parties or institutions of the Montreal Protocol to attend workshops and other meetings

In your view, what does the TEAP need from the parties to help it with its succession planning and its long-term viability?

- Help identifying new and independent experts for TOCs with proven knowledge/ experience in the topic areas. Being mindful that TEAP members are NOT political appointments and do not represent their party and/or employer.
- Consideration of TEAP and TOCs capacity (workload) when requesting new decisions
- Aligning new and standing decisions with existing regular reports.
- Reconsideration of standing decisions that may be duplicative in its requests to the TEAP.
- Consulting the TEAP on the feasibility to deliver requested information and accepting that some requests cannot be fully responded to (due to lack of sufficient information, funding, and/ or time)

- Being mindful that the TEAP and TOC members are working on a pro-bono basis and are part of the broad team of Montreal Protocol institutions, which assist parties to reach a common goal.

Could the TEAP provide more information on its working arrangements?

- TEAP co-chairs have a weekly call to plan strategy, workloads, etc.
- TEAP co-chairs have occasional face-to-face and on-line meetings for coordination with SAP and EEAP co-chairs.
- TEAP co-chairs have regular calls with the Ozone Secretariat
- The TEAP meets on-line at least once per month, usually attended by the Ozone Secretariat to provide updates and support.
- The TEAP meets face-to-face for one week in April every year, ahead of its finalization of its annual progress report
- The TEAP also meets prior to OEWG and MOP, with at least 2 days preparatory meeting at the weekend prior to the main meetings and with additional ad hoc meetings for Task Forces, Working Groups, etc. The TEAP takes the opportunity to meet daily during those meetings to plan and progress its work and deliverables in the sidelines.
- TEAP and TOC co-chairs prepare reports and presentations to be delivered at Protocol meetings. These are reviewed by TOC members, and by TEAP members as they are TEAP consensus documents.
- TOC co-chairs meet regularly online with members, sometimes weekly or more, to discuss, progress, and manage tasks within TOCs or Task Forces.
- TOC co-chairs may have additional coordination with external bodies and/or attend/present at external meetings on an important topic, e.g., FSTOC co-chairs attend meetings with civil aviation industry and the International Civil Aviation Organization (ICAO) and MBTOC co-chairs prepare reports for the IPPC (International Plant Protection Convention) annual meetings.
- Most TOCs meet face to face for two to four days in Q1 each year (depending on workload). Some TOCs (e.g. MBTOC) take the opportunity of these meetings to visit facilities and view the use of alternatives to controlled substances and to understand their suitability to other country situations.
- TOCs meet ahead of the April TEAP meeting so that the information and updates are discussed by the TEAP to produce the consensus Progress and other Reports by mid-May for submission to OEWG. Subsidiary bodies, such as Task Forces, and TEAP internal working groups are convened in response to tasks assigned by the parties and meet as necessary (most often on-line but face-to-face is often also required).

Replenishment Task force (RTF)

- RTF co-chairs work with the Ozone Secretariat on membership nomination and consultation with parties. RTF also consults the Secretariat on the data reported under Article 7 and on any relevant decisions of the Parties.
- RTF co-chairs meet once a week to plan and review work at hand. RTF co-chairs also meet once or twice a week with report chapter leaders, drafting and modelling teams, and twice a month with full task force.

- RTF co-chairs finalise the report outline, set up the report template, manage the drafting and editing of the report, and finalise the report before and after Task Force and TEAP review.
- RTF co-chairs and modelling team meet with the secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol (MLFS) before, during and after report is drafted, and share draft with MLFS for factual corrections before finalizing and posting the report.
- The RTF modelling team spends hundreds of hours analysing A7 and Country Programme data, developing models and cross-checking assumptions to develop ranges of estimates for RTF.
- The RTF meets online as needed, and once face to face, at the MLFS in Montreal. Once the terms of reference (TOR) are approved at the MOP in the year prior to the replenishment year, the RTF co-chairs attend the MLF/Executive Committee (ExCom) meeting for consultations with ExCom parties (and coopted members attending), as well as the Implementing Agencies. During the Replenishment year, RTF co-chairs and/or some designated members also attend the ExCom prior to the OEWG meeting.

What is the support you receive from the Secretariat?

The Ozone Secretariat assists TEAP/TOC/Temporary Subsidiary Body (TSB) co-chairs with organization of meetings (travel arrangements for experts from Article 5 (A5) parties, letters for processing visas, venues/ vendors, meeting rooms at meetings of the OEWG and MOP); with final formatting of TEAP/TOC reports after these are submitted for posting; with follow-up and posting of DOIs of TEAP/TOC/TSB members; with guidance on processes and procedures under the Protocol; with access to reported country data; with coordination and communication, as needed, with parties; and with supporting the coordination across the three panels.

USA

Can you reflect about the role of Task Forces (TFs) and Temporary Subsidiary Bodies (TSBs) in your report?

- A TF is a TSB. TFs are formed in response to party decisions; they provide the opportunity of in-depth analysis on a specific topic requiring broader expertise than might be on the TEAP or on a TOC alone. External experts can be involved if TEAP's expertise needs to be complemented. A TEAP co-chair and/or another member may co-lead the TF/TSB. TF/TSB co-chairs use this opportunity to identify possible TOC/TEAP members with future leadership potential.
- The RTF is a specific example. The TEAP prepares the Replenishment Report every three years. Once the MOP approves the Replenishment TOR, there is a short time frame establish the RTF and deliver the report. The TEAP has therefore proposed forming a standing Replenishment committee to maintain /update the database based on new decisions and approvals of the Executive Committee of the MLF, and to maintain/adjust the working model as needed.
- The TEAP RTF consults with the MLFS on new policies, their application, interpretation and its implications in the RTF funding estimate. The RTF requires experience, technical and sector expertise, knowledge of MLF policies and regulations, and follow up of ongoing policy discussions at the ExCom.
- The TEAP strives to achieve A5 and non-A5 participation, gender and geographical balance of TF membership of experts with pertinent knowledge.

Could you consider reporting only on issues specifically requested by parties and find other ways to convey your progress reports? Do you expect that the frequency of the meetings will change if there is more reliance on decisions rather than progress reports?

- Progress Reports form the basis of the ongoing TEAP contribution between the quadrennial and quintennial assessment reports. They provide an annual flow of information which informs the decision making of the parties. They are the method for the TEAP to convey new important information to the parties faster than through assessment reports, e.g., civil aviation plans on continued use of halon 1301. They are also a standing opportunity to raise emerging issues of immediate importance to parties and of which they might be unaware, such as unexpected CFC-11 emissions.
- Generally, TOCs meet in person in Q1 each year when the progress reports for each TOC are prepared and then this information flows into the face-to-face TEAP meeting in April. This generates a large part of the consensus Progress Report in May, which provides the parties with information for the OEWG, and for decisions at the MOP. The TEAP also uses the progress report to bring to parties' attention emerging cross-cutting issues like per- and polyfluoroalkyl substances (PFAS), which is of relevance to the alternatives to controlled substances under the Montreal Protocol. Some of these issues are fast moving within the quadrennial cycle.
- The TEAP attends the meetings of the OEWG and MOP to present the Progress Report and respond to questions from parties. The TEAP does not itself anticipate making any major change in the frequency or flow of its meetings, which are effective for parties within the current frequency of their meetings.
- The TEAP considers that face-to-face meetings are important to preserve expertise, maintain consensus, momentum, and adherence to our TOR.
- Many meetings are already on-line, and these are increasing in frequency. For example, in TEAP meetings members are working simultaneously in different time zones, potentially affecting both work and personal schedules.
- Some TOCs might not need to meet every year. For example, the TEAP is considering on a case-by-case basis whether each TOC will need to meet in person in 2027, the year after completing its 2026 Assessment Report. During 2026, TEAP and its TOCs have delivered ten reports including two replenishment reports.
- The work carried out by TEAP and TOC members is entirely voluntary, without Montreal Protocol compensation or fees. TEAP has estimated the equivalent cost of this pro-bono work through consulting contracts at approximately US$ 8.8 million annually.

The MBTOC provides information about uses that are not controlled. What are the reasons for annual in person meetings and associated costs?

- Methyl bromide (MB) is the largest ozone-depleting chemical included under the MP and exempted from controls. Each year new regulations impact alternatives and use of MB, making annual review by MBTOC necessary. Also, there is potential for MB uses in some parties to be incorrectly classified as exempted quarantine and pre-shipment (QPS) uses due to confusion or difficulties of interpretation. MBTOC regularly overviews MB consumption and production, surveys uses, endeavours to get information and clarity on detailed QPS uses and their alternatives, and reports on emissions and illegal trade.
- In response to the phase out of non-QPS uses, the MBTOC has reduced in numbers to be more fit for purpose and has reduced over time from 43 (once 73) to 16 members with more targeted knowledge on QPS issues. Some members will retire this year and

there is need for replacing expertise on where MB is essential for international trade of agricultural goods (specifically those in main categories of QPS use), understanding and interpreting MB emissions, and on alternatives to QPS uses. Although some of this expertise is already held by members of the MBTOC, further changes in the membership are envisioned. In various countries, health hazards concerns associated to MB use are driving legislation to restrict MB use, and this is putting pressure towards adoption of alternatives for QPS uses.

- The re-focussed MBTOC still needs two co-chairs (one A5 one non-A5) and one face-to-face meeting per year, to produce a progress report, maintain momentum of the topics, gather important information on-site through field visits and ensure continued engagement of relevant experts. Although MBTOC meets virtually on a periodic basis, annual face-to-face meetings are essential to keep track of emerging trends particularly with QPS alternatives and/or regulations impacting MB uses for QPS. Co-chairs, being members of the TEAP, continue to attend MP meetings and remain current with developments and needs of the Protocol, in contact with parties as needed, and able to guide the membership accordingly.
- With the smaller membership the associated costs of MBTOC have become lower and will continue to reduce in the short term. The length of meetings has already been reduced to four days and may be further reduced to three days in some years. Periodic virtual meetings will continue.
- It is also important to note similar issues with other committees. For instance, the MCTOC provides information about feedstock production that is also information of use to parties of controlled substances exempted from current provisions of the Protocol. If parties agree that they do not want the TEAP to report on uses that are not controlled, as a general category, then some clarity on that might be needed in a decision.

To what extent is the MBTOC's situation similar to that of the work on metered-dose inhalers (MDIs)?

- When the TEAP work on CFC MDIs was complete, the Medical TOC merged with Chemical TOC to form the new MCTOC. With the phasedown of HFCs, MDI group of MCTOC has continued as a sub-committee of MCTOC along with Aerosols.
- MB is an ODS which is still used in sufficient quantity to meaningfully impact ozone recovery. MBTOC requires specialist knowledge in agricultural pests and crop production, and on international trade and regulations of agricultural goods. No other committee has similar skills.

How can the TEAP respond to the fact that the work has been completed in some areas?

- The TEAP has considered how to retain expertise for any TOC with a diminishing workload. This could occur through the absorption into another TOC and/or by retaining experts as senior expert members. The TEAP has a role to preserve the institutional memory for the Protocol. For example, when issues like unexpected CFC-11 emissions arise, expertise in older generation technologies becomes critical in providing advice to parties in a timely way.
- The TEAP does not consider its work on Methyl Bromide has been completed. TEAP reports on compliance and illegal use of MB, by benchmarking bottom-up data with Scientific Assessment Panel (SAP) top-down atmospheric data. This is the key means to reveal potential non-compliance. QPS uses of MB are not controlled, but there are alternatives for the PS uses (about half of QPS). Illegal diversion of MB from QPS uses to

controlled use is likely to occur. t so that he possibility of diverting MB originally intended for such uses into controlled non-compliant uses (or illegal use) is more likely to occur. Monitoring emissions remains essential for sustaining compliance and maintaining the phase-out.

- The TEAP welcomes further information from parties on those areas considered complete.

CANADA AND EUROPEAN UNION QUESTIONS (overlap)

Regarding the TEAP's suggestion for the organization of the MCTOC, it seems that the Chemicals subcommittee will be dealing with many issues (e.g., HFC-23, feedstocks, VSLS, end-of-life destruction) while the Medicals subcommittee with just aerosols and pressurized metered dose inhalers (pMDIs). Can you provide more information to help the parties understand whether there is an appropriate balance between the subcommittees?

- The Medical/Aerosols subcommittee addresses pMDIs and aerosols, including issues relating to patient safety, medical need, regulatory approval, manufacturing capacity, access in Article 5 Parties, and the management of technology transitions and other aerosols issues. The transition of pMDIs is taking place globally and may have significant implications for patient health. It therefore requires substantial work and specialised medical, technical and regulatory expertise, even though the number of headline topics may appear relatively limited.
- The Chemicals subcommittee addresses a larger number and a wider range of topics, including HFC-23, feedstocks, very short-lived substances, and end-of-life and lifecycle management. This work requires broad and diverse technical expertise. The two subcommittees have different workloads and require different types of expertise. These differences need to be taken into account when considering the appropriate membership and co-chairing arrangements for each subcommittee.
- Several issues currently benefit from close coordination between the two subcommittees, including MDIs and their propellants, the HFC phase-down, PFAS-related considerations, and end-of-life and lifecycle management. At this stage, maintaining the Medical/Aerosols and Chemicals subcommittees within MCTOC provides the most practical and efficient arrangement, helping to minimise potential duplication and additional coordination requirements. It also facilitates the exchange of expertise, cross-sectoral analysis, and the provision of consistent advice to Parties on these interrelated issues.
- The MCTOC will continue to review the workloads and expertise requirements of the two subcommittees as their work evolves. As the transition of aerosols and pMDIs to lower-GWP propellants, including HFOs, progresses and the longer-term workloads and expertise requirements become clearer, there may be scope to consider the balance between the subcommittees, including whether separate TOCs might offer an appropriate arrangement in the future or not. The current clear consensus view of MCTOC is to maintain the current structure with an additional co-chair to manage workload balance.

The MBTOC is currently the only TOC that does not address any controlled uses. What are the financial implications of its operation, depending on the number of its members? What is the reasoning behind the TEAP's recommended option?

- Please refer to the answer provided to the US above.

- The MBTOC has a substantially reduced number of members compared to the past (i.e. from 43 to 16) which reflects the change in workload.
- In 2025, MBTOC meeting venue costs were $2000. Eight A5 members were funded for travel/DSA for attendance (~$32,000 total)[1]. Reduced membership will reduce travel-related costs further (fewer A5 members), however as stated above, TEAP considers MB to still be a very relevant topic to the Montreal Protocol and that continuing the MBTOC is essential at this time.

Some TOCs have more work more than others. How does this impact the organization of TEAP?

- The RTOC and MCTOC have larger committees and cover a wide range of topics. RTOC has successfully pioneered a structure with 4 co-chairs to manage its range of topics. In addition to the organizational structures within RTOC and its assessment report, the meetings cadence helps with keeping the team focused on the tasks: RTOC co-chairs meet weekly online, the entire committee meets once every other month initially and increase frequency to monthly online meetings; smaller groups within RTOC meet online as needed, the RTOC co-chairs meet once a year face to face at the annual TEAP meetings in April as well as at meetings of the OEWG and MOP , and finally, the entire RTOC meets face to face in the second, third and final year of the assessment report quadrennium cycle.
- The MCTOC has adopted a similar sub-committee structure and proposed a 4th co-chair in 2026 to assist with the workload for the current 3 co-chairs.

Are the size and composition of TEAP fit for purpose?

- The TEAP is currently comprised of TEAP co-chairs (3), TOC co-chairs (12), and senior experts (6). It is important to maintain TEAP size and expertise at approximately this size, in order to manage and share the workload. Some TOC co-chairs do carry more load, but this cannot be excessive for a specific person. Each TOC and TF in the TEAP can have important cross referencing for other topics addressed by different TOCs, especially where there is overlap. This is especially true for specific working groups, and task forces, such as RTF, which require different sector consideration and expertise, some of which is covered by external members, but mostly by TOC-co-chairs and Senior Experts.
- If the number of TOCs is reduced, it will be critical for larger TOCs to have more co-chairs in order to maintain workload balance.

Which elements were relevant in the past that may be updated for the future?

- Senior Experts have specific expertise that the TEAP needs. In future, senior experts will no longer also be TOC members. No near-term change is anticipated except for future succession planning.
- The RTOC is functioning well – Membership review is underway and no organisational change is currently needed.
- The FSTOC is at an important point with the increasing use of halon 1301 on aircraft, the likely need for an essential use nomination in the future and the increased liaison with

[1] https://ozone.unep.org/system/files/documents/OEWG48-4%20Add%201.pdf

ICAO. Membership review is underway, but no significant organisational change is anticipated.

- The MCTOC covers many topics /multiple decisions and needs more support. As part of re-balancing in 2026, TEAP proposes a 4th co-chair with medical/aerosols expertise for the Medical and Aerosols subcommittee. TEAP and MCTOC will review the sub-committee structure in the future to make sure it is functioning well and then consider if a future option to split to separate CTOC and MTOC would work better.
- The MBTOC has already reduced in size, with further retirements anticipated. It will seek to maintain its membership at around 10-12 at the same time as strengthening its QPS focus.
- The FTOC has already reduced its size (~17 members) in 2025/2026. It is working to maintain sufficient expertise and increase virtual working.