

Technology and Economic Assessment Panel

Progress of work and emerging issues
32nd MOP high-level segment



TEAP

32nd MOP Virtual meeting
23-27 November 2020

TEAP 2020

Bella Maranion, co-chair	USA	Fabio Polonara	IT
Marta Pizano, co-chair	COL	Roberto Peixoto	BRA
Ashley Woodcock, co-chair	UK	Ian Porter	AUS
Omar Abdelaziz	EGY	Sidi Menad Si-Ahmed	ARG
Paulo Altoé	BRA	Rajendra Shende	IND
Suely Carvalho	BRA	Helen Tope	AUS
Adam Chattaway	UK	Dan Verdonik	USA
Marco González	CR	Helen Walter-Terrinoni	USA
Sergey Kopylov	RF	Shiqiu Zhang	PRC
Kei-ichi Ohnishi	JP	Jianjun Zhang	PRC

TEAP 2020 meetings and reports

- Except for MBTOC and HTOC face-to-face meetings early in the year, 2020 meetings of the TEAP, its TOCs and its TFs were held virtually.
- TEAP completed all due reports within the required deadlines:
 - TEAP Progress Report (May 2020)
 - TEAP Evaluation of 2020 critical use nominations for methyl bromide and related issues - Interim report (May 2020)
 - MBTOC Responses to Comments
 - TEAP Decision XXXI/1 Replenishment Task Force (RTF) Report: Assessment of the funding requirement for the replenishment of the Multilateral Fund for the period 2021-2023 & Corrigendum (May 2020)
 - TEAP RTF Responses to Comments (October 2020)
 - TEAP Evaluation of 2020 critical use nominations for methyl bromide and related issues - Final report (September 2020)
 - TEAP Decision XXXI/7 Energy Efficiency Task Force Report: Continued provision of information on energy-efficient and low-global-warming-potential technologies (October 2020)

TOCS UPDATES: SECTOR HIGHLIGHTS & EMERGING ISSUES



TEAP

32nd MOP Virtual meeting
23-27 November 2020

Rigid and Flexible Foams TOC

Blowing Agent Transitions

- The transition away from HCFC-141b continues in A5 parties, and HFOs and HCFOs are gaining market share to meet high energy efficiency standards globally.
- New blends continue to be developed, and there is increasing production of low GWP alternatives including new products: HCFO-1224yd(Z) and HFO-1336mzzm(E).
- At least one company is reportedly testing hydrocarbons as a blowing agent (BA) for spray foam. FTOC will continue to monitor due to safety concerns.
- The low price of high GWP HFCs, particularly HFC-365mfc, a product banned in developed economies, seems to be an obstacle for conversion to low GWP BAs.

Small and Medium Enterprises (SMEs)

- SMEs have started blending their own foam formulations rather than relying on larger system houses especially in India and China.

COVID-19 impacts

- Demand is lower for construction and refrigeration foams due to the pandemic.
- Raw material shortages have driven higher prices.
- Cost and lack of available supply of replacement blowing agents have resulted in some delays in transitions away from HCFC-141b
- FTOC was able to meet virtually several times in 2020.

Halons TOC

- The long-term availability of halons is becoming more unpredictable. This will affect all sectors, including civil aviation
- Some organizations with significant quantities of halon 1301 have the intention to destroy it. This would reduce the size of the halon 1301 bank, and the run-out date will occur much sooner than previously estimated 2034-2054 timeframe. This intention to destroy halon may have arisen in part due to the length of time that the Montreal Protocol has been in existence, resulting in the “loss of institutional knowledge”.
- The COVID-19 Pandemic has severely disrupted both civil aviation and the breaking of ships, and as a result halon emissions will be lower than in previous years. This would extend the halon 1301 run-out date, but by how much will depend on how quickly aviation recovers. It is unclear how a short-term delay in shipbreaking will affect long term availability of halon 1301.
- The HCFO-1233zd(E)/C6-perfluoroketone blend (already listed in ISO and NFPA standards) has recently been approved by the US EPA for total flooding fire suppression (normally occupied and unoccupied spaces. This blend represents a new low GWP alternative to halons and high-GWP HFCs for total flooding fire suppression.

Methyl Bromide TOC

Sector Highlights

- Approximately 84% of anthropogenically produced MB has been phased out leading to a similar proportion of reduced emissions and contributing to around 33% of the present ozone layer recovery.
- QPS consumption of around 10,000 t annually is now the dominant use of MB. Some regions increasing use by 25%. Accurate reporting of QPS categories of use would clearly contribute to development and adoption of alternatives.
- Efforts to reduce emissions from QPS uses would achieve the best short term benefit to ozone layer recovery.
- MB for critical uses continues to decline; however, use of substantial stocks (approx.1,500 t) for critical uses makes the level of adoption of alternatives unclear.

Emerging Issues:

- Some countries are reducing MB emissions in QPS through alternatives agreed under bilateral trade arrangements, and through the implementation of re-capture and recycling systems for MB.
- An analysis of the feasibility and economics of MB recapture would support its implementation, reducing MB emissions whilst retaining MB use for QPS where essential.

Medical and Chemical TOC

- 2 Pharmaceutical companies have announced development of MDI formulations containing new propellants, hydrofluoroolefin (HFO)-1234ze(E) and HFC-152a.
- Atmospheric-derived emissions and emissions trends of CFC-113/113a are higher than expected based on reported production of feedstock uses. A comprehensive understanding of production/use of CFC-113/113a as a feedstock or intermediate would contribute to a better understanding of global and regional emissions.
- Global HFC-23 emissions were at their highest level in 2018, compared with expected HFC-23 emissions as by-product from HCFC-22 production. Planned reductions in HFC-23 emissions may not have been fully realised or there may be unreported HCFC-22 production.

Refrigeration, Air Conditioning and Heat Pumps

Safety Standards

- *IEC 60335-2-89* (commercial refrigeration) revised to include larger charges of flammable refrigerants.
- *IEC 60335-2-40* (AC) towards the safe use of A3 (hydrocarbon), A2 and A2L refrigerants in room AC (voting and publication in 2021)

HCFC-22

- Market share for HCFC-22 shrinking in A5 parties (< 50% new equipment)

Energy Efficiency

- Inverter technology increasingly adopted to meet MEPS in AC

COVID-19

- Reduction in production, sales, refrigerants and installation of RAC
- RACHP associations publish guides on optimal ventilation and air conditioning systems to prevent the spread of COVID-19 in closed environments
- Temperature sensitivity of vaccines means cold chain needs careful assessment
<https://www.seforall.org/news/sustainable-cold-chains-needed-for-equitable-covid-19-vaccine-distribution>

Replenishment Task Force

- Decision XXXI/1 requested the TEAP “to prepare a report for submission to MOP-32, and to submit it through OEWG-42, to enable the MOP-32 to adopt a decision on the appropriate level of the 2021–2023 replenishment of the Multilateral Fund (MLF)”
- TEAP formed the Replenishment Task Force (RTF) with TEAP, TOCs, and outside experts; held one meeting face-to-face and several online; RTF co-chairs interacted with MLFS for data accuracy
- RTF activities, reports and documents:
 - Dec. 2019: RTF members attended ExCom-84 in Montreal
 - January 2020: RTF members met at MLFS office in Montreal
 - May 2020: *TEAP Decision XXXI/1 RTF Report & Corrigendum* – presented at OEWG-42 online technical sessions 14-16 July
 - Oct. 2020: *TEAP RTF Responses to Compilation of Comments Submitted by Parties*
 - Mar. 2021: OEWG-42, part II, on replenishment planned 15-16 March 2021, Montreal
 - *TBD: RTF Supplementary Report and presentation*

Energy Efficiency Task Force - Decision XXXI/7

- “Report for consideration by 32nd MOP, addressing any new developments with respect to best practices, availability, accessibility and cost of energy-efficient technologies in the refrigeration, air-conditioning and heat-pump sectors as regards the implementation of the Kigali Amendment to the Montreal Protocol”
- 26 members and 2 Consulting experts (7 female, 21 male); (16 A5, 10 non-A5). EETF has completed all its work on-line. Report Published as Advance Oct 2020, Final Nov 2020. EETF Report likely be discussed at OEWG-43 (July 2021) and MOP-33 (Oct 2021)
- https://ozone.unep.org/sites/default/files/assessment_panels/TEAP_dec-XXXI-7-TFEE-report-september2020.pdf
- EETF Report will be discussed ~ one year after posting. If significant new information becomes available, the EETF will provide updates as appropriate.
- “The importance of a combined strategy to improve energy efficiency of cooling equipment while phasing down HFC refrigerants under the Kigali Amendment to the Montreal Protocol is increasingly being recognized as one of the biggest climate mitigation opportunities available today”.

CFC-11 Task Force

- At MOP-31, in decision XXXI/3(7), parties requested TEAP to provide an update to information provided under decision XXX/3(2) on unexpected emissions of CFC-11. The report will be presented to parties in 2021 in time for the relevant meeting.
- TEAP formed a task force, combining expertise from TEAP and its TOCs, and from outside experts.
- During 2020, the task force has been meeting online to prepare its report.
- A Science Symposium was held online to understand the latest findings and scientific publications, involving the SAP and leading global experts.
- A co-chair of the task force is also participating on the SAP report being prepared to respond to decision XXX/3.
- To align with the latest science findings and publication of the SAP report, publication of the TEAP Task Force Report has been deferred to 2021.

2022 Assessment Reports

- MOP-31 Decision XXXI/2 established the TOR for the Panels for the quadrennial assessments.
- TEAP and its TOCS have done advanced structuring, organization, and TOCs have begun their work.
- TEAP is coordinating with SAP and EEAP on crossover issues for the assessments, which will then form the basis for the Synthesis Report.

Upcoming Work in 2021

- TEAP RTF Supplementary Report
- TEAP CFC-11 TF Report
- TEAP EETF Update Report
- TEAP Progress Report
- CUN Interim/Final Recommendation
- Preparatory work for Assessment Report