The 2022 quadrennial assessment of the Montreal Protocol (decision XXXI/2):

(a) Presentations and discussion on issues arising from the 2022 quadrennial assessment and synthesis reports of the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the Technology and Economic Assessment Panel

Questions

-to SAP

- Which reduction of emissions could have the biggest short-term effect and magnitude to further reduce the **Equivalent Effective Stratospheric Chlorine** (EESC)?

- Which reductions of emissions could have the **biggest gain for fighting climate change,** in the short and long term?

- Discrepancies between UNFCCC parties reporting data and atmospheric observaiotns: what are the main reasons for these discrepancies?

- Update on **stratospheric injection/solar radiation management**; most recent developments/findings/legal framework

-to EEAP

- Issue of **TFA**

- Accumulation in plants presented. Evidence of phytotoxic effects?
- Focus on global loads in ocean presented, however the dilution factor is of course very large in an ocean; rather smaller sinks in surface water might be more relevant; what is the accumulation factor there and its relevance for aquatic organisms; need for further study?
- Since TFA concentration in rainwater is growing[1], also due to an uptake of TFA-forming substances such as HFOs and certain HFCs, how can we avoid that TFA concentration becomes a threat to drinking water resources in the future? To freshwater organisms such as plants?
- TFA is very persistent in the environment. Is there an effective way to remove TFA from the environment once it is out there?
- The EEAP says "Growing TFA concentrations are not expected to harm the environment over the next few decades, although some regional concerns are being raised."

  Cld you explain what is the bases for that conclusion? Has a large-scale assessment been made with an overview of all available studies on TFA? Are all sinks and effects of TFA in the environment already exhaustively researched and

[1] Freeling, F. et al.: Trifluoroacetate in Precipitation: Deriving a Benchmark Data Set. Environ. Sci. Technol. 2020, 54, 11210−11219)

known? What timeline doe you mean by "over the next few decades"? Where do you see the largest data gaps on this issue?

-to TEAP

- RACHP: What sectors/which equipment can be covered by natural alternatives? What are their penetration rates?

- Fire fighting: What is the uptake of alternatives to halons in other world regions?

- Plant protection: Have there been any exchanges with Rotterdam on PIC for MB?

Discussion

- SAP

  - Worried about R23 discrepancies
  - Issue of DCM
  - CTC
  - CFC-113 and other traditional ODS…
  - VSLS
  - Discrepancies between atmospheric observations and bottom up estimates and reported data
  - **Feedstock use** appears to be a crucial area for a number of emitted chemicals relevant to the ozone layer and the climate. We will need to continue exploring ways of getting more insights into this sector and better ways of monitoring such emissions.

- EEAP

  - Issue of **TFA**
    - thank EEP for detailed work.
    - However, focus should be on more on the effects on the environmental effects, and not advising policy makers what and how to regulate.
    - Precautionary principle with regard to highly persistent chemicals
    - Growing evidence, highlight the several fold incrases in precipitation and in plants accumulation
    - Agree that continued monitoring is important and relevant gaps are filled
    - Highlight the findings that there are large fugitive emissions of TFA around chemical plants

- TEAP

- Relevance of **PFAS restrictions** (PR). The report focuses on the disadvantage of the intended PFAS restriction proposals and a potential delay for the phase-out of ODS and phase-down of high GWP HFCs.In EU in some critical sectors such as small

heatpumps already transitioning to naturals (propane), so PFAS can be avoided already in many sectors.

- **Energy efficiency**. The assumption of energy efficiency limitations in medium sized RACHP-systems, if PFAS refrigerants are not available anymore, is too general and cannot be supported in this strict formulation.
- **MDI propellant alternatives**
    - Companies in EU have announced the market introduction of new propellants in 2025 and a switch of the complete portfolio by 2030
    - The new Fgas rules will encourage the switch to new propellants through the quota system.
    - Guidelines for manufacturers of MDIs to apply for authorisations have been issued by EMA
    - EMA has also had talks with partner agencies in other world regions
    - Issue of availability of R134a for others? Need for global coordination
- **Sulfuryl Fluoride** (PR). In some EU Member States, it is mandatory to use the waste gas purification equipment during degassing for container fumigation with SF, for new plants and for old plants, provided it is (PLR) technically feasible. This could be added in the report.
    - In addition to mandatory recapture, the revised F-gas regulation will foresee reporting obligations for manufacturers, importers, exporters, destroyers, reprocessors of SF.

- **Aerosols**: Parties may wish to consider aersosol redutions, in EU prohibited, but with safety exemptions
- Issue of **Banks**
    - Accelerated action on the management of EOL ODS/HFCs might increasingly be considered a priority under national greenhouse gas emissions mitigation
    - how the Montreal Protocol, the UNFCCC, and the Basel Convention can work together to facilitate transboundary movement of EOL ODS/HFCs to encourage preferential recovery/recycling and reclamation (best option) or environmentally sound destruction of EOL ODS/HFCs
    - Byproduction emisisons of PFC-c-318 (higher than R23)
- **Reporting issue**: Semiconductor use should not be reported as feedstock use
- **Destruction**
    - **We note the recommmendations of TEAP on destruction technologies. As our domestic legislation will be closely bound to the approved technologies under the Protocol, we are thinking of drafting a CRP to update the approved technologies, following the technical advice given. WE intend to present the CRP during this week in plenary.**

(b) Information on the consumption and production of hydrofluorocarbons not listed in Annex F (decision XXIX/12);

Questions

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Discussion

- Tnx for comprehensive work
- There are a number of substances beyond the controlled substances that are relevant and used in relevant quantities that lead to emissions
- PFCs, HFEs, HFOs, thanks for raising; may want to come back to these substances at some point; further monitoring important; we do regulate these substances in EU
- In the EU we will be banning SF6 in all new switchgear, from ca. 2026-2032
- We will also address inhalation anaesthetics, by requiring that measures are taken to prevent emissions and recapture systems should be used
- Three HFCs mentioned that require further monitoring of the issue. Keep monitoring.
- We might want to explore ways of aligning reports to minimise the workload for the TEAP and other APs

(c) Information on the availability of hydrochlorofluorocarbons (decision XXX/2, para. 4);

Questions

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Discussion

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(d) Update to the report of the working group of the Technology and Economic Assessment Panel on information on alternatives to hydrofluorocarbons (decision XXVIII/2);

Questions

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Discussion

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(e) Potential areas of focus for the 2026 quadrennial assessment;

- *EU will present a draft CRP*

(f) Any other issues.

- *EU will present a draft CRP on destruction, either under this item or under (a)*