

"At a time when multilateralism is under severe strain, the Montreal Protocol to help protect the ozone layer stands out as a powerful symbol of hope. Now, it's time to go further."

- UN Secretary-General António Guterres, 16 September 2024

The state of our climate is now critical. 2023 was the hottest year on record, with global mean temperatures reaching 1.18°C above their 20th century average.[1] Already in 2024, we have experienced the hottest day on record (22 July) and the hottest June and August; it is likely this year will surpass the 2023 record.[2]

Alongside spiralling temperatures, the unprecedented levels of greenhouse gases in our atmosphere are driving a sharp increase in extreme weather events, including droughts, wildfires, hurricanes and floods.[3]

Ocean heat too is at a record high.[4] Glaciers and ice sheets are melting at an accelerating pace and sea level rise has sped up dramatically.[5] People the world over are now experiencing firsthand, and in ever greater numbers, the devastating impacts of a climate system in turmoil.

As delegates gather in Bangkok for the 36th Meeting of Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (MoP36), the need to act faster and go further in our climate ambitions could not be clearer.

At MoP36, Parties will discuss a range of long-standing issues that continue to threaten the Protocol's legacy — gaps in the atmospheric monitoring network, remaining banks of ozone-depleting substance (ODS) and growing banks of HFCs, ever-increasing emissions linked to feedstocks and exempted production-related uses. Paths forward to address these challenges are long overdue and should not be delayed any further.

New threats too, such as those posed by emissions of nitrous oxide (N_2O) and very short-lived substances (VSLS), must be examined and addressed. And underpinning all of the Montreal Protocol's work is the ongoing need to strengthen the treaty's institutions, including to prevent illegal production, use and trade of controlled substances.

The legacy of the Montreal Protocol is one of delivering above and beyond its initial remit. UN Secretary-General António Guterres has described the Montreal Protocol as a "powerful symbol of hope", calling on Parties to now go further.[6] At MoP36, EIA calls on all Parties to embody the spirit of the Montreal Protocol once again and to demonstrate it truly is the world's most successful environmental treaty.

Emissions of HFC-23

Emissions of HFC-23, a potent greenhouse gas, reached a record high of 17,300 tonnes per year in 2019, equivalent to more than a quarter of a billion tonnes of carbon dioxide equivalent (254 $MtCO_2$-eq).[7]

Since 2020, the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer has required Parties to capture and destroy HFC-23, which is primarily produced and emitted as an unwanted by-product of HCFC-22, an ozone-depleting substance (ODS) controlled by the Montreal Protocol.

Prior to the Kigali Amendment, multiple domestic, regional and international efforts have been made to address HFC-23 emissions, starting with the Clean Development Mechanism (CDM) in 2006 and followed by domestic legislation in most major producing countries and pledges by industry to abate the emissions.

Concern over the high emissions of HFC-23 has prompted two recent decisions by the Montreal Protocol aimed at further understanding potential emission sources as well as best practices to control them. Updated reports from the Technology and Economic Assessment Panel (TEAP) and the Scientific Assessment Panel (SAP) provide further information, but fail to close the gap between top-down (atmospheric monitoring) and bottom-up (reported inventories and other evaluations) estimates.[8]

Although the TEAP appears confident that all major sources of HFC-23 emissions have been identified, its ability to fully elucidate emissions sources is severely hampered by a significant lack of data due to industry confidentiality, as well as a plethora of monitoring and reporting inadequacies, including under-reporting of emissions recently exposed in Europe.[9]

The atmospheric monitoring data however is clear – emissions from China account for up to half of the global HFC-23 emissions gap over the period 2015-22. Although emissions decreased from 2019-22, they remain higher than anticipated, underscoring ongoing compliance issues and the need for effective monitoring and regulation in the fluorochemical industry.[10]

A strong response from the Parties to the Montreal Protocol is required. EIA calls on the Parties to:

- request additional information from the TEAP and SAP, using expert advice where necessary and involving the MLF Secretariat in order to resolve data reporting discrepancies and continued gaps in understanding emission sources, including a comprehensive analysis of HFC-23 emission from the production of polytetrafluoroethylene (PTFE), hydrofluorocarbons (HFCs) and hydrofluoroolefins (HFOs)
- elaborate on approaches used by Parties when measuring and reporting HFC-23 emissions and set guidance for Article 7 reporting and verification, including defining 'extent practicable' which includes the use of storage to avoid emissions during shutdown
- take immediate steps to minimise the consumption of HFC-23 in refrigeration, fire protection and other sectors through bans on the use of HFC-23 where alternatives exist
- develop an auditing framework for fluoropolymer production that would increase transparency and ensure that HFC-23 is destroyed
- strengthen targeted monitoring of greenhouse gas emissions from fluorochemical production sites and regional monitoring in key regions
- relay concerns related to HFC-23 emissions from chemical pathways to produce PTFE and other fluoropolymers to the UN Environment Assembly's ad hoc open-ended working group on a science-policy panel to contribute further to the sound management of chemicals and waste and to prevent pollution.

Lifecycle refrigerant management

EIA supports and encourages continued discussion on the sustainable implementation of key pillars of lifecycle refrigerant management (LRM), including leak prevention to minimise emissions and maximising refrigerant recovery for recycling, reclamation or destruction.

The TEAP LRM Task Force has estimated that full, universal implementation of leak prevention measures and best-practice end-of-life disposal for refrigeration, air-conditioning and heat pump (RACHP) equipment could reduce cumulative hydrochlorofluorocarbon (HCFC) and HFC emissions by approximately 39 billion tonnes of CO_2-equivalent ($GtCO_2$-eq) by 2050.[11] Effective implementation of these measures therefore represents an opportunity too significant to ignore.

As stated in the report of the 46th meeting of the Open-ended Working Group of the Parties (OEWG46), "in the face of the increasing devastation caused by the impacts of climate change, the question [is] not whether the Montreal Protocol should fully support the incorporation of lifecycle refrigerant management, but how quickly and fully it [can] do so."[12]

Sustainable financing pathways

While strong action supported by effective regulation is vital to achieving the greatest climate benefits from LRM activities, it is also important to consider how we finance the necessary infrastructure to support implementation. EIA has significant concerns about the emphasis currently being placed on carbon credit markets as an LRM financing pathway, including in the TEAP LRM Task Force report.[15]

EIA strongly opposes the sale of carbon offset credits to fund ODS and HFC destruction or reclamation because it undermines the potential climate benefits such activities can achieve. In both voluntary and compliance markets, the quantity of carbon credits generated from an activity is equivalent to the emissions reduced or avoided in CO_2 terms. As the generated credits are used to 'offset' an equivalent CO_2 quantity of ongoing emissions, no net reduction in terms of climate impact is achieved — instead, the avoided emissions are simply repackaged in saleable form and sold off as permissions to pollute elsewhere.

EIA has raised numerous serious concerns about carbon trading as it relates to ODS and HFCs, including the needless harm it permits to the climate system, the risk that offsetting derogates from the adverse effects provision of the Vienna Convention (Article 2.1) and the danger of creating perverse incentives. We encourage all Parties to see EIA's separate briefing "*Polluting the Protocol* " for further information on these and other issues of significant concern.[16]

In their discussions at the LRM Workshop, EIA urges Parties to consider sustainable pathways to finance LRM activities, including the Multilateral Fund (MLF) and product stewardship initiatives such as Extended Producer Responsibility (EPR).

The outcomes from this workshop, along with the TEAP's 2024 LRM report, will inform the report being prepared for the 97th meeting of the Executive Committee of the MLF to enable consideration of establishing a funding window in line with Decision XXXV/11.[17]

EIA strongly urges workshop attendees to focus financial discussions around LRM investment on sustainable financing options that maximise environmental benefits and do not risk undermining the Montreal Protocol's important climate protection legacy.[18]

The Multilateral Fund

Although the MLF was set up to support Article 5 (A5) countries in complying with their Montreal Protocol control schedules, it has also facilitated extensive funding and technical assistance for other measures related to the broad topic of LRM.[19] Of particular relevance, EIA wishes to remind Parties of the significant support for training and capacity-building that the MLF has provided in the RACHP servicing sector and the recently established funding window for "the preparation of national inventories of banks of used or unwanted controlled substances and a plan for the collection, transport and disposal of such substances, including consideration of recycling, reclamation and cost-effective destruction."[20]

EIA believes that support for A5 Parties' investment in equipment, training, infrastructure and policy development should be considered as critical elements during future MLF replenishment discussions. With this in mind, we hope that ultimately the Executive Committee will create an additional funding window to support the implementation of the bank management plans currently being developed, offering A5 Parties a chance to secure long-term solutions for their bank management challenges.

Extended Producer Responsibility

EPR schemes are based on the straightforward concept that an entity producing and selling a product should take on responsibility for minimising its environmental impacts at end-of-life.

There are several approaches to EPR which can be adapted to the unique needs of a sector or region, but broadly the common goal is to ensure that any costs for managing the disposal or recovery of a potentially harmful product are equitably distributed across the supply chain. This ensures it is the companies producing or generating profits from the sale of a harmful product that bear the cost of managing it at end-of-life, rather than its end-user or a third party.

In the case of ODS or HFC refrigerants, this means it would be the fluorochemical and RACHP producers that would bear this cost, rather than an individual owner or a service technician.[21]

Such practices have already found success in several regions, with multiple case studies outlined in the TEAP LRM Task Force report and in the briefing materials for the LRM workshop.[22] These case studies can serve as valuable examples, which EIA encourages all Parties to consider.

Recognising that fluorochemical producers have to date not been held to account for the significant environmental damage their products cause, EIA urges Parties to take the rare opportunity presented by the LRM workshop to hold a comprehensive discussion on the role that producers should be asked to play in addressing the myriad climate and environmental challenges their products go on to create.

Addressing the whole lifecycle of refrigerants

LRM is often discussed only in the context of addressing emissions during use of controlled substances and at equipment end-of-life. However, as noted in the Ozone Secretariat's briefing note on policies for LRM, taking a full lifecycle approach also necessitates addressing the production of fluorochemical refrigerants.[13]

This is particularly relevant to Parties' ongoing discussions around feedstock uses of controlled substances and should be borne in mind when considering the significant increase in emissions linked to fluorochemical production that have been recorded in recent years, including HFC-23.[14]

EIA encourages Parties not to exclude production-related emissions from LRM discussions and to seriously engage with the clear need to limit the feedstock exemption to address rising emissions from this crucial phase in the lifecycle of refrigerants.



Dichloromethane solvent for industrial use. ©Suriphon Singha, iStock

Controlling very short-lived substances

At OEWG46, Australia, Canada, the European Union (EU) and Switzerland jointly submitted a draft decision calling for more information to be gathered on very short-lived substances (VSLS).[23]

Responding to updated information on VSLS provided in the TEAP May 2024 Progress Report, this jointly submitted draft decision reflects the growing concern around increasing emissions of uncontrolled ozone-depleting VSLS. Of particular concern is the sustained growth in emissions of dichloromethane (DCM), which increased by an average 13 per cent annually between 2011-19.[24]

VSLS typically have atmospheric lifetimes of less than six months. This means that only a fraction of the halogens they contain make it to the stratosphere and quantification of their atmospheric impacts is more challenging than for longer lived ODS. Despite this, there is a strong body of scientific evidence that confirms emissions of chlorinated VSLS, mostly from anthropogenic sources, are a growing source of stratospheric chlorine and thus ozone depletion.[25] However, unlike longer lived ODS, the ozone-depletion potential (ODP) of VSLS varies according to when and where emissions occur.

Although the TEAP has highlighted to Parties that alternatives to chlorinated VSLS are available in several common feedstock and solvent applications (with more being researched and developed), use and emission of these substances continues to increase at pace.[26] It is estimated that between 2010-19, VSLS were responsible for an average of 2-3 Dobson Unit (DU) reduction in total column ozone (TCO) in springtime high latitudes and 0.5-1 DU reduction in TCO in the tropics.[27]

Furthermore, some VSLS pose wider health and environmental threats, both in themselves and through the products they are used to produce. Ethylene dichloride (EDC), for example, is used as a feedstock in the production of polyvinyl chloride (PVC), considered to be "the most environmentally damaging plastic and one of the most toxic substances for inhabitants of our planet."[28]

EIA firmly supports the jointly submitted draft decision on VSLS which seeks to draw together further information both from the TEAP and the SAP and, on a voluntary basis, from the Parties directly.[29]

A comprehensive understanding of VSLS is essential for Parties to make an informed decision on how best to tackle these significant, but so far uncontrolled, ozone-depleting emissions.

In the meantime, EIA urges all Parties to recognise the scientific consensus that chlorinated VSLS are a threat to stratospheric ozone and to act on the information already available to them concerning VSLS alternatives and best practices for limiting the use of chlorinated solvents.[30]



Chemours facility in Dordrecht, Netherlands. ©Paul Van de Velde, Wikimedia Commons

Feedstock uses of controlled substances

When used as feedstocks – raw materials in the manufacture of other chemicals – ODS and HFCs are exempt from Montreal Protocol controls.

This long-standing exemption was originally agreed based on the assumption that the feedstock chemicals are entirely converted or consumed during the manufacturing process and that any resulting emissions from "unreacted" feedstock would be "insignificant."[31] Increasingly, however, atmospheric monitoring and scientific research are proving this assumption to be false.

The 2022, TEAP and SAP Assessment Reports both highlighted that production of controlled substances for use as feedstocks has increased significantly in recent years.[32] This message was reiterated in the 2023 TEAP progress report, while the 2024 report noted that total production and import of feedstock ODS has increased 66 per cent over the past 10 years.[33]

Simultaneously, there has been a significant unexplained increase in the atmospheric abundance of many ODS including, alarmingly, CFCs, the regular production and consumption of which was phased out well over a decade ago.[34]

Recognising the challenges of relying on reported data to establish an estimate of feedstock and production-related emissions, EIA synthesised a series of papers and reports – including the 2022 SAP Assessment Report – to calculate an estimate of annual emissions linked to fluorochemical production. EIA estimates that these avoidable emissions, which include both feedstocks and by-products, could be as high as 491.94 million tonnes CO_2-eq emissions per year, of which 197 million tCO_2-eq are related to feedstocks.[35] This is equivalent to the combined greenhouse gas emissions of the 65 lowest emitting countries in 2022.

In this context, EIA strongly supports the draft decision on feedstock uses of controlled substances jointly submitted at OEWG46 by Australia, Canada, Norway and Switzerland.[36] There are several important elements to this draft decision that EIA believes are worth considering in turn.

Firstly, the draft decision reminds Parties of their responsibilities under Decision IV/12, which urges all Parties to take steps to minimise emissions from feedstock and process agent uses of controlled substances.[37] EIA endorses this timely reminder and directs Parties once again to the TEAP's guidance on best practices and technologies to reduce emissions of controlled substances produced and used as feedstocks.[38]

Secondly, the draft decision clarifies that Parties should include "unintentional production of isolated and non-isolated intermediates when reporting feedstock production."[39] Robust reporting is not just important for understanding the scale of ongoing challenges under the Montreal Protocol, but also for assessing how effective the solutions and measures implemented by the Parties have been. For this reason, EIA also supports the draft decision's invitation for Parties to share information with the Ozone Secretariat about their established national procedures for managing controlled substances produced and used as feedstocks.

The third element of the draft decision EIA wishes to highlight is the request for the Executive Committee of the MLF to consider establishing a funding envelope to support two production-related projects demonstrating best practices and technologies for minimising emissions from controlled substances used as feedstock. EIA believes this would be a significant and worthwhile undertaking for the MLF, offering a chance to gain important insights that could support wider implementation in the future, and calls on those A5 Parties that produce controlled substances as feedstocks to consider their potential suitability for such a demonstration project. We urge all Parties to support this effort in future.

Beyond the scope of this draft decision, EIA once again urges Parties to consider future limitations on the feedstock exemption, so it applies only to those substances for which there are no emissions and no feasible alternatives. Until limitations on the feedstock exemption are established, the production of controlled substances for feedstock and associated emissions will continue to increase.

Furthermore, EIA encourages Parties not to limit their discussions on production-related emissions to just the feedstock exemption. Parties must recognise and act on the significant emissions resulting from all aspects of fluorochemical production, including by-products and the use of controlled substances as process agents.

As a first step, countries with production need to significantly increase transparency around production levels and processes, sharing the relevant information with the Parties to the Montreal Protocol.

Enhancing the global and regional atmospheric monitoring of substances controlled by the Montreal Protocol

To ensure the Montreal Protocol's continued success, it is vital that Parties maintain global atmospheric monitoring capacity and that they enhance it in regions where it has historically lacked.

EIA therefore welcomes the draft decision submitted by Canada and the US which, recalling a recommendation of the 12th meeting of Ozone Research Managers (ORM), seeks to enhance regional atmospheric monitoring.[40] EIA firmly supports this draft decision and appreciates the constructive spirit with which Parties approached its discussion at OEWG46.

Firstly, the draft decision proposes that funds are transferred from the Montreal Protocol Trust Fund to the General Trust Fund of the Vienna Convention for the "specific purpose of funding projects to evaluate the suitability of potential sites for monitoring regional emissions of controlled substances."[41] Through an invitation to Parties of the Vienna Convention, criteria are then ventured for the Advisory Committee of the General Trust Fund to consider when evaluating the suitability of potential sites.[42]

We welcome the suitability criteria proposed in the draft decision, appreciating in particular the recognition that new monitoring sites should provide representative data covering areas of high production, use and emissions, while also plugging the existing gaps in the monitoring network.

EIA notes that closing the gaps in global coverage through a comprehensive monitoring network will significantly assist in addressing a range of other issues facing the Parties to the Montreal Protocol, not least the significant unreported, unaccounted for and unexpected emissions linked to fluorochemical production.[43]

The draft decision on monitoring also requests that the Executive Committee of the MLF consider a funding 'modality' through which to establish a limited number of pilot project monitoring stations.[44] EIA welcomes this idea and would strongly support more research such as the 2021 EU-funded pilot project to explore options for closing existing monitoring gaps in specific regions and use cases.[45]

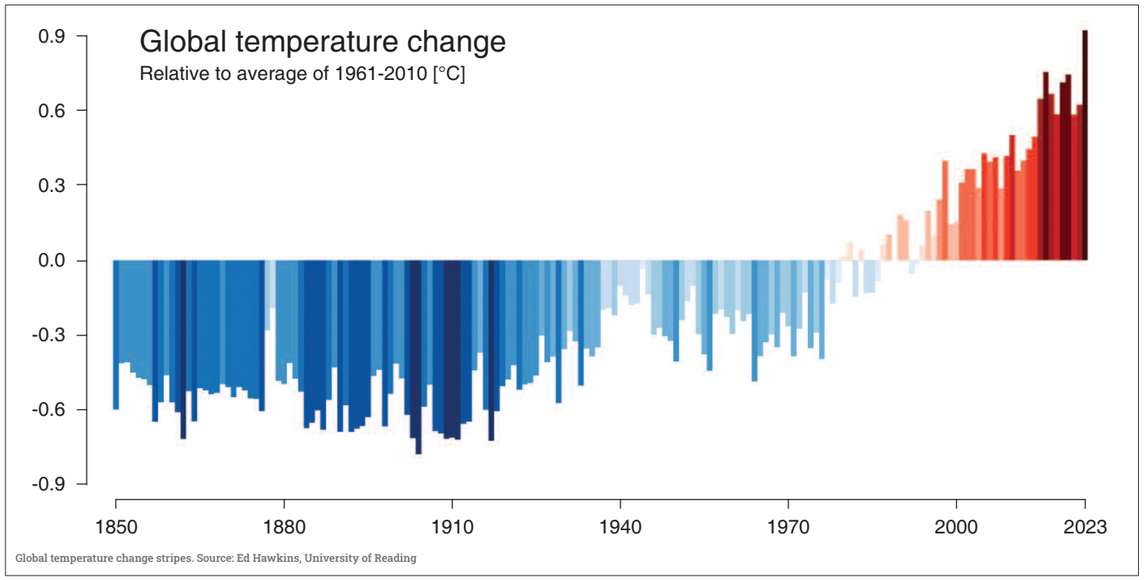
As noted by the SAP and recommended in previous EIA briefings, we would want to see any such pilot projects in the future making use of high frequency on-site sampling alongside low frequency flask sampling as this can "significantly strengthen the robustness and reliability of an integrated measurement network."[46]

Atmospheric monitoring is integral to the Montreal Protocol. Only through comprehensive atmospheric monitoring across all regions can we ensure a clear picture of the scale and trends in global ODS and HFC emissions.

EIA calls on Parties to come to a decision at this meeting which will pave the way for immediate action to enhance atmospheric monitoring and ensure data transparency from monitoring stations going forward, for better enforcement and accountability.



Measuring Station for air quality, climate and weather. ©Grafxart, Shutterstock



Global temperature change stripes. Source: Ed Hawkins, University of Reading

Possible compliance deferral for Article 5, Group 2 Parties

At OEWG46, the TEAP presented its insights and conclusions from a technical review of HFC alternatives, relevant to Article 5, Group 2 (A5, G2) Parties.

The review, requested in Decision XXVIII/2, was to consider whether any significant and unique barriers existed that would require these Parties be granted a compliance deferral of two years from their HFC freeze in 2028.[47]

The findings of the review emphasised that in almost all instances A5, G2 Parties face the same barriers to the use of lower GWP alternatives as A5, Group 1 (G1) Parties, i.e. their circumstances did not differ significantly from those A5 Parties already implementing an HFC freeze.[48]

This central outcome, which focussed on alternatives in the RACHP sector, was supported by an accessibility assessment showing that use of low-GWP, non-controlled refrigerants – particularly natural refrigerants including ammonia, hydrocarbons and CO_2 – was either growing or already widespread across A5, G2 countries.[49]

In response to the TEAP review, Bahrain, India, Kuwait, Qatar and Saudi Arabia submitted a draft decision calling on the TEAP to conduct further assessments.[50] EIA does not support this draft decision and strongly urges all Parties to reject the notion of any compliance deferral that would see the Kigali Amendment's HFC phase-down weakened.

As highlighted by the TEAP during OEWG46, reports addressing challenges to the availability, accessibility and adoption of HFC alternatives, with an emphasis on A5, G2 Parties, are already scheduled for 2026 and 2027.[51] Furthermore, with the climate emergency becoming ever more acute, we cannot afford to weaken existing commitments to phase down the production and use of these super pollutants.

It is an uncomfortable fact that the current HFC phase-down schedules set out under the Kigali Amendment – despite offering significant climate benefits – are not sufficiently ambitious to be consistent with a 1.5°C-aligned pathway.[52]

In this context, far from discussing compliance deferrals, EIA stresses the vital need for Parties to begin seriously considering how and when an acceleration of the Kigali Amendment can be implemented to bring it in line with global climate targets.



View of the room during a contact group at MoP35. ©IISD, Earth Negotiations Bulletin

Strengthening Montreal Protocol institutions

In response to the illegal production and use of CFC-11 uncovered in 2018, Parties initiated multiple discussions to address gaps in the Montreal Protocol's enforcement and to strengthen its institutional mechanisms.[53]

Six years on, the commitment Parties made to comprehensively address institutional shortcomings remains unfulfilled, despite several rounds of discussion, targeted reports from the Ozone Secretariat and a dedicated workshop on the topic.[54] Now, the draft decision submitted at OEWG46 by the EU presents a new opportunity for Parties to begin the important work of institutional strengthening.[55] EIA welcomes and strongly supports the EU's draft decision, noting, as we have before, that this necessary undertaking is already long overdue.

Although a small patchwork of decisions concerning illegal trade and atmospheric monitoring have been adopted since 2018, most of the gaps and challenges previously identified by the Ozone Secretariat in the treaty's monitoring, reporting and verification (MRV) mechanisms have not been addressed.[56] This includes issues related to licensing and quota systems, which vary widely between Parties but have never been comprehensively reviewed or assessed for effectiveness.

In this context, EIA welcomes the inclusion of text related to licensing systems within the EU's draft decision. As a first step, we encourage Parties to view this text – which requests from the Secretariat a compilation of common elements between licensing systems – not as a challenge or critique, but as the necessary groundwork for establishing licensing best practices and as an opportunity to develop greater harmony between systems in the future.

Parties should also consider an expert review of ODS and HFC licensing systems, undertaken with a view to developing best practice guidance and minimum requirements for licensing systems, including consideration of prior-informed consent (PIC) mechanisms and the WCO Advance Cargo Information (ACI) System.[57] Furthermore, there would be significant merit in such a review exploring the potential benefits of national, regional and global supply chain tracking and integrating new technologies such as QR codes and blockchain technologies into the existing mechanisms intended to prevent illegal trade.

The draft decision also calls on the Secretariat to convene a meeting of experts to discuss the Montreal Protocol's compliance mechanism. EIA steadfastly supports this request, noting that the Parties' commitment under Decision X/10 to "consider the operation of the non-compliance procedure […] no later than the end of 2003" is now more than 20 years overdue.[58]

When considering compliance under the Protocol, EIA wishes to draw Parties' attention to the 2019 report of the Implementation Committee (ImpCom), which contains a comparative review examining implementation and compliance mechanisms across a number of multilateral legal regimes.[59] This review reveals a litany of shortcomings in the approach of the Montreal Protocol that need to be addressed, including:

- participation in ImpCom not requiring legal, policy or scientific expertise
- no provision existing for stakeholders other than Parties to trigger the non-compliance mechanism
- reporting of illegal trade, production and use being voluntary
- reporting not being verified by third party experts
- ImpCom having no authority to examine systemic issues related to compliance.

Bearing in mind the fundamental importance of compliance to the functioning of the Montreal Protocol, EIA encourages all Parties in the strongest possible terms to recognise the value in holding a frank and open discussion on this topic and to support the request for a meeting of experts.

This draft decision at MoP36 offers another opportunity to begin the work of comprehensively strengthening the Montreal Protocol's institutions. EIA urges Parties not to squander it.

At this meeting, we sincerely hope that all Parties will engage constructively and in good faith to adopt a forward-looking decision to ensure the Montreal Protocol continues to deliver effectively long into the future.

Energy efficiency and sustainable cooling

Two draft decisions relating to energy efficiency were submitted at OEWG46 for discussion at the present meeting. EIA supports both of these draft decisions and encourages Parties to work collaboratively to maximise the contribution they can make towards achieving the goal of sustainable cooling.

The first, submitted by Kyrgyzstan, concerns the 'dumping' of energy-inefficient equipment through unwanted imports, most often into developing countries.[60]

EIA welcomes the draft decision's proposed use of minimum energy performance standards (MEPS) as a benchmarking tool for regulating imports of RACHP equipment, noting that 71 countries have now committed to establishing MEPS by 2030 (where they didn't exist already) under the Global Cooling Pledge.[61]

If adopted, EIA believes Kyrgyzstan's draft decision could encourage more Parties to develop MEPS sooner as a means to limit the additional pressures on energy infrastructure and servicing capacity associated with obsolete and inefficient equipment.

On a related point, EIA also notes that many RACHP manufacturers have signed the Global Cooling Pledge. EIA wishes to remind all manufacturers – especially those that have committed to support the Global Cooling Pledge – that it is incumbent on them to treat energy efficiency as a necessity in all markets and not just as a luxury or a requirement in some.[62]

The second draft decision, jointly submitted by Grenada and the Federated States of Micronesia (FSM), proposes measures to strengthen the 'enabling environment' to enhance energy efficiency in the cooling sector.[63]

Although this decision was not discussed during OEWG46, EIA notes with appreciation the warm reception it received from Parties. With a $100 million funding window for energy efficiency projects established at the most recent meeting of the MLF ExCom, the draft decision is both welcome and timely.

In particular, EIA supports Grenada and FSM's call for the MLF to support Parties in establishing regional centres of excellence. Looking to the model of the Africa Centre of Excellence for Sustainable Cooling and Cold-Chains (ACES) in Rwanda, and taking note of the lessons learned from its establishment, EIA encourages Parties to expand on the current text to consider all aspects of sustainable cooling.[64]

Centres of excellence could be a significant opportunity for the MLF to provide not just energy efficiency-related assistance, but also training and capacity-building that support the roll-out of ultra-low and zero-GWP refrigerants including ammonia, hydrocarbons and CO_2, thus helping to facilitate the swift transition away from HFCs.



Units for nitric acid production at a fertiliser plant. ©Yasni, Shutterstock

Nitrous oxide (N_2O)

EIA wishes to draw Parties' attention to the Global Nitrous Oxide (N_2O) Assessment, which will be launched by the Climate and Clean Air Coalition (CCAC), UN Environment Programme (UNEP) and International Nitrogen Management System (INMS) on 31 October at MoP36.

N_2O is a potent, long-lived greenhouse gas and by far the most abundant ODS in the world today.[65] Unchecked and largely ignored in environmental policy discussions over the past four decades, anthropogenic emissions of N_2O have increased by 40 per cent since 1980, exceeding even the highest projected emissions scenarios.[66]

The forthcoming report will provide the first comprehensive assessment of N_2O's impact on climate, stratospheric ozone and human health in more than a decade, using newly developed models to project multiple emissions pathways to 2050 and 2100.

EIA strongly encourages all Parties to take note of the assessment and engage with its findings, taking seriously the stark warning it offers for the protection and future recovery of the ozone layer if efforts are not made to control N_2O emissions.

If N_2O emissions continue to increase at their current rate, by 2100 much of the world's population could be exposed to levels of UV radiation unseen since the period of peak ozone depletion at the end of the 20th century. As such, Parties to the Montreal Protocol cannot afford to ignore N_2O any longer.

To protect the Montreal Protocol's legacy, Parties must consider what part the treaty will play in controlling this potent, ozone-depleting greenhouse gas.

EIA recommends that Parties to the Montreal Protocol first consider industrial emissions of N_2O. These emissions primarily occur as by-product during adipic and nitric acid production and account for roughly five per cent of total anthropogenic N_2O emissions.[67]

Using existing, low-cost abatement technologies that operate with abatement efficiencies of up to 99 per cent, industrial emissions of N_2O can be mitigated at costs often well below $20 per tonne of CO_2-eq.[68] Such abatement technologies are already required in several regions and voluntary installation in A5 countries is already being supported on a bilateral basis by GIZ's Nitric Acid Climate Action Group (NACAG).[69]

Strengthening the patchwork of regulations which currently govern industrial N_2O emissions and plugging the gaps where no such regulations exist will require a coordinated global effort. With universal ratification, a mandate to act on ODS and an existing precedent to expand its scope to secure additional climate benefits, the Montreal Protocol is the best placed multilateral agreement to achieve this goal.

With this context in mind, and drawing on the work already being undertaken by the Global N_2O Assessment, EIA recommends that Parties put in place the following steps for securing action on the universal abatement of industrial N_2O emissions under the Montreal Protocol:

- request the Ozone Secretariat to engage with relevant stakeholders on the topic of controlling industrial N_2O emissions under the Montreal Protocol
- request the TEAP, in coordination with the SAP, to produce a report on the technical feasibility, economic costs and ozone and climate benefits associated with the abatement of N_2O emissions from industrial sources
- request the SAP to produce a targeted report on the ozone and climate impacts of N_2O emissions from all sources and to outline the projected trends for such emissions.

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