

OzoNews

A fortnightly electronic news update on ozone and climate protection and the implementation of the Montreal Protocol brought to you by OzonAction

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GLOBAL

1. Happy International Women's Day, 8 March 2023 - Letter from OzonAction Head

Dear National Ozone Officers,

On behalf of UNEP OzonAction Compliance Assistance Programme (CAP), I would like to take this opportunity to wish you all a **Happy International Women's Day** and to especially thank our female National Ozone Officers (NOOs) and national stakeholders for their tremendous and continuing contributions to the implementation and compliance with the Montreal Protocol.

Thank you for all that you are doing for the Montreal Protocol, for our planet and future generations!

The theme for this year's celebration is "[DigitALL: Innovation and technology for gender equality](#)". According to UN Women:

Law Division

Ref: OzonAction/JSC/SW/JNC

Dear National Ozone Officers,

On behalf of UNEP OzonAction Compliance Assistance Programme (CAP), I would like to take this opportunity to wish you all a **Happy International Women's Day** and to especially thank our female National Ozone Officers (NOOs) and national stakeholders for their tremendous and continuing contributions to the implementation and compliance with the Montreal Protocol.

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Today, a persistent gender gap in digital access keeps women from unlocking technology's full potential. Their underrepresentation in STEM [science, technology, engineering, mathematics] education and careers remains a major barrier to their participation in tech design and governance. And the pervasive threat of online gender-based violence—coupled with a lack of legal recourse—too often forces them out of the digital spaces they do occupy.

At the same time, digital technology is opening new doors for the global empowerment of women, girls, and other marginalized groups. From gender-responsive digital learning to tech-facilitated sexual and reproductive healthcare, the digital age represents an unprecedented opportunity to eliminate all forms of disparity and inequality.

This 8 March, we are calling on governments, activists and the private sector alike to power on in their efforts to make the digital world safer, more inclusive and more equitable. Facing a multiplicity of global crises, we have a chance to create a better future—not just for women and girls, but for all humanity and all life on Earth. Join us.

OzonAction is commemorating this year's International Women's Day by launching a specific Gender mainstreaming section of our website. I encourage you all to visit it and learn more about OzonAction's engagement in incorporating gender into its work, both internally and externally.

On this page, you will find more information about the [IIR-UNEP survey on challenges and opportunities women are facing in the heating, ventilation, air conditioning and refrigeration \(HVACR\) sector, as well as about country examples of gender mainstreaming activities in Latin America and the Caribbean](#). You can also read [over one hundred personal stories of Women in the HVACR](#), and get more information about gender related meetings, news, and the gender policy context.

We will continue to celebrate women in our field by launching the International Network of Women in Cooling (INWIC) new logo and website later this month. Together with the WRD (World Refrigeration Day) Secretariat and our eleven global HVACR partners, we will use this website not only for sharing of information and resources but also as a powerful networking platform that will allow women professionals in the HVACR sector to connect, exchange experiences and interact with each other in a safe and inclusive space. INWIC will also use another digital tool, a mentoring software, to facilitate mentoring of both young women and established professionals across borders and in real-time.

Please stay tuned and check our [Gender Mainstreaming page](#) for more information about INWIC and other activities.

I wish everyone a Happy International Women's Day and look forward to working together with all of you in making gender mainstreaming an integral and inseparable part of our work.

Yours sincerely,

James S. Curlin
Head of OzonAction
Law Division
UN Environment Programme



[>>> Visit OzonAction](#)

See also [>>> International Women's Day: Innovation and technology for gender equality](#), UNEP, Ozone Secretariat

2. Kigali Amendment latest ratifications



Congratulations to the latest countries which have ratified the Kigali Amendment:

[Eritrea, 7 February 2023](#)

[Republic of Korea, 19 January 2023](#)

At the Twenty-Eighth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, held in Kigali from 10 to 15 October 2016, the Parties adopted, in accordance with the procedure laid down in paragraph 4 of article 9 of the 1985 Vienna Convention for the Protection of the Ozone Layer, a further amendment to the Montreal Protocol as set out in Annex I to the report of the Twenty-Eighth Meeting of the Parties (Decision XXVIII/1).

Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, Status of Ratification 15 October 2016 to [date](#).

[United Nations Treaty Collection](#)

Image: *UN Treaty Collection website*

3. Executive Committee Primer 2023

This Primer is intended to provide new members of the Executive Committee with a guide to the workings of the Multilateral Fund and its Executive Committee. It is updated after the last meeting of each calendar year in preparation for new members who will join the following year. It provides basic background information on the Multilateral Fund, its aims, and key concepts that underpin its activities. It outlines the key elements of the Multilateral Fund with brief descriptions of their different roles, and includes an explanation of the interactions among them and their role in terms of the provision of advice to the Executive Committee. It also provides information on how the Multilateral Fund operates from financial planning, project review and approval, to project monitoring and evaluation of completed projects.



It furthermore guides the new Executive Committee members through the meeting process, from pre-session preparations, to an agenda item-by-agenda item explanation of in-session activities, and post-session follow-up. A brief background on each agenda item is provided and the matters and type of actions that the Executive Committee may wish to take are discussed. The titles of documents related to agenda items are highlighted in bold text. Italic text directs the reader to the appropriate appendix or other documents for an additional explanation.

Appendix 1 provides the Terms of reference of the Executive Committee.

Appendix 2 provides the Rules of procedure for meetings of the Executive Committee.

Appendix 3 includes the details of logistic arrangements for Executive Committee meetings. Appendix 4 lists key reference information. Comprehensive information on the policy and procedures of the Executive Committee is found in Policies, Procedures, Criteria and Guidelines of the Multilateral Fund, a document that is updated after each Executive Committee meeting.

Two supplements containing relevant decisions and agreements relating to multi-year phase-out plans and projects are also available: HCFC phase-out management plans and HCFC production phase-out management plans (HPMPs and HPPMPs) contains relevant decisions and agreements on multi-year HCFC consumption and production phase-out projects, while Phase-out plans and projects contains relevant decisions and agreements on multi-year projects for the phase-out of other ozone-depleting substances (ODS).¹

Directory of the Multilateral Fund, which includes contact details of Committee members, the Secretariat, bilateral and implementing agencies and the Treasurer, is available from the Secretariat.

Notes:

- This Primer reflects the two-meetings-per-year scenario, pursuant to Executive Committee decisions 73/70 and 77/60.
- The Kigali Amendment that was adopted in October 2016, and that entered into force in January 2019, added HFCs, greenhouse gases that do not damage the ozone layer, to the list of substances controlled by the Montreal Protocol. Up until that time, the term "controlled substance" had been synonymous with the term "ozone-depleting substance" or "ODS".
- This Primer currently uses the term "controlled substance" to refer to all substances controlled under the Montreal Protocol, while the term "ODS" is used to refer to controlled substances that deplete the ozone layer.

4. Halon in Aviation

Halons are powerful ozone-depleting chemicals, which contain bromine. They have been used in fire protection applications to suppress or extinguish fires, especially in occupied spaces and critical operations. They are controlled under the Montreal Protocol.

Many land-based and commercial maritime applications that previously used halons for fire protection have switched to alternatives. However, halons are still used in aviation, military applications, nuclear power stations and the petrochemical industry. After military applications, aviation is the largest use of halons and is increasing.



But the diminishing and uncertain supply of halons, combined with the uncertainty surrounding the identification and installation of suitable alternatives, presents significant current and future risks to the aviation sector. Particularly in view of their continued need. Careful management of halon reserves is critical for the aviation sector to maintain supply of halon to meet global fire protection needs until the lengthy process of identifying and implementing safe and effective alternatives is successful.

There are different types of halons. Halon 1211 is used in aviation for cabin handheld portable fire extinguishers. Halon 1301 is used for in-built lavatory trash receptacles extinguishers (lavex), engine nacelles/auxiliary power units and cargo compartments on aircraft. Halons that are recovered from applications such as shipping and computer rooms are recycled to supply on-going halon uses, including aviation.

The Montreal Protocol phased out the production, import and export of halons in non-Article 5 parties (developed countries) in 1994 and in Article 5 parties (developing countries) in 2010. These control measures apply to newly manufactured halon, not to recycled halons. Recycling remains the sole source of halons for fire protection applications where alternatives are still under development or legacy systems are in transition, as in aviation.

Under the Montreal Protocol, essential use exemptions for bans on production and consumption of halons are only available in exceptional circumstances and are decided on eligibility against strict criteria. Recovered and recycled halons have been available in sufficient quantity and quality for continued use in aviation. For this reason, halons 1211 and 1301 have not qualified for these production and consumption exemptions.

The search for alternatives to halons in aviation began more than 25 years ago. There are many challenges in identifying, certifying, commercialising and implementing fire protection agents for aviation applications because of the required high levels of safety. Alternatives must meet stringent fire standards, safety and toxicity requirements, satisfy weight and size restrictions, and pass prescribed certification tests. The process and timelines are lengthy for development and certification of successful alternatives: the duration from new design aircraft certification to aircraft production is about 10 years. These factors narrow the pool of prospective fire protection agents and lengthen the duration of the search for and introduction of successful candidates.

Following extensive research and development, replacements are available for halon 1211 for cabin handheld extinguishers and for halon 1301 for in-built lavatory trash receptacle extinguishers on aircraft. Non-halon fire protection agents for these two applications are now being fitted in new aircraft and in existing older aircraft where retrofit is feasible. Alternatives to halons in aviation include high global warming potential hydrofluorocarbon chemicals (HFCs): HFC-227ea and HFC-236fa. For the lavex application, these two HFCs are the only alternatives to halon 1301 currently available. However, the Kigali Amendment to the Montreal Protocol requires that the production and consumption of HFCs be phased down over specified periods.

Acceptable alternatives to halon 1301 are not available for larger fire protection systems on aircraft, i.e., engine nacelles/auxiliary power units and cargo compartments. Alternative fire suppression systems for aircraft engine nacelle and auxiliary power units or cargo compartments face many hurdles in their development. In recent years, transnational consortia of aircraft manufacturers and stakeholders have been established to accelerate the development of alternatives for these applications. Potential alternative agents are in early stages of qualification. However, there is no guarantee of success.

The Montreal Protocol, through its Halons Technical Options Committee, has been working with the International Civil Aviation Organisation (ICAO) to support the on-going management of halons and their replacement with alternatives for aviation fire protection. ICAO has developed mandated requirements for the staged replacement of halons in aircraft when alternatives are

predicted to be available. These requirements signal target dates for different aircraft applications for the replacement of halons in current production or new design aircraft. Member States can submit “differences” that declare an intention not to meet these target dates. Some have filed differences for engine nacelle/auxiliary power units and cargo compartments. With no currently available non-halon agents for cargo compartments and engine/auxiliary power units, halon 1301 is still likely to be installed in new production aircraft for the next 20-40 years¹.

Other than a very small number of countries that hold stockpiles of halons to supply their uses, most recycled halons are made available through just-in-time commercial international and intranational trade in recovered halon. There are challenges associated with the available global reserves of recycled halons in supplying remaining fire protection applications. Reserves are finite and diminishing with continued halon usage. The global supply, distribution and demand for recycled halon is unbalanced.

There are regional barriers to the availability of recovered halons to supply aviation uses. For example, halon recovery and recycling companies have experienced difficulties in shipping recovered bulk halons across international borders due to their misclassification by some authorities as “hazardous wastes”, triggering restrictions under the Basel Convention. The Basel Convention is the international treaty to protect human health and the environment from the adverse impacts of hazardous wastes and restricts their transboundary movement.

Increasingly, contaminated recovered halon is presenting a challenge for recycling, with additional effort, cost and losses associated with reclamation and purification of contaminated halon for safe reuse in aviation. Aviation procedures specify that recycled halons must be certified to meet international standards (ISO 7201 for halon 1211 and ASTM D 5632 Type 2 for halon 1301). Best practice management by airlines and their contractors is needed to avoid halon contamination during servicing of fire protection equipment.

But the diminishing and uncertain supply of halons, combined with the uncertainty surrounding the identification and installation of suitable alternatives, presents significant current and future risks to the aviation sector. Particularly in view of their continued need. Careful management of halon reserves is critical for the aviation sector to maintain supply of halon to meet global fire protection needs until the lengthy process of identifying and implementing safe and effective alternatives is successful.

¹UNEP, *Report of the Technology and Economic Assessment Panel, Volume 2, Decision XXIX/8 Report on the future availability of halons and their alternatives*, September 2018.

[The UN Environment Programme, Ozone Secretariat, February 2023](#)

Image: UNEP, Ozone Secretariat website

5. New report explores issues around solar radiation modification (SRM)

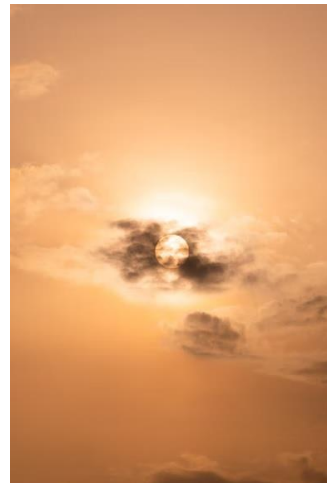
Earlier this week, the United Nations Environment Programme (UNEP) released a report that examines the status of research along with the potential risks and impacts of [solar radiation modification](#) (SRM), a group of technologies that aim to cool the planet.

We recently discussed the findings of the report *One Atmosphere: An independent expert review on SRM research and deployment* with UNEP’s Chief Scientist Andrea Hinwood.

Why is UNEP publishing a report on SRM?

Andrea Hinwood (AH): UNEP’s role is to [keep the environment under review](#) and that includes examining new technologies that impact the planet. There has been increasing demand for information about SRM, including calls for more inclusive and responsive modelling and scenario-building and requests to explore the potential governance of these controversial climate intervention technologies.

In close consultation with other UN entities, an Independent Expert Panel undertook a review of the existing state of knowledge on SRM to help inform the global community about the potential environmental and social impacts. It has been clear for some time that a growing number of Member States and both proponents and critics of SRM are calling for an international assessment of the latest knowledge to inform both national decisions, environmental policy and global governance in this space.



By convening a multidisciplinary Expert Panel, this rapid review has helped UNEP gain an understanding of the latest research and what we do and don't know about SRM. Based on this work and the findings of the Expert Panel, UNEP is deeply concerned about the lack of empirical knowledge on the potential risk, impacts and unintended consequences. We need to know more, and we support the call for a comprehensive scientific review process that is inclusive and globally representative. [...]

What are the next steps?

AH: UNEP and other UN agencies are laying the groundwork for a full-scale global review of SRM, including preparing an assessment framework.

In January 2023, the Montreal Protocol Scientific Assessment Panel released a [report](#) on the potential impacts of SRM deployment on the ozone layer. Its findings are consistent with those from the expert panel report. The expert panel report contains further information about additional impacts and risks and covers a wider view of the issues associated with SRM research and deployment.

The United Nations Environment Programme (UNEP), 28 February 2023

Image: UNEP website / Photo by Unsplash/Xianyu Hao

6. The ozone layer: a hole new world

In the 1980s, scientists discovered a gaping hole in Earth's ozone layer, caused by human-made chemicals. But thanks to the historical Montreal Protocol, the world came together to take bold action to save our planet.

Decades later, we can see the steady recovery of the ozone hole. How did we do it? And what does space have to do with it?

Join us as we explore the journey of the ozone hole, from its alarming discovery to the incredible strides made to fix it, and how satellites are helping us track its recovery.

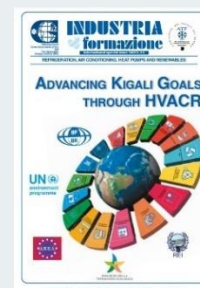


ESA - European Space Agency, 23 February 2023

Image: ESA - European Space Agency website

Advancing Kigali goals through HVACR - International Special Issue 2022- 2023 - To provide an update on this global effort, The Centro Studi Galileo (CSG) and the Renewable Energy Institute (REI), with support from the International Institute of Refrigeration (IIR), The United Nations Environment Programme-OzonAction, (UNEP- OzonAction) and The Air conditioning and Refrigeration European Association (AREA), Ministero Della Transizione Ecologica, have collected experiences from around the world, compiled in this special publication, featuring papers from leading global institutions and experts, addressing the current situation, the challenges ahead, and sharing opinions from different National Ozone Units, on issues related among others to HVAC&R, training, and the role of women in the cooling industry.

The **International Special Issue 2022- 2023** was officially launched during a side event at the Thirty-Fourth Meeting of the Parties to the Montreal Protocol in Montreal, (MOP34), 31 October – 4 November 2022 | Montreal, Canada



Sustainable cold chains: Virtual Exhibition - The virtual exhibition for sustainable cold chains aims to highlight the critical role of cold chains in ensuring food safety and security, access to vaccines, reducing global warming and preventing ozone layer depletion.

The exhibition showcases commercially available cold chain technologies for food and vaccines, mainly targeting applications and equipment with refrigeration and cooling cycles that use ozone and climate-friendly refrigerants and have enhanced energy efficiency characteristics. It also aims to promote game-changing and systemic approaches, relevant initiatives, and not-in-kind solutions to cold chains

These technologies and approaches directly contribute to meeting national obligations under the Montreal Protocol on Substances that Deplete the Ozone Layer including its Kigali Amendment and the Paris Agreement on Climate Change. Sustainable cold chain contributes to the achievement of many [Sustainable Development Goals](#).

The exhibition is ongoing and continuously updated with submissions accepted on a rolling basis. The partners of the exhibition will continue promoting the exhibition at all relevant events throughout 2022 and beyond.

Click [here](#) for more information / [submit a nomination](#) >>>

Image: Sustainable cold chains website



Categories



1 exhibits

On site post-harvesting and/or precooling applications



6 exhibits

Storage of product, e.g. large warehouses / Distribution centers



0 exhibits

Storage on board ships, aircraft, and containers



4 exhibits

Food processing plants



1 exhibits

Transport (large and smaller trucks, smaller containers)



6 exhibits

Supermarkets (wholesale markets & Retailers)



1 exhibits

Food services (Restaurants, cafes, tourism facilities, etc)



2 exhibits

Vaccines and other pharmaceutical products



0 exhibits

Game-changing and systemic approaches

AFRICA

7. Seychelles' environment ministry to survey imports of HFC gases ahead of 2025 quota system

Seychelles' environment ministry is undertaking a country-wide survey to quantify the yearly importation of refrigerating gases to prepare for the phase-down of hydrofluorocarbons (HFCs) in January 2025 as stipulated under the Kigali Schedule of the Montreal Protocol.

The survey, which started on February 15, will allow the ministry to identify key stakeholders using the HFCs to be phased down, making them priorities when a quota system for the allocation of HFCs kicks off in 2025. It will take about 120 days for the survey to be completed.

The senior ozone officer at the Ministry of Environment, Inese Chang-Waye, told reporters on Monday that Seychelles has a grace period between 2023 to 2024 to identify all its major stakeholders and know how much gas they use on a yearly basis.

"At the moment, we know which equipment and gas are coming into the country and the total that is coming in on a yearly basis. We have two major stakeholders, and they represent the two major economic pillars - tourism and fisheries. We do not know how much of each gas they use per year," outlined Chang-Waye.

HFCs are widely used in refrigeration and air-conditioning. Despite the fact that HFCs are not ozone-depleting, they do contribute to global warming.

"A gas that is commonly used in refrigerators in Seychelles is R134A. When we calculate its GWP (Global Warming Potential) which is the equivalence to CO₂, we see that they are really high. When compared to carbon dioxide, R134A has a GWP of 1430. Another one used in air-con units is R410A, and it has a GWP of 2088. We see the amount of global warming these gases can cause, should they leak from this equipment," said Chang-Waye.

Major buildings such as those for government and private entities will also be targeted in the survey as well. Households will not be taken into account as HFCs for retail are controlled at the importer level.

"Once we know this information, we will be able to set them as priorities, and when the phase-down starts, the two sectors will be placed on the top list. Once we are able to identify how much of this gas is used by the sector each year, the maximum percentage will be allocated to that stakeholder," said Chang-Waye.

She further explained that those unable to make the change based on the status of their equipment or building structure will have an allocation priority. Contractors will be advised when planning new buildings which kind of gases they can bring in for the air-conditioning units to exclude them from the allocation.

Another factor that will need to be determined from the survey will be the rate of leakage.

"After the survey, there will be stakeholders' workshops, following which we will know which new legislation needs to be put in place or where we need to make amendments. In 2021, we made five amendments. From the survey, we will see if we will need to raise the levies of gases that have high GWP to discourage people from bringing them in or if there are levies that need to be removed from certain gases so as to encourage people to import them more. We have to see how much and which gases are being used in the sectors," said Chang-Waye.

Under the Kigali Amendment adopted in October 2016, countries are committed to cutting down on the production and consumption of HFCs over the next 30 years of the adoption.

According to the United Nations Treaty Collection, Seychelles accepted the Kigali Amendment to the Montreal Protocol on Substances That Deplete the Ozone Layer on August 20, 2019.

From 2025 to 2029, Seychelles will need to phase down about 10 percent of the total consumption of HFCs and by 2045 the percentage needs to be as high as 80 percent.



HFCs are widely used in refrigeration and air-conditioning. (Joe Laurence)
Photo license 

8. Kenyan Parliament Urged To Ratify Key Environment Treaties

Environment and Climate Change, Principal Secretary of Kenya Festus K Ng'eno on Thursday [2 March] presented key treaties that require ratification by the country's National Assembly.

The instruments include the Kigali Amendments to the Montreal Protocol on Substances that deplete the Ozone Layer [...]

[Kenyan City News, 2 March 2023](#)
Image: Kenyan City News Website



ASIA AND THE PACIFIC

9. Artwork of the 1st and 2nd winners of the 2022 Asia-Pacific Ozone2Climate Contes

UNEP OzonAction is pleased to exhibit on a weekly basis the 36 winning pieces of art from the 2022 "Asia Pacific Regional Ozone2Climate Art Contest". The first and second place winners in the Adult drawing category are depicted below.

The competition was designed to increase public awareness about the importance of the Montreal Protocol for protecting human health and nature and to generate further support for the Montreal Protocol's compliance objectives.

The contest was organized as part of UNEP's mandate as an Implementing Agency of the Protocol's Multilateral Fund.



- 1st place in the Adult Drawing Category, "Saving the Ozone Layer Means Saving Life on Earth" by I. P. Asanka Somajeewa of Sri Lanka. (left image)
- 2nd place in the Adult Drawing Category "Ozone for Environment" by Lean Sokleap of Cambodia. (Right up image)
- 2nd place in the Adult Drawing Category "We all are one" by Wigavee Rattamanee of Thailand. (Right down image)

[UNEP, OzonAction, February 2023](#)
Image: OzonAction Website

LATIN AMERICA AND CARIBBEAN

10. Autoriza Congreso del Estado concesión de relleno sanitario para el municipio de Tehuacán

El Pleno del Congreso también avaló Iniciativas en materia de migración, turismo y medio ambiente (Mexico)

El Congreso del Estado aprobó por mayoría de votos el Dictamen para autorizar al Ayuntamiento de Tehuacán, el otorgamiento de la Concesión del Servicio Público para el Tratamiento y Disposición Final de Residuos Sólidos Urbanos y Residuos de Manejo Especial, por un plazo no mayor a siete años.

El objetivo de la Iniciativa enviada por el Ejecutivo Estatal es garantizar una mejor política ambiental, que permita prevenir y controlar los efectos negativos en la capa de ozono, ocasionados por transporte, almacenamiento, mejoramiento, manejo y tratamiento de los residuos sólidos.[...]

Efecto, 3 marzo 2023

Image: Efecto Website



NORTH AMERICA



It is with great sadness that we learnt about the passing of Dr. Nien Dak Sze on Sunday, Feb. 26, 2023.

Sze Nien Dak has been active in the field of Planetary and Earth Sciences since 1972. He was the Founder, Chairman and CEO of Atmospheric and Environmental Research Inc. (AER), one of the world most renowned commercial weather forecast, climate and global ozone impacts research and consulting firms in the US. [...]

Nien Dak has chaired and served several US and international boards/committees including the Board of Atmospheric Sciences and Climate under the the US National Academy of Sciences/National Research Council. He was a science and technical advisor to the State Environmental Protection Agency of China. [...]

Nien Dak has authored and co-edited several books, and he has published more than 150 papers with scientists around the globe. He was among one of the earliest developers of 1-, and 2- Dimensional models of the stratosphere to assess human's impacts on stratospheric ozone and climate change.

Nien Dak has been invited to testify on major issues related to ozone and global climate change before the US Congress, the German Bundestag and the Ministry of International Trade and Industry (MITI) of Japan. He has also served as a reviewer to the International Panel for Climate Change (IPCC) which co-shared the Nobel Peace Prize with the Former US Vice President Al Gore. Nien Dak was a recipient of several major awards from NASA, the US space agency, including the award on the 1987 Antarctic Airborne Ozone Experiment which verified the impact of chlorofluorocarbons (CFCs) on the polar ozone.

Our deep condolences to his family and friends.

EUROPE & CENTRAL ASIA

11. UNIDO supports Turkmenistan in reducing consumption of ozone-depleting substances

The United Nations Industrial Development Organization (UNIDO) supports Turkmenistan in reducing the consumption of ozone-depleting substances.

According to Charles Arthur, UNIDO Communications Officer, currently UNIDO and Turkmenistan are implementing two projects.

"One is the second stage of the HCFC Phase-Out Management Plan. This project helps the country to reduce the consumption of Hydrochlorofluorocarbons (HCFCs) in accordance with the Montreal Protocol. This is aimed at establishing mandatory control over leaks in industrial refrigeration units and chillers (a machine for cooling various liquids), as well as mandatory collection and disposal of HCFCs," said Arthur.

He noted that another project is aimed at institutional strengthening and capacity building of the Ministry of Agriculture and Environmental Protection of Turkmenistan and the National Ozone Unit.

"This project is aimed at providing all the conditions for the country to successfully fulfill its obligations under the Montreal Protocol. Furthermore, UNIDO is interested in developing its partnership with the Government of Turkmenistan in order to modernize its industrial sector, develop high-quality infrastructure, as well as promote investments and technologies in the country," the representative of UNIDO said.

The Montreal Protocol is an international protocol to the 1985 Vienna Convention for the Protection of the Ozone Layer, designed to protect the ozone layer by decommissioning certain chemicals.

AzerNews, 23 February 2023

Image: UNIDO logo

See also >>> [Institutional Strengthening Project in Turkmenistan.](#)



12. Ozone-depleting substances: higher EU ambition to reduce emissions

- Continued efforts to restore and protect the ozone layer
- Tighten the control of exempted uses and tackle illegal activities
- Improve clarity and coherence with other rules

Environment MEPs adopted their position to further cut down emissions of substances that damage the ozone layer, in line with the European Green Deal and international agreements.

On Wednesday, the Committee on the Environment, Public Health and Food Safety (ENVI) adopted a report on the [revision of the measures addressing ozone-depleting substances](#) (ODS) with 74 votes in favour, none against and 2 abstentions.

Increased efficiency of existing measures

MEPs support the Commission proposal which confirms that the production, sale, use, imports and exports of ODS are not allowed. Strict exemptions are foreseen for the use of ODS to produce other chemicals (as feedstock) and as process agents, in laboratories and for fire protection in special applications such as military equipment and airplanes.



According to the adopted text, MEPs introduce a rolling review mechanism (by 1 January 2025 and every 2.5 years thereafter) requiring the Commission to assess the availability of alternatives for ODS used as feedstock and propose measures to further cap or phase out such uses where alternatives exist.

In order to improve control and monitoring of ODS as well as reduce potential adverse environmental and health impacts, MEPs want that the rules related to leakages and registration in the licensing system should be extended to all ODS covered by the EU legislation (including to those not covered by the Montreal Protocol, listed in [Annex II](#)).

Improved enforcement and stricter penalties

The review clarifies the role of customs authorities and market surveillance authorities in implementing the rules and strengthens their powers to prevent illegal trade of ODS. It also aims to align the new rules with those on the protection of the environment through criminal law (currently [under revision](#)). In their proposals, MEPs seek to avoid the overlap between administrative and criminal penalties for serious infringements.

MEPs wish that the Commission should publish its implementation report by 1 January 2030 (three years earlier than foreseen by the proposal), with a focus on the availability of alternatives for ODS where an exemption is in place and on fighting illegal trade.

Quote

Rapporteur Jessica Polfjärd (EPP, SE) said: "The prevention of emissions from ozone-depleting substances is key to preventing adverse health and environmental effects resulting from a damaged ozone layer and to contribute to greenhouse gas savings in line with the Union's climate target. I am happy that we could agree today, across the political groups, and support an ambitious and balanced proposal to continue making efforts to improve and restore the ozone layer."

Next steps

The report is scheduled to be adopted during the 29-30 March 2023 plenary sitting and will constitute Parliament's negotiating position with EU governments on the final shape of the legislation.

Background

Ozone-depleting substances are human-made chemicals that, once emitted, reach the upper atmosphere and destroy the protective ozone layer. They have significant adverse impacts on human health and the environment and are greenhouse gases with high global warming potential. Such substances include halons (used in fire extinguishers), methyl bromide (to control pests) and hydrochlorofluorocarbons (used in fridges and air conditioning systems).

Even if the EU has already achieved its phase-out goals under the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer under existing legislation, ODS emissions need to be cut further to comply with the goals of the European Green Deal, the 2030 and 2050 targets set by the EU Climate Law and the Paris Agreement.

[European Parliament, 1 March 2023](#)

Image: European Parliament website

13. Fluorinated gas emission reductions to advance EU fight against climate change

Parliament's Environment Committee agrees to an ambitious reduction of fluorinated greenhouse gases emissions, to further contribute to EU's climate neutrality goal.

On Wednesday members of the Committee on the Environment, Public Health and Food Safety (ENVI) adopted their position on [revising the EU's legislative framework on fluorinated gases \(F-gases\) emissions](#) with 64 votes in favour, 8 against and 7 abstentions.

Move faster towards alternative solutions

To accelerate innovation in, and the development of, more climate-friendly solutions and to provide certainty for consumers and investors, MEPs want to strengthen new requirements proposed by the Commission that prohibit the placing on the single market



of products containing F-gases (Annex IV). The text also adds prohibitions on the use of F-gases for sectors where it is technologically and economically feasible to switch to alternatives that do not use F-gases, such as refrigeration, air conditioning, heat pumps and electrical switchgear.

Accelerate the transition to climate neutrality

The report introduces a steeper trajectory from 2039 onwards to phase down hydrofluorocarbons (HFCs) placed on the EU market, with the goal of a zero HFC target by 2050 (Annex VII). Phasing out HFC production and consumption in the EU would align these updated rules with the [EU's 2050 climate neutrality goal](#).

According to MEPs, the Commission should closely monitor market developments in key sectors such as heat pumps and semiconductors. For heat pumps, the Commission needs to ensure that the HFC phase-down would not endanger the [RePowerEU](#) heat pump deployment targets as the industry has to work towards replacing HFCs with natural alternatives.

Enhance enforcement to prevent illegal trade

MEPs propose more action on illegal trade in these gases by proposing minimum administrative fines for non-compliance. They also want customs authorities to seize and confiscate F-gases imported or exported in violation of the rules, in line with the [environmental crime directive](#).

Quote

Rapporteur [Bas Eickhout](#) (Greens/EFA, NL) said: "F-gases are not well known, but have major implications for our climate, as they are very powerful greenhouse gases. In most instances, natural alternatives are readily available. That's why we voted for an ambitious position to fully phase out F-gases by 2050 and in most sectors already by the end of this decade. We are providing clarity to the market and a signal to invest in alternatives. Many European companies are already at the forefront of this development and will benefit from it, because of their market position and export opportunities."

Next steps

The report is scheduled to be adopted during the 29-30 March 2023 plenary sitting and will constitute Parliament's negotiating position with EU governments on the final shape of the legislation.

Background

Fluorinated greenhouse gases, which include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride and nitrogen trifluoride, are man-made greenhouse gases (GHG) with high global warming potential. They are used in common appliances such as refrigerators, air-conditioning, heat pumps, fire protection, foams and aerosols. They are covered by the [Paris Agreement](#) together with CO₂, methane and nitrous oxide and account for around 2,5% of EU's GHG emissions.

Additional reduction of F-gases emissions is needed to contribute to [EU climate objectives](#) and comply with the [Kigali Amendment](#) to the [Montreal Protocol on Substances that Deplete the Ozone Layer](#).

[European Parliament, 1 March 2023](#)

Image: European Parliament website

14. A juicio una empresa viguesa por vender sin permiso un gas que daña la capa de ozono

La Fiscalía dice que siguió comercializando el producto a sabiendas de que no podía hacerlo.

La empresa de Vigo Gases Refrigerantes e Industriales Fernández, su administrador único y diferentes clientes está previsto que sean juzgados la próxima semana por la Audiencia Provincial acusados de un delito de tráfico ilegal de sustancia destructora del ozono.



El administrador único de la firma se enfrenta a una pena de dos años y tres meses de cárcel, mientras que la empresa Gases Refrigerantes e Industriales Fernández a 22 meses de multa con una cuota diaria de 100 euros.

Tanto las sociedades, como los acusados, están procesados por comprar y vender gas clorodifluorometano: una de las sustancias que agotan la capa de ozono, y cuya producción, exportación e importación está regulada por la Unión Europea. [...]

[La Voz de Galicia, 18 febrero 2023](#)

Image: La Voz de Galicia website

15. ASHRAE 2023 “Women in RACHP” workshop

At the ASHRAE 2023 winter conference and exhibition in Atlanta, the IIR’s CaRe (Career in Refrigeration) Working Group organised a workshop on “Women in RACHP”.

The first **IIR Medal dedicated to a Woman in Refrigeration** was promoted, which will be awarded at ICR 2023 to a woman who has made outstanding scientific achievements in academic or industrial research, innovation or development, in all fields of refrigeration, air-conditioning and heat pumps (RACHP).



A short presentation was given about **Dr Mary Engle Pennington** who studied chemistry at the University of Pennsylvania, receiving a Certificate of Proficiency in 1892 (at the time, the university denied degrees to women) and her Ph.D. in 1895 at the age of 22. She is the only woman in the picture of the first ICR in 1908 in Paris. To find out more about Dr Mary Engle Pennington, [please do read her inspiring biography](#).

CaRe Chairperson Catarina Marques presented some results of “[Women in Cooling: A Worldwide Survey](#)” and Colleen Keyworth highlighted INWIC, the International Network for Women in Cooling, whose website will be launched shortly.

[International Institute of Refrigeration \(IIR\), 21 February 2023](#)

Image: IIR website

16. AREA: EU Women in cooling video competition

AREA (Air conditioning and Refrigeration European Association) and World Refrigeration Day (WRD) have partnered to launch a competition on best practices for all EU women in cooling.

The challenge is to provide a video showing their best practices (e.g. installation, repair, charging, leak checking, recovery...) using the right PPE, right tools, etc.... (please refer to the attached modalities); the video will be provided by uploading it on AREA’s Facebook page within the **deadline of May 13th**.

AREA’s appointed judges will decide the winner, who will be awarded:

- by AREA (through ATF) of flight, accommodation, and conference fee
- and by Steve Gill (WRD) of a check in the value of 1,000 EUR
- receiving the prize in the frame of [UNEP-IIR-AREA-CSG 20th European Conference \(Milan, 8-9 June 2023\)](#).

Any AREA language is welcome.



Thank you, very much, and good luck, to EU women in cooling!

- [Specifications for the award WOMAN IN COOLING.pdf](#)
- [WOMEN IN COOLING leaflet.pdf](#)

AREA (Air conditioning and Refrigeration European Association), February 2023

Image: AREA website

FEATURED



Summary of the 34th Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (MOP34), 31 October – 4 November 2022 | Montreal, Canada

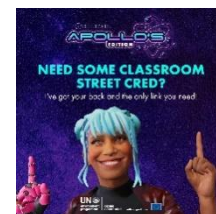
- Read/Download the [full report](#)
- pre/post documents, United Nations Environment Programme (UNEP), Ozone Secretariat [MOP-34](#)
- [Daily highlights](#) Earth Negotiations Bulletin-International Institute for Sustainable Development (IISD) / [Presentations and statements](#) / [Side events](#)

Image: ENB-IISD website



Overview for the meetings of the ozone treaties in 2022-2023 - Click [here](#) for upcoming and past Montreal Protocol Meetings dates and venues.

New gaming technology to create environment simulation game for teenagers-The UN Environment Programme's (UNEP) Ozone Secretariat today launched a simulator game and avatar using the latest software technology. [Apollo's Edition](#) is the latest addition to the [Reset Earth education platform](#). Targeting 13-18-year-olds, the free online education material developed provides educators with resources to teach students the importance of environmental protection.



Online introductory course 'International legal framework on ozone layer protection'
Designed for government representatives and national stakeholders new to the Vienna Convention and Montreal Protocol, students of environmental law, and anyone interested in learning about the ozone treaties, the [online course](#) launched by the Ozone Secretariat aims to provide an introduction to the international legal framework on ozone layer protection.

[United Nations Environment Programme \(UNEP\), Ozone Secretariat](#)

Image: UNEP, Ozone Secretariat website

Free teaching kits on ozone layer and environmental protection

- New free online teacher toolkits and lesson plans based on the success of UNEP's Ozone Secretariat's [Reset Earth](#) animation and video game
- Targeting Tweens by adopting animation and gamification to create innovative online lessons to raise awareness on ozone layer and environmental protection
- Available online in digital and print format for universal access



Read/download >>> [Ozone Secretariat's education platform](#)

Image: UNEP, Ozone Secretariat website

The UN Environment Assessment Panels

The Assessment Panels have been vital components of ozone protection since the Montreal Protocol was first established. They support parties with scientific, technological, and financial information in order to reach decisions about ozone layer protection and they play a critical role in ensuring the Protocol achieves its mandate. The Assessment Panels were first agreed in 1988 to assess various direct and indirect impacts on the ozone layer. The original three panels are:

- [The Technology and Economic Assessment Panel](#)
- [The Scientific Assessment Panel](#)
- [The Environmental Effects Assessment Panel](#)

In the past there were 4 main panels. The Panels for Technology and Economic Assessments were merged in 1990 into one Panel, now called the Technology and Economic Assessment Panel.

Why are the three current panels important to ozone layer protection? Each carries out assessment in its respective field. Every four years, the key findings of all panels are consolidated in a synthesis report. [Learn more >>>](#)

Scientific Assessment of Ozone Depletion: 2022 - [Executive Summary](#)

[United Nations Environment Programme \(UNEP\), Ozone Secretariat, November 2022](#)





The Multilateral Fund for the Implementation of the Montreal Protocol

The Fund is dedicated to reversing the deterioration of the Earth's ozone layer. It was established by a decision of the Second Meeting of the Parties to the Montreal Protocol (London, June 1990) and began its operation in 1991. The main objective of the Fund is to assist developing country parties to the Montreal Protocol whose annual level of consumption of the ozone depleting substances (ODS) chlorofluorocarbons (CFCs) and halons is less than 0.3 kilograms per capita to comply with the control measures of the Protocol. Currently, 147 of the 197 Parties to the Montreal Protocol meet these criteria. They are referred to as Article 5 countries.

The Multilateral Fund is managed by an Executive Committee with equal membership from developed and developing countries. Since the inception of the Fund, the Executive Committee has held 91 meetings. The Fund Secretariat, located in Montreal, assists the Executive Committee in its tasks. Projects and activities supported by the Fund are implemented by four international implementing agencies and a few bilateral agencies.

Last 16 July 2022, following the adoption of interim budgets for the Multilateral Fund due to the Covid-19 pandemic, the Fifth Extraordinary Meeting of the Parties to the Montreal Protocol (5th ExMOP) decided on the replenishment of the Multilateral Fund for the triennium 2021-2023. The Parties agreed on a budget of US \$540 million for the triennium.

As at 5 December 2022, the contributions received by the Multilateral Fund from developed countries, or non-Article 5 countries, totalled over US\$ 5.02 billion. The Fund has also received additional voluntary contributions amounting to US \$25.5 million from a group of donor countries to finance fast-start activities for the implementation of the HFC phase-down.

To facilitate phase-out by Article 5 countries, the Executive Committee has approved 144 country programmes, 144 HCFC phase-out management plans and has funded the establishment and the operating costs of ozone offices in 145 Article 5 countries.

Latest News and Announcement:

[Updated guide for the presentation of new stages of HCFC phase-out management plans \(February 2023\)](#), 3/7/2023

[Updated guide for the presentation of tranches of HPMPs \(Updated, March 2023\)](#), 3/7/2023

The 92nd meeting is scheduled for 29 May to 2 June 2023, in Montreal, Canada

The 93rd meeting is scheduled for 11 to 15 December 2023, in Montreal, Canada

>>> Click [here](#) for the Executive Committee upcoming and past Meetings and related documents.



OzonAction Compliance Assistance Programme produces and outreaches a wide variety of information and capacity building materials and tools that support the implementation of the Montreal Protocol programs and assist Article-5 countries in meeting the compliance targets. These include publications, technology briefs and factsheets, mobile applications, videos, e-Learning, modelling and database programs and special educational or certification programs.

The section below features several of our most recent products.

Visit [OzonAction website](#) for more information, discover the entire range of products.

Images in this section are by OzonAction

Every Action Counts: Kigali Amendment - UNEP 2022 - This brochure targets the general public and explains in a simplified manner what the Montreal Protocol and its Kigali Amendment signify. It includes some actions that everybody can do to support the Kigali Amendment. It also covers the relationship between the Kigali Amendment and Sustainable Development Goals. It introduces some examples of successful communication campaigns on the Kigali Amendment. [English](#) / [Spanish](#)



Gender Mainstreaming in the Montreal Protocol: Experiences in Latin America and the Caribbean - Taking into account that women and girls constitute half of the world's population and, therefore, represent half of the potential and innovation necessary to face the "triple planetary crisis" – climate change, nature and biodiversity loss, pollution and waste –, positioning people and the planet as central pillars of the transformation necessary to overcome it, and considering the guiding principles and the scopes of action of the Operational Policy on Gender Mainstreaming of the Multilateral Fund, the United Nations Environment Programme (Latin America and the Caribbean Office) ... [English](#) / [Spanish](#)



Refrigeration, Air-Conditioning, and Heat Pumps (RACHP) Associations & Organizations: This Knowledge Map provides a global directory of RACHP associations, societies, and organisations around the world. These are key stakeholders for ensuring safe and efficient refrigerant transitions. **Local Technical & Vocational Education and Training (TVET):** This Knowledge Map provides a global directory of TVET entities and centres around the world. These are the strategic partners for conducting and promoting training and certification programmes related to the refrigeration servicing sector.



Click [HERE](#) to access the OzonAction Knowledge Maps tool

Click [HERE](#) to download the OzonAction Knowledge Maps tool flyer

Gas Card Tool: Web-based Visual Printable Cards of Refrigerant Gases

Content of Gas Cards - Each Gas Card is printable (in PDF or image format) and includes the following information about each substance/gas: a) General Characteristics (Chemical name, formula and type, ASHRAE designation, Trade names, Harmonized System (HS) codes, Chemical Abstract Service (CAS), United Nations (UN) numbers, Blend/ mixture components, Montreal Protocol Annex and Control measures, main usage, etc.) b) Gas Performance—Radar Chart (in terms of: Ozone depleting potential-ODP, Global warming potential- GWP, Toxicity Class & Flammability Class) c) Environmental and Safety Impact, and Safety Impact (with visualization of Toxicity & Flammability Class, Hazardous Symbols).

More Information - The Gas Card web based tool is part of UNEP OzonAction's portfolio of activities and tools to assist various stakeholders in developing countries, including customs officers and technicians, to achieve and maintain compliance with the Montreal Protocol on Substances that Deplete the Ozone Layer. In the left navigation bar of the Gas Card tool web page, you will find a list of commonly used HFCs and HFC Blends in different sectors. *



Using the Gas Card web-based tool

- The Gas Card tool is available online on the [OzonAction website](#)
- Read the full [2021 annual iPIC report](#)
- See the [flyer](#) introducing the new iPIC platform

* Based on the Overall Analysis of the Results of the Survey of ODS Alternatives Report (conducted in 119 countries from 2012 to 2015)

Chemical Name	Formula	Trade Name	HS Code	UN No.	UN No.	UN No.
Ammonia	NH ₃	Ammonia	2814.10	1015	1015	1015
Carbon Dioxide	CO ₂	Carbon Dioxide	2814.10	1015	1015	1015
Hydrochlorofluorocarbon	HCFC	Hydrochlorofluorocarbon	2814.10	1015	1015	1015
Hydrofluorocarbon	HFC	Hydrofluorocarbon	2814.10	1015	1015	1015

HCFC Quota and Licence Tracker - a new desktop application to assist

with **HCFC licences and quotas** - National Ozone Officers have the great responsibility of managing the allocation and monitoring of quotas for substances controlled under the Montreal Protocol. This process can be complex with many importers, especially if the country imports a range of different hydrochlorofluorocarbons (HCFCs) and mixtures containing

HCFCs. To address this challenge, OzonAction developed a new desktop application that helps Ozone Officers with the tasks of planning, calculating, monitoring and managing consumption quotas and licences. It can be used on a daily basis to track and manage the current year's quota allocations for different importers, or for future planning by trying different scenarios that adjust the type of substances imported, their quantity, or the number of importers. The HCFC Quota and Licence Tracker allows Ozone Officers to see the effect of such scenarios on the national HCFC consumption and helps ensure that the quotas stay within agreed HCFC Phase-out Management Plan (HPMP) targets. For countries that have ratified the Kigali Amendment, in the future OzonAction will extend the tracker to include hydrofluorocarbons (HFCs) once countries begin designing their quota systems for those controlled substances. **Access the:**

- [HCFC Quota tracker app](#)
- [Flyer for more information on the tracker](#)
- [Short video tutorial on the OzonAction YouTube Channel](#)

GWP-ODP Calculator Application - Updated- "Quickly, efficiently and accurately convert between values in metric tonnes, ODP tonnes and CO₂-equivalent tonnes"

Data are extremely important for the Montreal Protocol community, and the data reporting formats for both A7 and CP have changed recently, to a large degree triggered by the Kigali Amendment. HFCs, blends, CO₂-equivalent values, etc, now have to be addressed much more frequently by Ozone Officers during their daily work. Sometimes the terminology and values are complex and can be confusing, and it helps to have it all the official facts and figures in one place. Conversion formulas need to be applied to calculate CO₂-eq values from both GWP and metric tonne values. This free app from OzonAction is a practical tool for Ozone Officers to help demystify some of this process and put frequently needed information at their fingertips.

What's new in the app:

- An updated more user-friendly interface
- Multilingual interface: English, French and Spanish
- A new **Kigali Amendment mode** - in this mode the GWP values used to calculate the refrigerant blends/mixtures only include GWP contributions from components that are controlled HFCs
- Latest updated ODP and GWP values from the recent reports from the Montreal Protocol technology and scientific expert panels as well as the Intergovernmental Panel on Climate Change (IPCC) reports
- References added for sources of all values
- New refrigerant mixtures (with ASHRAE -approved refrigerant designations)



If you already have the application installed on your device, be sure to update to benefit from the new features. The app can be viewed in English, French or Spanish.



Smartphone Application: Just search for "GWP-ODP Calculator" or UNEP in the Google Play store or use the QR code – free to download! If you already have the application installed on your device, be sure to update to benefit from the new features.



Desktop Application: GWP-ODP Calculator is also available online on the OzonAction [website](#)



Watch the new short introductory tutorial **video** on the GWP-ODP Calculator - available now on [YouTube](#)

>>> [Read/download the flyer](#)

Updated OzonAction "WhatGas?" Mobile App

The OzonAction 'WhatGas?' application is an information and identification tool for refrigerants gases: ozone depleting substances (ODS), HFCs and other alternatives. It is intended to provide some stakeholders, including Montreal Protocol National Ozone Officers, customs officers, and refrigeration and air-conditioning technicians with a modern, easy-to-use tool that can be accessed via mobile devices or the OzonAction website to facilitate work in the field, when dealing with or inspecting ODS and alternatives, and as a useful reference tool.

This latest release includes the 2022 Harmonized System (HS) Codes for HFCs and blends, which facilitates the process of inspection and identification of controlled and alternative substances.



Scan the QR code to download the app (*currently available for Android devices only*). If you've already downloaded the app, to update visit the [Google Play Store](#)

RAC Technician Videos - Full length films!

Two 'full length' videos for refrigeration and air-conditioning (RAC) sector servicing technicians: on 1) **Techniques, Safety and Best Practice** and 2) **Flammable Refrigerant Safety**.

The OzonAction Refrigeration and Air-Conditioning Technician Video Series consists of instructional videos on techniques, security and best practice and flammable refrigerant safety. They are intended to serve as a complementary training tool RAC sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training. The videos are not intended to replace structured formal technician training, but to supplement and provide some revision of tips and skills and to build on training already undertaken.



These videos are based on the successful UNEP OzonAction smartphone application, the RAC Technician Video Series app. This application has been downloaded on more than **86,000** devices since its launch.

Following many requests to make the videos more versatile and better suited to classroom and training settings, OzonAction has responded to this demand and produced two 'full-length' instructional videos.

You may wish to share this message and the flyer with:

- Your national/regional RAC associations
- Training or vocational institutes
- Master RAC trainers in your country
- Any other interested national stakeholders



You can watch these videos on the OzonAction YouTube Channel:

- [Techniques, Safety and Best Practice](#)
- [Flammable Refrigerant Safety](#)



The videos are also available for download by request from UNEP OzonAction: unep-ozonaction@un.org



If you prefer to access the video clips via the OzonAction smartphone application, just search for "RAC Technician Video Series" or UNEP in the Google Play Store and iTunes/App Store or scan the QR code – **Free to download!**

The flyer is available from the [OzonAction website](#).

[Women in the refrigeration and air-conditioning industry: Personal experiences and achievements](#)

The United Nations Environment Programme's (UNEP), OzonAction, in cooperation with UN Women, has compiled this booklet to raise awareness of the opportunities available to women and to highlight the particular experiences and examples of women working in the sector and to recognise their successes. All of the professionals presented in the booklet are pioneers. They are role models whose stories should inspire a new generation of young women to enter the field and follow in their footsteps. [Read/download the publication](#)



As part of IIR and UNEP OzonAction's partnership, a set of Cold Chain Technology Briefs was released over the past few years, which includes in-depth summaries about the cold chain in different key sectors. They include descriptions of technology, refrigerant options and trends and conclude with prospects and challenges. They cover the main cold chain sub-sectors, i.e., [Production & Processing, Cold Storage, Transport Refrigeration, Commercial & Domestic](#), and [Fishing Vessels](#). [Download the Cold Chain Technology brief in](#)

[English](#) | [French](#) | [Russian](#) | [Spanish](#)



PUBLICATIONS

[Results of a Worldwide Survey about Women in Cooling Released by IIR and UNEP OzonAction](#)

Refrigeration, Air-Conditioning, and Heat-pumps (RACHP) are crucial for our health, nutrition, comfort, and well-being. It is one of the sectors that crosscuts many of the UN sustainable development goals and can contribute significantly to safeguard the environment, advance welfare of humanity and support the growth of employment and economics worldwide. Women are highly under-represented in this sector as indicated by the fact that only 6% of the members of national refrigeration associations/organisations/institutions are women. In order to better understand the background, motivation, challenges, and opportunities faced by women working in RACHP a worldwide survey was undertaken by the International Institute of Refrigeration (IIR) and OzonAction of UN Environment Programme (UNEP) in cooperation with several partners.

[Read/Download the Full Report](#)

[Sustainable Food Cold Chains: Opportunities, Challenges and the Way Forward](#)-This [UNEP-FAO] report explores how food cold chain development can become more sustainable and makes a series of important recommendations. These include governments and other cold chain stakeholders collaborating to adopt a systems approach and develop National Cooling Action Plans, backing plans with financing and targets, implementing and enforcing ambitious minimum efficiency standards. At a time when the international community must act to meet the Sustainable Development Goals, sustainable food cold chains can make an important difference.

[Legislative and Policy Options to Control Hydrofluorocarbons](#) - In order to follow and facilitate the HFC phase-down schedules contained in the Kigali Amendment, the Parties, including both developed and developing countries, will have to implement certain measures.

This booklet contains a recommended set of legislative and policy options which the developing (Article 5) countries may wish to consider for implementation. It is intended to be a guide/tool for countries. [Read/download](#)



Latest issue of Centro Studi Galileo magazine,
Industria & Formazione, n. 10-2022
(in Italian).

Green Cooling in public procurement How to advance the procurement of climate-friendly and energy-efficient cooling equipment in the public sector? Air conditioning in public buildings is often responsible for around 50% of total electricity consumption. Switching to climate-friendly cooling technologies ("Green Cooling") can reduce costs and energy consumption and improve the carbon footprint of public buildings. This study takes a closer look at the benefits of Green Cooling in the public sector and discusses current barriers and possible solutions. The information presented provides a solid basis to revise current procurement criteria for sustainable cooling systems in public buildings. **Read/Download the study**

E-Book on Process Safety Management (PSM) Training for Ammonia Refrigeration - a new e-book about the critical elements of a process safety management (PSM) training program for facilities operating an ammonia refrigeration system.

The e-book, titled "**7 Keys to a Compliant PSM Training Program for Ammonia Refrigeration**," outlines important questions a facility's program should address and questions that trained plant personnel should be able to answer.

Topics covered include:

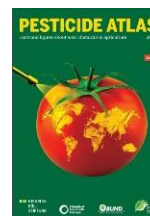
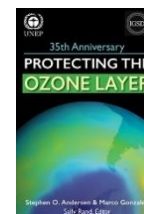
- Safety hazards and health considerations
- Emergency shutdown procedures
- Addressing deviations from system operating limits
- Risks and costs of non-compliance with regulatory standards

Request free Download [here](#)

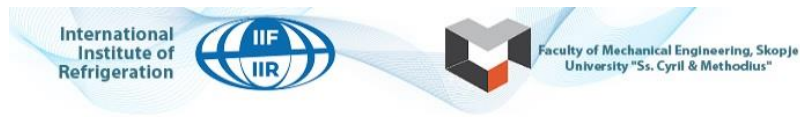
Protecting the Ozone Layer - 35th Anniversary Edition - a new book celebrating the 35th Anniversary of the Montreal Protocol. **The electronic version (Kindle Edition) of the book has become available for purchase \$3.03 on Amazon.** The book highlights successes and documents innovation during the first 35 years and inspires new ambition to strengthen protection of stratospheric ozone and climate before Earth passes tipping points. The book tells the story of the Montreal Protocol, revealing a model of cooperation, collaboration, universal ratification, record of compliance with over 99 per cent of controlled ozone-depleting substances (ODSs) phased out, the ozone layer on the path to recovery, the 2007 Montreal Adjustment, and the 2016 Kigali Amendment moving the Montreal Protocol further into environmental protection. Unfinished business includes: HCFC phase out, ODS bank management, HFC phase down, uncontrolled ozone-depleting greenhouse gas nitrous oxide (N₂O), feedstock exemptions for plastics production, and dumping of obsolete cooling appliances.

The book was released at 34th Meeting of the Parties to the Montreal Protocol on 31 October 2022.

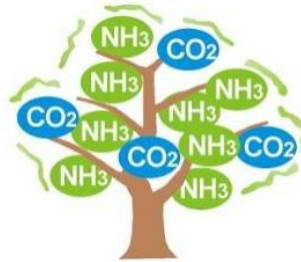
The **PESTICIDE ATLAS 2022** is jointly published by Heinrich-Böll-Stiftung, Berlin, Germany Friends of the Earth Europe, Brussels, Belgium Bund für Umwelt und Naturschutz, Berlin, Germany PAN Europe, Brussels, Belgium Chief executive editors: Lisa Tostado, Heinrich-Böll-Stiftung European Union (project management) Dr. Silke Bollmohr, EcoTrac Consulting Managing editor, graphics research: Martin Eimermacher Art direction, graphic development: STOCKMAR+WALTER Kommunikationsdesign English editor: Caspar Shaller Proof reader: Pia Hartmer, Judith Höppner; Joan Lanfranco, Heinrich-Böll-Stiftung European Union Contributors: Johanna Bär, Ulricke Bickel, Silke Bollmohr, Larissa Mies Bombardi, Clara Bourgin, Wolfgang Bödeker, Carsten Brühl, Helmut Butscher-Schaden, Henrike von der Decken, Dave Goulson, Susan Haffmans, Johannes Heimrath, Carla Hoinkes, Heike Holdinghausen, Dominic Lemken, Layla Liebetrau, Martha Mertens, Moritz Nabel, Andre Prescher, Ilang-Ilang Quijano, Anna Satzger, Achim Spiller, Lisa Tostado, Katrin Wenz, Johann Zaller, Anke Zühlsdorf. **Read/Download**



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