

OzoNews

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

Volume XXII | 30 January 2022

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GLOBAL



1. Kigali Amendment latest ratifications

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

Turkey, 10 November 2021

St. Lucia, 2 November 2021

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

2. UNEP Ozone Secretariat launches 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



Nairobi, Kenya, 24 January 2022 - In support of World Education Day and teachers looking for new material on environmental awareness and protection, the United Nations Environment Programme's Ozone Secretariat has tapped into animation and gamification to develop innovative teacher lesson plans and student workbooks.

Targeting tweens (8-12-year-olds) and using the Reset Earth short animations and storylines, the protagonists Knox, Terran and Sagan bring the story of how the ozone layer was saved to life. The toolkits are available online and free of charge on the [Ozone Secretariat's education platform](#). Specifically designed to cater for the increased demand in quality and innovative virtual learning material, the toolkits have also been adapted for print and the episodes are available in a comic format for universal access.

The first phase of the toolkits aims to provide a springboard into environmental science to help educate, raise awareness and inspire action among young people about the importance of the ozone layer, and the continued need to protect it. Phase II, targeting teenagers, is under development and will be launched soon.

"I cannot stress the importance of continued ozone layer protection and the story of the Montreal Protocol enough in this time of an acute climate crisis," said the Ozone Secretariat's Executive Secretary, Meg Seki. "It is a story of hope for our younger generation. It is also a reminder to us all to strive for global cooperation and partnership to build and implement global environmental policies based on science."

The ozone layer is an invisible shield that exists 15-35 km above the Earth's surface in the stratosphere, protecting humans, animals, plants, and vital ecosystems from harmful UV radiation.

In the 1980s, scientists discovered a huge hole in the ozone layer, caused by chlorofluorocarbon (CFC) emissions. This man-made chemical was utilized in many products –aerosol cans, fridges, air conditioners, insulating foams, fire extinguishers, solvents and many other products.

Alerted by scientists, world leaders and policy makers worked together, taking urgent steps to control and phase out CFCs and other ozone-depleting substances globally. The Montreal Protocol on Substances that Deplete the Ozone Layer was adopted in 1987. Since then, it has been universally endorsed by 197 nations and the European Union, making it one of the most successful environmental treaties of all time. Phasing out ozone depleting substances have also contributed significantly to curbing climate change because those substances are highly potent greenhouse gases.

But restoring the damaged ozone layer and returning it to pre-1980 levels will take decades. It will require constant vigilance and protection by the Montreal Protocol community and generations to come. The environmental challenges that the next generation of young people face are many. But the story of the ozone layer and the global collaboration to protect it, is a story of hope. The Montreal Protocol is a reminder that when the world comes together in cooperation and partnership, and guided by science, mankind can solve major global crises.

[United Nations Environment Programme \(UNEP\), Ozone Secretariat, 24 January 2022](#)

Image: UNEP, Ozone Secretariat website

3. Breaking down RAC Industry silos - **A recorded version of this event will be shared soon**



World Refrigeration Day (WRD)
**BREAKING DOWN RAC
INDUSTRY SILOS**

An ASHRAE – WRD - UNEP OzonAction Event
AHR 2022 – Las Vegas Convention Center



Tue 1 Feb 2022
@ 11:00 am (PST)
/ 8:00 pm (CET)

In-Person: Room N238/240

Virtual: [Click Here](#)

Refrigeration and air conditioning are essential to modern life. To achieve the degree of public awareness that is needed for sustainable global growth in cooling as populations grow and the global climate warms the industry must break down messaging silos and engage in coordinated outreach campaigns.

“Breaking Down RAC Industry Silos” is a free educational session at AHR Expo in Las Vegas that will present examples of how World Refrigeration Day (WRD) can raise the industry’s profile. Global WRD partners will share their experiences. Despite the increased number of policies, standards and codes related to RAC industry, there is still significant lack of attention and understanding of the importance of the RAC sectors by governments, end-users, and public.

Issues like refrigerant transition, emissions reduction, and maximizing energy efficiency have been addressed over the last couple of decades by most governments mainly due to relevant global policies and binding frameworks. However, the sector’s contribution to human welfare and our modern lifestyle goes beyond those topics and needs to be acknowledged and adequately considered by different groups from outside RAC community.

This event is brought to you by



4. Multilateral Fund Secretariat releases Executive Committee Primer – 2022

An introduction to the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol

INTRODUCTION

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 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).

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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.

Secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol

Image: Ozone Secretariat website

5. Science-Policy Interfaces (SPI): From Warnings to Solutions

[...] Successes at the Science-policy Interface

The science institutions that helped advise the international community as they came together to address ozone layer depletion are perhaps some of the best known early SPIs. Prior to the adoption of the Montreal Protocol in 1987, governments heeded scientists’ warnings on the need to collaborate on research and monitoring of the ozone layer. Under the Montreal Protocol, parties established three assessment panels to continue this work: the first reviewing the science of the ozone layer, the second the environmental effects of ozone layer depletion, and a third focused on technological and economic issues. The latter includes specialized technical options committees that have guided parties as they have phased out ozone-depleting substances.

Even as the Montreal Protocol was being finalized (it has since been heralded as the most successful environmental treaty), global attention shifted to the threat of climate change. The IPCC was established in 1988 under the umbrella of both the UN Environment Programme (UNEP) and the World Meteorological Organization (WMO). The first assessment produced by the IPCC in 1990 played an integral role in supporting negotiations that culminated in the adoption of the 1992 UN Framework Convention on Climate Change (UNFCCC). The UNFCCC established a Subsidiary Body for Scientific and Technological Advice (SBSTA), and yet this subsidiary body has never supplanted the IPCC in the way that the Montreal Protocol assessment panels supplanted their predecessors. Indeed, the landscape of SPIs is now divided among subsidiary SPIs, with agendas set by parties to a



convention, and stand-alone SPIs with a designated governing body (Kohler et al., 2012). [...]

The urgent challenges we face require timely and effective advice on solutions. Other SPIs, notably those advising on ozone layer depletion, chemical pollution and desertification, have valuable experience supporting decision-making. SPIs must create avenues for the science communities to not just sound the alarm but to work with policymakers to craft just and sustainable solutions. [...]

[IISD Earth Negotiations Bulletin, Policy Brief #30-January 2022, By Pia M. Kohler, Ph.D.](#)

Image: IISD website

6. Persistent extreme ultraviolet irradiance in Antarctica despite the ozone recovery onset

Abstract

Attributable to the Montreal Protocol, the most successful environmental treaty ever, human-made ozone-depleting substances are declining and the stratospheric Antarctic ozone layer is recovering. However, the Antarctic ozone hole continues to occur every year, with the severity of ozone loss strongly modulated by meteorological conditions.

In late November and early December 2020, we measured at the northern tip of the Antarctic Peninsula the highest ultraviolet (UV) irradiances recorded in the Antarctic continent in more than two decades. On Dec. 2nd, the noon-time UV index on King George Island peaked at 14.3, very close to the largest UV index ever recorded in the continent. On Dec. 3rd, the erythemal daily dose at the same site was among the highest on Earth, only comparable to those recorded at high altitude sites in the Atacama Desert, near the Tropic of Capricorn. Here we show that, despite the Antarctic ozone recovery observed in early spring, the conditions that favor these extreme surface UV events persist in late spring, when the biologically effective UV radiation is more consequential. These conditions include long-lasting ozone holes attributable to the polar vortex dynamics that often bring ozone-depleted air over the Antarctic Peninsula in late spring. The fact that these conditions have been occurring at about the same frequency during the last two decades explains the persistence of extreme surface UV events in Antarctica.

These conditions include long-lasting ozone holes (attributable to the polar vortex dynamics) that often bring ozone-depleted air over the Antarctic Peninsula in late spring. The fact that these conditions have been occurring at about the same frequency during the last two decades explains the persistence of extreme surface UV events in Antarctica.

Authors: Raúl R. Cordero, Sarah Feron, Alessandro Damiani, Alberto Redondas, Jorge Carrasco, Edgardo Sepúlveda, Jose Jorquera, Francisco Fernandez, Pedro Llanillo, Penny M. Rowe & Gunther Seckmeyer

Read/download full [text](#)

[Nature Scientific Reports, 24 January 2022](#)

Image: Nature website



7. ENSO-driven fires cause large interannual variability in the naturally emitted, ozone-depleting trace gas CH₃Br

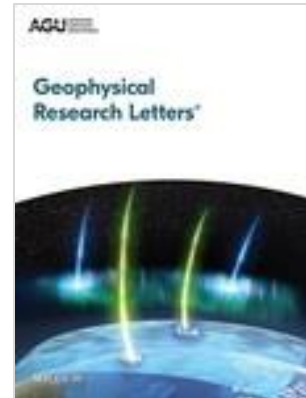
Methyl bromide is a trace gas known to destroy stratospheric ozone. Atmospheric mole fractions of CH₃Br have declined substantially over time because of Montreal Protocol controls on production of this ozone-depleting gas.

What remained unexplained were the substantial temporary variations observed in the measurement record. Here we find that those variations are related to El Niño Southern Oscillation (ENSO) events, and the increased burning during the warm phase of ENSO is determined to be the most likely cause of these interannual changes.

Authors: Melinda R. Nicewonger, Eric. S. Saltzman, and Stephen A. Montzka

[American Geophysical Union \(AGU\), 26 January 2022](#) (Paid full text)

Image: AGU website



8. Copper-based chemicals may be contributing to ozone depletion

Some ozone-destroying chemicals are unaccounted for. Are copper-based fungicides producing them?

Summary:

As Earth's ozone layer recovers from past emissions of now-banned CFCs and halons, other chemicals are emerging as major causes of stratospheric ozone depletion. Atmospheric scientists have been searching for the sources of about one-third of the major threats, methyl bromide and methyl chloride. New research shows that copper-based compounds in common use generate these compounds when interacting with soil and seawater, with sunlight boosting production by a factor of 10.

[ScienceDaily quoting University of California - Berkeley, 13 January 2022](#)

Image: Science daily website



ASIA AND THE PACIFIC

9. Mongolia Parliament adopts Bill to ratify Amendment to the Montreal Protocol

At its plenary meeting yesterday, January 18, the Mongolian Parliament approved a Bill on ratifying the Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer.



In 1996, Mongolia joined to the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer and is now working to phase down the consumption of ozone depleting substances by establishing a registration and monitoring system.

Adopted on 15 September 1987, the Protocol regulates production and consumption of nearly 100 man-made chemicals referred to as ozone depleting substances (ODS). The Montreal Protocol phases down the consumption and production of the different ODS in a step-wise manner, with different timetables for developed and developing countries. To date, the Parties to the Protocol have phased out 99 percent of ODS globally compared to 1990 levels.

At the 28th Meeting of the Parties on October 15, 2016 in Kigali, Rwanda, the parties to the Montreal Protocol reached agreement to phase-down hydrofluorocarbons (HFCs), a group of substances being widely used in air conditioners, refrigerators, aerosols, foams and other products. The parties agreed to add HFCs to the list of controlled substances, and approved a timeline for their gradual reduction by 80-85 per cent until 2045. By doing so, it will contribute to the realization of the Paris Agreement, which aims to limit global warming to 1.5 degrees Celsius compared to pre-industrial level, and create a basis for the legal environment to phase down HFCs.

To date, 126 countries have ratified the Kigali Amendment of the Montreal Protocol. Mongolia's accession to the Amendment is considered to be an important step towards the introduction of new advanced technologies, increase of the use of environmentally friendly substances and reduction of global warming.

Therefore, with aims to fulfill its obligations before international community and make a significant contribution to reduce global warming, Mongolia has drafted a Bill to ratify the accession to the Kigali Amendment.

[Montsame, 19 January 2022, By Unurzul.M](#)

Image: Montsame website

10. New measures to control greenhouse gas emissions in Vietnam



In this January 2022, three new legal documents have been issued regarding the reduction of greenhouse gas emissions and protection of the ozone layer, including:

- Decree 6 of the Government dated and effective from 7 January 2022 (Decree 6/2022);
- Circular 1 of the Ministry of Natural Resources and Environment (MONRE) dated and effective from 7 January 2022 regarding response to climate change (Circular 1/2022); and
- Decision 1 of Prime Minister regarding issuance of list of greenhouse gas emitting sectors and establishments subject to greenhouse gas inventory dated and effective from 18 January 2022 (Decision 1/2022).

The legislation seems to be a step to implement Vietnam's commitment to achieve net-zero carbon emissions by 2050 in the COP26.

First, according to Decision 1/2022, there are 21 sectors and 1912 establishments (Target Establishments) subject to greenhouse gas inventory. This list will be reviewed every two years.

Second, these Target Establishments must reduce the greenhouse gas emissions in the following schedule:

- Providing information and data for greenhouse gas inventory, establishing and conducting methods to reduce greenhouse gas emissions which are suitable with conditions of such establishment; and
- For the period from 2026 to 2030, conducting greenhouse gas inventory, establishing and conducting plans for reductions of greenhouse gas emissions according to quotas provided by MONRE; being allowed to exchange, sell and purchase greenhouse gas emission quotas and carbon credits on carbon credit exchange.

Moreover, such Target Establishments must, among other

- comply with regulations on measurement, report, appraisal on reduction of greenhouse gas emissions;
 - starting from 2027, send the report on the reduction of greenhouse gas emission of the previous year to the relevant authority before 31 March every year;
 - starting from 2023 and every two years, provide the relevant authority with data on the operation and relevant information in the previous year for purpose of greenhouse gas inventory of such establishment before 31 March;
 - starting from 2023 and every two years, conduct greenhouse gas inventory, prepare a report on greenhouse gas inventory and send such report to the provincial people's committee for the appraisal; and
-

- starting from 2025 and every two years, complete the report on the result of greenhouse gas inventory and send such report to MONRE before 1 December of the reporting period.

Third, the Target Establishments is allowed to participate in the domestic carbon market. The Target Establishment can apply at MONRE for a certificate on carbon credits and greenhouse gas emission quotas for trading on the domestic carbon market. The MONRE will issue the certificate within 15 working days.

Fourth, Decree 6/2022 specifies eight controlled ozone-depleting substances and one greenhouse effect-causing substance, as well as provides a roadmap for managing and excluding such controlled substances. Details of controlled substances are provided in Appendix III of Circular 1/2022.

- Organizations must register their use of controlled substances with MONRE before 31 December 2022 if they import, export, or manufacture the controlled substances; manufacture, import, or own equipment or products having or produced from controlled substances; or collect, recycle, reuse, and handle controlled substances. Within 10 working days from the receipt of a full and valid dossier, MONRE will publish information of the organization completing the registration for use of the controlled substance on the website of state authority on climate change. However, organizations who are allocated quotas for import of HCFC substances before 7 January 2022 and who have registered quotas for import of HCFC for 2022, are not required to register the use of controlled substances as discussed above.
- Organizations that import, export, or manufacture the controlled substances will be allocated quotas for manufacturing and importing the controlled substances. Organizations can request to amend or supplement quotas by sending a written request to MONRE before 10 July every year. MONRE will decide and issue a decision on adjustment and supplement of quotas for manufacturing and importing the controlled substances within 30 working days. However, such decision of MONRE can be canceled if there is any false information regarding the use of controlled substances by organizations or illegal transfer or use of decision on allocation, adjustment, and supplement of quotas for manufacturing and importing the controlled substances.

[Vietnam Business Law Blog, 25 January 2022, By Le Minh Thuy and edited by Nguyen Quang Vu](#)

Image: Vietnam Business Law Blog website

11. China Moves to Freeze Production of Climate Super-Pollutants But Lacks a System to Monitor Emissions

The world's largest greenhouse gas emitter announced the freeze in December after joining the Kigali Amendment to the Montreal Protocol, a climate agreement that requires an immediate ban on HFC-23, a potent greenhouse gas.



An aerial photo taken on Sept. 12, 2021 shows a chemical factory being dismantled and relocated along the Grand Canal in Huar'an City, East China's Jiangsu Province. Credit: He Jinghua / Costfoto/Barcroft Media via Getty Images

China has begun to rein in production of hydrofluorocarbons (HFCs), highly potent greenhouse gases that are widely used as chemical refrigerants in household appliances and automobiles, two years before it is required to under an international agreement.

The policy, announced by the Chinese government late last year, is a significant step in global efforts to address climate change. However, the news comes amid ongoing challenges to stop emissions of HFC-23, the most potent greenhouse gas among the HFCs and one whose emissions are now officially banned in China.

The world's largest producer and exporter of HFCs, China froze new production capacity for five of the most widely used HFCs on Jan. 1. The new policy was announced in [a circular issued by the country's Ministry of Ecology and Environment](#) on Dec. 28.

The production cap comes two years ahead of a mandatory freeze in production required by the Kigali Amendment to the Montreal Protocol, a climate agreement signed by more than 125 countries, which China joined on Sept. 15. Under the agreement, China is required to freeze production capacity for all HFCs in 2024 before slowly phasing-down production to just 20 percent of current levels by 2045. [...]

[Inside Climate News, 21 January 2022, By Phil McKenna](#)

Image: Inside Climate News website - Credit: He Jinghua / Costfoto/Barcroft Media via Getty Images



workplan under the Montreal Protocol's Multilateral Fund. [The Art Contest will run its course and close on 31 March 2022](#), followed by the regional contest of nominated winners. The final winners in the three categories of artworks - photography, drawing, and graphic design, will be evaluated and announced on World Ozone Day in 2022.

For more information about the contest, please visit: www.ozone2climate.org

Contact: [Shaofeng Hu](#), Senior Montreal Protocol Regional Coordinator, UNEP, [OzonAction](#) Compliance Assistance Programme (CAP) Asia-Pacific.

Image: OzonAction

LATIN AMERICA AND CARIBBEAN

12. Costa Rica: Alemania dona cuarto frío con tecnología ecoamigable a Hospital Nacional de Niños

El Hospital Nacional de Niños (HNN) recibió un cuarto frío con equipo frigorífico amigable con el medio ambiente, donado por el gobierno alemán, mediante la Cooperación Alemana para el Desarrollo (GIZ), y la empresa Dicoma Corporación. [...]



“El Laboratorio Clínico cuenta con una gran cantidad de reactivos que necesitan conservarse a temperaturas entre los 2 y 8 °C. Estos tienen un alto valor económico, por lo que es importante asegurar su resguardo, tanto en lo que se refiere a temperaturas de almacenamiento como al acceso restringido con el fin de evitar extravíos o hurtos”, dijo Cendry Alfaro, directora a.i. del Laboratorio.

El cuarto opera con un tipo de refrigerante que es inocuo para la capa de ozono y de ultra bajo potencial de calentamiento global, y se trata de la primera vez que se trae este equipo de alta eficiencia energética al país y a Centroamérica.

“Esperamos que esta donación sea un primer e importante paso para la introducción de esta novedosa tecnología a Costa Rica y a la región. Desde la GIZ, continuaremos trabajando en mejorar el desempeño ambiental del sector de refrigeración y aires acondicionados en el futuro con otros proyectos similares. De esta forma lograremos establecer una consciencia, un pensamiento 'verde' en relación con el sector refrigerante y de acción en todo el país”, dijo Andreas Villar, director del Clúster Regional de Clima y Biodiversidad de la GIZ. [...]

[La Republica, 26 enero 2022, Por Brenda Camarillo](#)

Image: Shutterstock/La República website

NORTH AMERICA

13. US EPA Significant New Alternatives Policy (SNAP) Determination of Acceptability (Notice 37)

Action Listing New Acceptable Substitutes

Section 612 of the Clean Air Act requires EPA to evaluate alternatives to ozone-depleting substances.

EPA's Significant New Alternatives Policy (SNAP) program reviews substitutes in a comparative risk framework, using the same risk criteria for all SNAP decisions. Section 612 requires EPA to list as acceptable those substitutes that do not present a significantly greater risk to human health and the environment as compared with other substitutes that are currently or potentially available.

This determination of acceptability (Notice 37) expands EPA's SNAP list of acceptable substitutes, providing industry with more options in the refrigeration and air conditioning, foam blowing, aerosols, cleaning solvents, and adhesives, coatings, and inks sectors.

Notice 37

What is included in the Notice?

- Five additional acceptable substitutes that reduce overall risk to human health and environment

Which industrial sectors are included?

- Refrigeration & Air Conditioning
- Foam Blowing
- Aerosols
- Cleaning Solvents
- Adhesives, Coatings & Inks

What health and environmental impacts of substitutes does EPA evaluate?

- Atmospheric effects, toxicity, flammability, occupational and consumer health/safety, local air quality, and ecosystem effects

SUMMARY OF ACCEPTABLE SUBSTITUTES

End-Use	Substitutes
Refrigeration & Air Conditioning	
Cold Storage Warehouses (New)	HCFO-1233zd(E)
Ice Skating Rinks (New)	HCFO-1233zd(E)
Industrial Process Air Conditioning (New)	HCFO-1233zd(E)
Foam Blowing	
Polystyrene: Extruded Boardstock and Billet	HFO-1234ze(E)/HCFO-1233zd(E) co-blowing blends, HFO-1234ze(E)/HFC-152a co-blowing blends, HFO-1234ze(E)/methyl formate/HFC-152a/CO ₂ /water co-blowing blends
Aerosols	
Aerosol Solvents	HCFO-1233yd(Z)
Cleaning Solvents	
Electronics Cleaning	HCFO-1233yd(Z)
Metals Cleaning	HCFO-1233yd(Z)
Precision Cleaning	HCFO-1233yd(Z)
Adhesives, Coatings, and Inks	
Coatings	HCFO-1233yd(Z)

[US EPA-SNAP, 13 January 2022](#)

Image: USEPA-SNAP website

14. Bermuda: Public Advisory Re: Installation and Maintenance of Split System Air Conditioners

The Department of Environment and Natural Resources (DENR) wishes to advise the public that most air conditioning refrigerants released into the air contribute to climate change or depletion of the ozone layer. In an effort to avoid this, all domestic and commercial HVAC system technicians who handle or manage refrigerant gases must have undergone the necessary training and have a valid "Certified Technician photo ID Card issued by the Department of Environment and Natural Resources. This helps to ensure the proper reclamation, reuse, or disposal of refrigerants.

For convenience, the list of Certified Technicians is available on gov.bm at the [Department of Environment and Natural Resources](#)



If you are having a split system air conditioner installed or maintained, please help ensure the proper reclamation, reuse, or disposal of refrigerants by asking your technician to:

1. Show their 'Photo ID Card' titled "Certified Technician for Refrigerant Handling under the Clean Air Act 1991" (sample attached) and check that it has not expired;
2. Produce the 'Reclamation Unit' (sample photos attached), which allows the refrigerant to be collected for reuse or disposed of in an environmentally acceptable manner rather than being vented to the atmosphere. There should be one unit per job site;
3. Advise If there is an additional cost for reclaiming and safely storing the gases, a process that takes some time. If there is no additional cost, it may be that the technician will be venting the gases into the atmosphere, which is illegal.

Should you have any questions regarding refrigerants' handling or disposal, or if you suspect the refrigerant gases may have been vented into the atmosphere, please email pollutioncontrol@gov.bm

[Government of Bermuda, 24 January 2022](#)

Image: Government of Bermuda website

EUROPE & CENTRAL ASIA

15. The European Commission Seeks Feedback on Efficiency and Labelling of ACs and Heat Pumps

The European Commission (EC) is inviting stakeholders to submit comments pertaining to ecodesign (efficiency) label requirements for air-to-air conditioners, air-to-air heat pumps and comfort fans, as well as comments responding to updates of the energy labelling of these products.



These “calls for evidence” are open until February 18. The EC’s adoption of changes informed by these comments is expected in the second quarter of 2022.

The European Commission is seeking to update the EU’s ecodesign and label legislation in light of technological advances made in recent years. The main objective is to contribute to energy efficiency and CO₂e- emissions abatement and to realize a high level of environmental and consumer protection by phasing out inefficient and outdated products.

Moreover, the EC intends to include in the legislation circular economy concepts, such as durability and recyclability.

With regard to air conditioners, the EC noted that their use is expected to increase drastically in the next three decades, becoming one of the top drivers of global electricity demand. In a business-as-usual scenario, the EC reports, European energy consumption from these appliances is estimated to increase to 61.8TWh by 2030 and 96.0 TWh by 2040 due to increasing cooling demand across the continent.

According to the EC, the feedback gathered in these calls for evidence will contribute to the impact assessment backing the final proposal.

The European Ecodesign Directive (2009/125/EC) and the Energy Labelling Framework Regulation (EU/2017/1369) are elements of a broader product policy aimed at increasing the energy efficiency of products and simultaneously reducing their overall environmental impacts. HVAC&R products have consistently been part of these policies.

Both policies are considered critical to the EU's fight against climate change; since their introduction, they have led to large energy and GHG-emissions savings. The EC has estimated that the Ecodesign Directive and the Energy Labelling Framework Regulation contributed to achieving about half of the EU's energy saving targets for 2020, with the directive providing 85%, and the regulation 15%. Together, ecodesign and energy labelling provisions are expected to deliver around a third of all the emissions savings needed to achieve the EU's 2030 emission reduction under the "Fit for 55" package.

[r744, 26 January 2022, By Thomas Trevisan](#)

Image: r744 website

16. New European Proposal Calls for No Fossil Fuels in Heating and Cooling of Buildings by 2040

The European Commission's (EC's) proposed revision of the Energy Performance of Buildings Directive (EPBD), announced last December, includes roadmaps for phasing out fossil fuels in heating and cooling by 2040 at the latest, among other measures affecting the cooling and heating sectors.



The revision of the EPBD is part of the "Fit for 55" package in the European Green Deal and complements other endeavors proposed in July 2021. It aims at achieving a zero-emission building stock by 2050.

It also translates the EC's Renovation Wave Strategy into concrete legislative action.

Stakeholders can submit comments on the proposal until March 15, 2022. The proposal then needs to be finalized by the EC, the European Parliament, and the European Council.

Notably, the EC's proposal calls for National Buildings Renovation Plans to be fully integrated into National Energy and Climate Plans. "These plans will need to include roadmaps for phasing out fossil fuels in European heating and cooling buildings' systems by 2040 at the latest, along with a pathway for transforming the national building stock into zero-emission," said the EC in a statement.

Heating, cooling, and domestic hot water account for 80% of the energy consumed by households, said the EC. Buildings account for 40% of energy consumed in Europe and 36% of energy-related direct and indirect greenhouse gas emissions, the Commission added.

Eliminating fossil fuels in Europe heating and cooling buildings' systems would lead to the widespread adoption of heat pumps as well as district heating and cooling. Notably, efficient cooling is proposed as a mean to reach Renewable Energy targets in a separate legislative effort.

Overall, the EC proposes that all new public buildings must be zero-emission as of 2027; as of 2030, all new buildings must be zero-emission. "This means that buildings must consume little energy, be powered by renewables as far as possible, emit no on-site carbon emissions from fossil fuels and must indicate their global warming potential based on their whole-life cycle emissions on their Energy Performance Certificate," the EC said.

REHVA (the Federation of European Heating, Ventilation and Air Conditioning Associations) released a statement welcoming the proposed revision of the EPBD. "REHVA welcomes the EPBD proposal to boost high-quality deep energy renovation and to strengthen requirements for a healthy indoor air and climate quality," said Anita Derjanecz, Managing Director of REHVA.

AREA (the European Association of Refrigeration, Air Conditioning and Heat Pump Contractors) applauded the inclusion of provisions on MEP (minimum energy requirements) to address the worst-performing buildings. The group also welcomes the introduction of national building renovation plans and the enhanced focus on energy performance certificates.

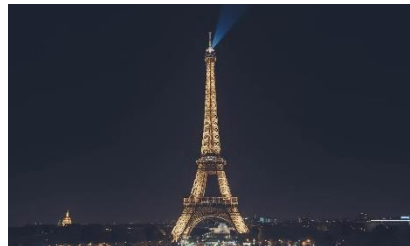
[Hydrocarbons21, 26 January 2022, By Thomas Trevisan](#)

Image: Hydrocarbons21 website

17. Eiffel Tower's Cooling System Now Using Efficient Refrigerant

The Eiffel Tower is now using ultra-low-global-warming-potential (GWP) refrigerant technology in its new cooling system. [...] The installation, which uses [...] (R-1234ze) refrigerant, provides the tower's west pillar with an energy efficient and cost-effective solution that reduces greenhouse gas emissions.

The pillar is home to the Eiffel Tower Visitor Information Center as well as a souvenir shop and a hydraulic lift that ascends 300 meters to sweeping views over Paris. [...]



[Environmental Leader, 11 January 2022](#)

Image: Environmental Leader website-Credit: Pixabay

FEATURED

Overview for the meetings of the ozone treaties in 2022

[68th IMPCOM](#), Venue – to be determined, 9 July 2022

[44th OEWG](#), Venue – to be determined, 11 - 15 July 2022

[69th IMPCOM](#), Venue – to be determined, 29 October 2022

[33rd MOP Bureau](#), Venue – to be determined, 30 October 2022

[34th MOP](#), Venue – to be determined, 31 October - 4 November 2022

Click [here](#) for past and upcoming Montreal Protocol Meetings Dates and Venue.

Upcoming meetings	
2022 ^	
68th IMPCOM	Venue – to be determined, 09 Jul 2022
44th OEWG	Venue – to be determined, 11 - 15 Jul 2022
69th IMPCOM	Venue – to be determined, 29 Oct 2022
33rd MOP Bureau	Venue – to be determined, 30 Oct 2022
34th MOP	Venue – to be determined, 31 Oct - 04 Nov 2022

Summary of the Combined Twelfth Meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer (part II) and the Thirty-Third Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer: 23-29 October 2021.

[The Earth Negotiations Bulletin, 1 November 2021, Vol. 19 No. 157](#)

See also >>> [IISD Daily coverage and photos](#)

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 >>>](#)



[THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL](#)

The Executive Committee Eighty-seventh Meeting, Montreal, 28 June-2 July 2021

[REPORT OF THE INTERSESSIONAL APPROVAL PROCESS AND ONLINE MEETINGS FOR THE 87TH MEETING](#)

The present document consists of the following two parts:

- I. Process for the 87th meeting, describing the agreed process followed by the Executive Committee for conducting the 87th meeting, which included consideration of several items of the agenda through an intersessional approval process (IAP) and several other items through online meetings.

- II. Comments, discussions, and decisions by the Executive Committee, containing a compilation of comments and discussions where applicable, and decisions on each of the documents considered during the 87th meeting, presented in the order of the agenda of the meeting.

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



OzonAction

[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

New OzonAction Knowledge Maps tool - The UNEP OzonAction Knowledge Maps tool was developed to provide the National Ozone Units (NOUs) and different UNEP partners with a simple tool to help them access data and information about relevant stakeholders, who are mainly involved in the implementation of programmes and projects under the Montreal Protocol (MP) supported by Multilateral Fund (MLF).

Currently, the first two available knowledge maps are described below:

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, for the training of technicians and supporting the national policies related to the Montreal Protocol.

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.



To develop this tool, UNEP OzonAction collected and reviewed different datasets from multiple sources, and then presented the collected datasets into a common platform and

format (mainly in the form of a global map so that data can be geographically displayed). Kindly note that the data and information provided will be updated regularly through the feedback that will be received from NOUs and partners to update and/or add new records. Other maps are currently under development which will include access to other key data and information of importance to the implementation of Montreal Protocol programmes.

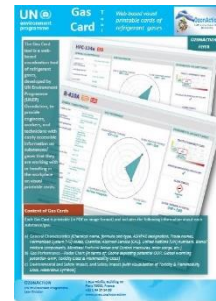
Click [HERE](#) to access the OzonAction Knowledge Maps tool

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

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

Gases developed by the UN Environment Programme (UNEP) OzonAction, to provide engineers, workers, and technicians with easily accessible information on substances/ gases that they are working with or handling in the workplace on visual printable cards.

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).



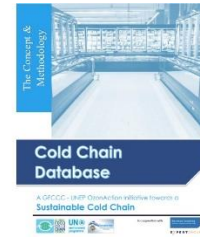
More Information - The Gas Card web based tool is part of UNEP OzonAction's portfolio of activities and tools to assist various stakeholders in developing countries, including customs officers and technicians, to achieve and maintain compliance with the Montreal Protocol on Substances that Deplete the 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)*

OzonAction and GFCCC launch the methodology questionnaires the Cold Chain Database Initiative - The Global Food Cold Chain Council (GFCCC) and the United Nations Environment Programme (UNEP) OzonAction announced the launch of their Cold Chain Database and Modeling initiative. The initiative marks the first formal step to assist developing countries in identifying their cold chain baseline along with consumption of relevant HCFCs or HFCs or other refrigerants. The initiative was conceived in 2019 and kicked off during the 31st Meeting of Parties to the Montreal Protocol (Rome, Italy), which concluded with the Rome Declaration on “The Contribution of the Montreal Protocol to Food Loss Reduction through Sustainable Cold Chain Development”. The launch also comes in advance of the United Nations Food Systems Summit.



With the support provided by the Montreal Protocol’s Multilateral Fund, the Cold Chain Database initiative is currently being piloted in six countries – Bahrain, Bosnia and Herzegovina, Maldives, North Macedonia, Paraguay, and Senegal. From the pilot data gathering initiatives, a model is being developed that will allow the projection of benefits of cold chain expansion.

GFCCC is an independent not-for-profit industry organisation that seeks to simultaneously reduce food waste, and related greenhouse gas emissions in the processing, transportation, storage, and retail display of cold food by expanding and improving access to energy efficient low-global warming potential technology. The Cold Chain Database concept, methodology and data collection questionnaires are offered to interested countries and partners to help in assessing local cold chain capacities and designing respective action plans and policies.

> [GFCCC-UNEP OzonAction Cold Chain Modelling Press Release](#)

> [GFCCC-UNEP Cold Chain Database Methodology Final](#)

> *For countries or partners interested to use the model data collection detailed questionnaires, please fill in the [Expression of Interest and NDA of Cold Chain Database](#) form and return to [Ayman Eltalouny](#)*

Contact: [Ayman Eltalouny](#), Coordinator International Partnerships, UNEP, OzonAction

Substance	Quantity (Kilograms)	Licence ID	Date	Status
R22	100.00	123456	2023-01-01	Active
R134a	200.00	789012	2023-02-15	Active
R404A	50.00	345678	2023-03-10	Active
R404A	150.00	901234	2023-04-05	Active

[HCFC Quota and Licence Tracker](#) - UNEP

OzonAction launches 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)

The new and updated UNEP OzonAction **GWP-ODP Calculator** application will help you to convert between values in metric tonnes, ozone depleting potential (ODP) tonnes and CO₂-equivalent tonnes of substances controlled by the Montreal Protocol and their alternatives.

This application, available at no cost, is particularly useful for National Ozone Officers to assist with understanding and calculating quantities of controlled substances, both pure substances and mixtures, for quota assignment, reporting requirements, etc. Other stakeholders interested in ODP and global warming potential (GWP) values of controlled substances and their alternatives will also find this tool useful.

Operation of the application is very simple – just select a substance from the dropdown list and enter the known value in the appropriate field; the calculator will automatically perform the conversion between metric tonnes, ODP tonnes and/or CO₂-equivalent tonnes and display the corresponding converted values. The ODP, GWP and information about the substance is provided. For mixtures, the components of the mixture and their relative proportions (metric, ODP, CO₂- equivalent tonnes) are also calculated.

The updated **GWP-ODP Calculator** application now includes a new Kigali Amendment mode. The app can now be used in two different modes: the regular "Actual Values" mode and the "Kigali Amendment" mode. In the Kigali Amendment mode, the GWP values provided are those specified in the Kigali Amendment to the Montreal Protocol, i.e. GWP values are only assigned to controlled HFCs. In this mode the GWP values used to calculate the refrigerant blends/mixtures only include GWP contributions from components that are controlled HFCs. The user can effortlessly switch between modes.

The OzonAction GWP-ODP Calculator uses standard ODP values and GWP values as specified in the text of the Montreal Protocol to make the conversions. Other ODP and GWP values from the recent reports of the Montreal Protocol Technology and Economic Assessment Panel and Scientific Assessment Panel as well as the Intergovernmental Panel on Climate Change (IPCC) are used when appropriate, with references to sources of all values used. The app includes new refrigerant mixtures (with ASHRAE- approved refrigerant designations).

This application is designed primarily for use by Montreal Protocol National Ozone Units and other related stakeholders. The application was produced by UN Environment Programme (UNEP) OzonAction as a tool principally for developing countries to assist them in meeting their reporting and other commitments under the Protocol and is part of the OzonAction work programme under the Multilateral Fund for the Implementation of the Montreal Protocol.

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](#) for more information

OzonAction [WhatGas?](#) Updated

New features:

- An updated more user-friendly interface
- Multilingual interface: English, French and Spanish
- HFCs and HFC containing mixtures
- Latest updated ozone depleting potential and global warming potential values from the recent reports from the Montreal Protocol technology and scientific expert panels as well as the Intergovernmental Panel on Climate Change; as well as the standard ODP and GWP values as specified in the text of the Montreal Protocol
- References to sources of all values used
- New refrigerant mixtures (with ASHRAE approved refrigerant designations)
- Values for ‘actual GWP’ and ‘Kigali Amendment context’ GWP for pure substances and mixtures (i.e. only including GWP values/components assigned to controlled hydrofluorocarbons - HFCs).



The **WhatGas?** application is an information and identification tool for refrigerant gases: ozone depleting substances (ODS), HFCs and other alternatives. It is intended to provide a number of 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. If the user requires additional information or assistance in identifying a refrigerant gas they are inspecting or that is described in the relevant paperwork, this can be easily obtained by consulting the application.

Using the application:

If you already have the application installed on your device, be sure to update to benefit from the new features.

Smartphone Application: Just search for “WhatGas?” or UNEP in the Google Play store or use the QR code – free to download!



Desktop Application: WhatGas? is also available online on the OzonAction [website](#)

For more information: Watch the new short introductory tutorial [video](#) on WhatGas? available on [YouTube](#)

See/download the [WhatGas? flyer](#)

Over 10,000 installations on Android and iOS devices to date!

[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](#).

[Refrigerant Cylinder Colours: What has Changed](#)

A new UNEP OzonAction factsheet on the new AHRI revised guideline on a major change to refrigerant cylinder colours

One of the ways in which refrigeration cylinders are quickly identified is by cylinder colour. Although there was never a truly globally adopted international standard, the guideline from the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) although not required by law was used by the vast majority of industry and chemical producers around the world. An AHRI revised guideline, first published in 2015, now removes paint colour assignments for refrigerant containers and specifies that all refrigerant containers should have the same paint colour from 2020 onwards.

NOOs and technicians should be aware of this change and inform national stakeholders, as well as familiarising themselves with relevant container labels and markings for refrigerants.

Read/download the [factsheet](#)



Update on [new refrigerants designations and safety classifications](#)

The latest version of the factsheet providing up to date information on refrigerant designations and safety classifications is now available (*September 2020 update*).

The factsheet, produced by **ASHRAE** in cooperation with **UN Environment Programme OzonAction** is updated every 6 months. The purpose is to provide an update on ASHRAE standards for refrigerants and to introduce the new refrigerants that have been awarded an “R” number (or ASHRAE designation) over the last few years and which have been introduced into the international market.

Read/download the [factsheet](#)



The factsheet, as well as more information on ASHRAE-UNEP joint activities and tools, is also available on the **[ASHRAE UNEP Portal](#)**.

Contact: [Ayman Eltalouny](#), OzonAction, UN Environment Programme

[OzonAction's iPIC platform - Updated](#)

Collaboration between China and Thailand using OzonAction's informal Prior Informed Consent (iPIC) system has resulted in the prevention of a huge consignment of ozone-depleting and climate damaging hydrochlorofluoro-carbons (HCFCs).

Those chemicals, which are primarily used as refrigerants for air conditioners and fridges, are controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer and are being phased out by all countries according to a specific timeline.

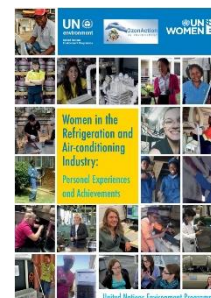


[Women in the refrigeration and air-conditioning industry: Personal experiences and achievements](#)

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](#)

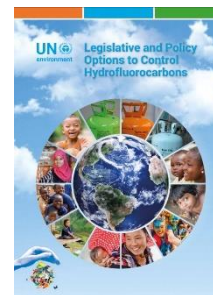


PUBLICATIONS

[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. [10-2021](#) (in Italian).



[Sustainable Cooling in support of a Resilient and Climate Proof Recovery](#), Report by the Climate and Clean Air Coalition (CCAC), 2021



[Status of the Global Food Cold-Chain: Summary Briefing-Food Cold Chain Food saved is as important as food produced](#).

The UNEP-led Cool Coalition in collaboration with the Climate & Clean Air Coalition (CCAC), United Nations Environment Programme (UNEP), United Nations Food and Agriculture Organization (FAO), OzonAction and the Ozone Secretariat, with the support of the Italian Government, are producing a status report on the global food cold-chain, which will include case studies to show the current state and development across areas such as technologies, design approaches, finance and business models, policy, and planning. This brief is a short summary of the full report that will be published in December 2021. The aim is to help better identify and accelerate solutions to simultaneously feed the world, support smallholder and marginal farmers, and protect our environment.



[Cool Coalition Secretariat, September 2021](#)

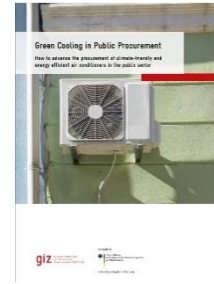
[Leaks, maintenance and emissions: Refrigeration and air conditioning equipment report](#) details common faults identified in both residential and commercial refrigeration and air conditioning equipment. The report also lists the impacts of these faults and how routine maintenance of the equipment has the potential to significantly reduce electricity use, refrigerant leaks and emissions.



The research was supported by an extensive survey of international and domestic literature included as Appendix B to the report.

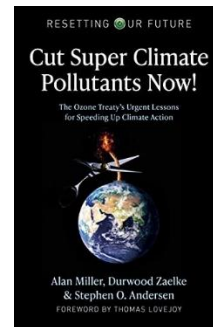
[Australian Government, Department of Agriculture, Water and the Environment, Expert Group, 2021](#)

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](#)**



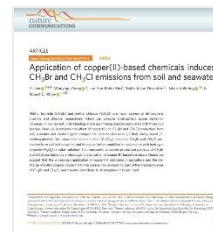
Cut Super Climate Pollutants Now!: The Ozone Treaty's Urgent Lessons for Speeding Up Climate Action (Resetting Our Future). We have a decade or less to radically slow global warming before we risk hitting irreversible tipping points that will lock in catastrophic climate change. The good news is that we know how to slow global warming enough to avert disaster. Cut Super Climate Pollutants Now! explains how a 10-year sprint to cut short-lived "super climate pollutants" -- primarily HFC refrigerants, black carbon (soot), and methane -- can cut the rate of global warming in half, so we can stay in the race to net zero climate emissions by 2050.

Authors: Alan Miller, Durwood Zaelke, Stephen O. Andersen.



Application of copper(II)-based chemicals induces CH₃Br and CH₃Cl emissions from soil and seawater - Methyl bromide (CH₃Br) and methyl chloride (CH₃Cl) are major carriers of atmospheric bromine and chlorine, respectively, which can catalyze stratospheric ozone depletion. However, in our current understanding, there are missing sources associated with these two species. [...]

Authors: Yi Jiao, Wanying Zhang, Jae Yun Robin Kim, Malte Julian Deventer, Julien Vollering & Robert C. Rhew. [Nature Communications](#), 13 January 2022



What Are the Health Benefits of Protecting the Ozone Layer?, Overexposure to ultraviolet (UV) radiation is considered to be a health risk, causing skin and eye damage, alongside effects on the immune system comment that ultimately compromise health. The primary protection against solar UV radiation is the stratospheric ozone layer... *Article in News-Medical.Net, 22 January 2022, By Hidaya Aliouche, B.Sc., Reviewed by Emily Henderson, B.Sc.*



MISCELLANEOUS



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