

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. Kigali Amendment latest ratifications

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

[United Arab Emirates, 19 April 2024](#)

[Thailand, 3 April 2024](#)

[Djibouti, 8 Mar 2024](#)

[Guatemala, 11 January 2024](#)



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. Upcoming 46th meeting of the Open-ended Working Group of the Parties

The forty-sixth meeting of the Open-ended Working Group of the Parties to the Montreal Protocol (**OWWG46**) and the seventy-second meeting of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol (**ImpCom72**) will be held 8-12 July 2024 in Montreal, Canada as follows:

- [ImpCom72: 7 July 2024](#)
- [OWWG46: 8 to 12 July 2024](#)

[Meeting information and documents >>>](#)

[Side events and exhibitions >>>](#)

[UNEP Ozone Secretariat, July 2024](#)

Image: UNEP Ozone Secretariat



3. Primer for Implementation Committee (Revised, Edition 2024), UNEP Ozone Secretariat

Implementation Committee under the Noncompliance Procedure for the Montreal Protocol.

PURPOSE OF THE PRIMER

This primer is intended to provide members of the Implementation Committee, especially new members, with a comprehensive understanding of the non-compliance procedure for the Montreal Protocol and the way in which the Committee has been operating since its establishment.

In that regard, it is important to note that the non-compliance procedure adopted by the parties consists of only 16 paragraphs and that, like any entity, the Implementation Committee has developed a mode of efficient operation over time that, while firmly based on the non-compliance procedure, relies to a considerable extent on custom and precedent.

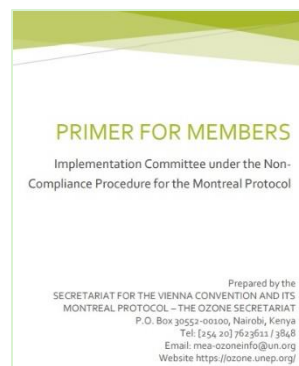
For this reason, the primer refers to the requirements of the non-compliance procedure and, where necessary, explains the practice of the Committee, noting that such practice has evolved over time and will continue to do so.

It is hoped that the primer will provide a basis for future advances in the timely and effective resolution of non-compliance cases while at the same time ensuring the consistent and transparent treatment of the issues by the Implementation Committee.

Read/download [Full text](#)

[UNEP Ozone Secretariat, 24 June 2024](#)

Image: Ozone Secretariat



4. Upcoming 2024 World Cold Chain Symposium

Less food waste. Reduced greenhouse gas emissions. Greater food security. This is the path to addressing hunger and a better future. It takes a more sustainable cold chain to get us there.

The World Cold Chain Symposium (WCCS) is a global conference organized by The Global Food Cold Chain Council (GFCCC) in partnership with the United Nations Environment Programme (UNEP) and sponsored by Carrier. [The 2024 World Cold Chain Symposium, Bangkok, Thailand, on Saturday, 26 October 2024.](#)

Register now to join the Global Food Cold Chain Council and experts worldwide, as we come together for an in-person, complimentary event focused on the benefits of building efficient and sustainable business models for the development of the cold chain around the globe. By registering below, you can also watch the replay of the 2023 event.

[The World Cold Chain Symposium \(WCCS\), 26 October 2024](#)



World Ozone Day 2024 theme announced "Montreal Protocol: Advancing Climate Action"

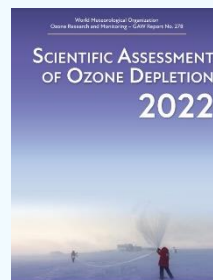
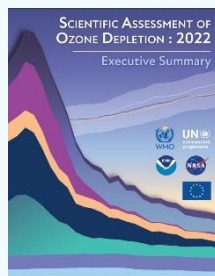
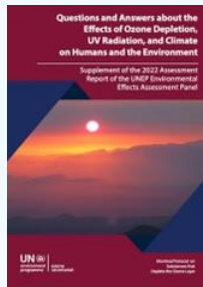
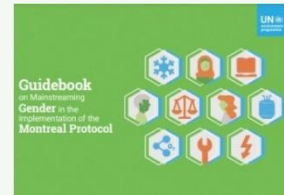
- The aim of this year's World Ozone Day is to raise awareness of how far the Montreal Protocol has progressed from ozone layer protection to also become a recognized powerful climate action tool. The Ozone Secretariat invites all parties to join the celebration of World Ozone Day and use the assets created around this year's theme to raise awareness among the public on the important work of the Montreal Protocol to safeguard us and the planet.

- > Theme in [Arabic](#) | [Chinese](#) | [English](#) | [French](#) | [Russian](#) | [Spanish](#)
- > Graphic visualisation: Full range of A1 posters for printing: [Arabic](#) | [Chinese](#) | [English](#) | [French](#) | [Russian](#) | [Spanish](#)

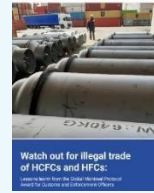


Guidebook on Mainstreaming Gender in the Implementation of the Montreal Protocol

- OzonAction, in consultation with UN Women and a gender expert, has developed this [Guidebook on Mainstreaming Gender in the Implementation of the Montreal Protocol](#) to advance the agenda of gender equality and women's empowerment through the implementation of Montreal Protocol activities. The Guidebook is designed to assist National Ozone Officers with addressing gender issues through their daily work and operations. [Read/download English](#) | [Russian](#)



Watch out for Illegal Trade of HCFCs and HFCs: Lessons learnt from the Global Montreal Protocol Award for Customs and Enforcement Officers. This publication provides an analysis of the cases submitted in the context of the **Global Montreal Protocol Award for Customs and Enforcement Officers**. The Global Award was launched in 2018 by UNEP OzonAction. This Global Award is intended to raise awareness about the Montreal Protocol and to recognise customs and enforcement officials for their efforts in preventing and combating illicit traffic in Montreal Protocol and Kigali Amendment-regulated substances. Ozone-depleting substances (ODS) include hydrochlorofluorocarbons (HCFCs) and other compounds with a high Global Warming Potential (GWP), particularly hydrofluorocarbons (HFCs).



UNEP OzonAction, ASHRAE, April 2023 Fact sheet: Update on New Refrigerants Designations and Safety Classifications. The purpose of this fact sheet is to provide an update on ASHRAE standards for refrigerants and to introduce the new refrigerants that have been awarded an «R» number over the last few years and introduced into the international market.



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 and throughout 2022 and beyond.



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

Image: Sustainable cold chains website

Categories



Vanuatu's Case Study on Integrating ODS/HFC Module into the National Single Window System - The National Single Window is a centralized system that links all relevant government approving authorities and acts as a 'one-stop-shop' where importers and exporters may submit applications electronically including information and all required paperwork to support the application and approval process. [Read/Download the Factsheet >>>](#)



Recognition of Prior Learning Scheme for Refrigeration and Air-Conditioning Servicing Technicians in Mongolia - The Recognition of Prior Learning (RPL) process can help those in the industry acquire a formal qualification that matches their knowledge and skills and thereby contributes to improving their employability, mobility, and lifelong learning. RPL can make a significant contribution to providing the relevant learning framework necessary for the present and ongoing maintenance of a quality workforce, especially in the RAC servicing sector. In Mongolia, the RPL process has been rolled out in over 30 TVET trades in the construction, mining, and other sectors, including apparel and culinary etc. Mongolia initiated the RPL scheme for RAC servicing



AFRICA

5. Anglophone Africa Ozone Officers meet to exchange Montreal Protocol experiences

Maputo, Mozambique, 10-12 June

– The Regional Network Meeting for National Ozone Officers (NOOs) of the English-speaking African Countries was held in Maputo, Mozambique from 10-12 June 2024. Organized by UNEP OzoneAction's Compliance



Assistance Programme (CAP) team in Africa in collaboration with Mozambique's Ministry of Land and Environment, the meeting aimed to provide an interactive forum for NOOs to exchange experiences, develop skills, and share knowledge and ideas with their counterparts from across the region. This also included participation from the Secretariats and Implementing Agencies in support of compliance of the Montreal Protocol on Substances that Deplete the Ozone Layer and its Amendments. The meeting was attended by 25 countries of the English-speaking African networks (34 male, 30 female).

Mr. Patrick Salifu, on behalf of Dr Rose Mwebaza, Director and Regional Representative of the UNEP Africa Office gave the opening speech. In his opening statement, Mr Salifu emphasized the critical juncture in efforts to safeguard the ozone layer and reduce the climate impacts of substances controlled by the Montreal Protocol and its Kigali Amendment. He stated, "The Montreal Protocol is one of the key solutions to solving the triple planetary crisis since it contributes to the protection of human health and the environment through ozone protection, climate protection, and by enhancing energy efficiency. Our discussions and collaboration over the next few days will help inform the future of your national and regional strategies and actions. The decisions we make here will have a profound impact on our environment, health, and economies. We at UNEP are proud to continue serving Africa through our Regional Office and in our capacity as an Implementing Agency of the Montreal Protocol's Multilateral Fund."

Speaking at the opening session, His Excellency Cheronimo R.J. Chivavi, Mozambique's Ambassador to Kenya, warmly welcomed the participants to Maputo. He reaffirmed the country's commitment to safeguarding the ozone layer and combating climate change. He also emphasized Mozambique's proactive role in environmental preservation and its dedication to international treaties aimed at curbing harmful emissions.

The meeting was officially opened by Mrs. Jadwiga Massinga, the National Director of Climate Change at the Ministry of Land and Environment in Mozambique. Mrs. Massinga underscored the importance of the meeting in the context of Mozambique's ongoing efforts to combat climate change and protect the ozone layer. She stressed the need for continued

collaboration and innovation in addressing the environmental challenges posed by hydrofluorocarbons (HFCs).

The meeting focused on the Kigali HFC Phase-down Implementation Plan (KIP) strategy and approach, addressing challenges in hydrochlorofluorocarbons (HCFC) phase-out and HFC phase-down in refrigeration and air-conditioning (RAC) applications. Discussions encompassed the HFC licensing system, data reporting, and gender mainstreaming, exploring ways to integrate gender issues into various aspects of Montreal Protocol implementation.

The meeting concluded with a commitment to ongoing cooperation and the establishment of a robust framework for monitoring progress and sharing knowledge across the region. This commitment is expected to reinforce efforts to mitigate the environmental impact of HFCs and promote sustainable development through improved energy efficiency.

Overall, the meeting marked a significant step forward in the region's effort to phase down HFCs, highlighting the importance of collaboration and shared expertise in addressing global environmental challenges.

Contact:

Patrick Salifu, UNEP Montreal Protocol Regional Coordinator, Anglophone Africa
Florence Asher, UNEP Programme Management Officer

Image: OzonAction ROA

ASIA AND THE PACIFIC

6. Bangladesh kicks off activities to promote Green Cooling

The Green Cooling Initiative (GCI) III successfully commenced its activities in Bangladesh with a workshop on “Transition towards a Greener Cooling Approach” in Dhaka on 09 May 2024. The workshop was hosted jointly by the Department of Environment (DoE) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The Secretary of the Ministry of Environment, Forest and Climate Change (MoEFCC) attended the event as Chief Guest.



At this event stakeholders of the refrigeration and air conditioning (RAC) sector in Bangladesh were gathered to discuss the challenges and opportunities in transitioning towards greener cooling solutions. The speakers put emphasis on the need for introducing green cooling technologies in Bangladesh, as per the targets under the Montreal Protocol, the government has to phase out hydrofluorocarbons (HFCs) refrigerants in the coming years. Especially, trainings of the service sector workforce are vital to introduce ACs with natural refrigerants in the market.

GCI III, commissioned by the German Federal Ministry of Environment, Nature Conservation, Nuclear Safety, and Consumer Protection (BMUV), and implemented by the Deutsche

Gesellschaft für Internationale Zusammenarbeit (GIZ), aims to offer tailored technical support, policy advice, help with technology transfer, and capacity building to speed up the shift to Green Cooling.

[Green Cooling Initiative \(GCI\), 6 June 2024](#)

Image: GCI

LATIN AMERICA AND CARIBBEAN

7. Cuba to hold workshop on ozone layer protection

Matanzas, Cuba, Jun 17 (Prensa Latina) The Cuban province of Matanzas will hold (from Monday through June 20) a national workshop on protection of the ozone layer and climate in Cuba in order to assess results and programs related to this issue.



Representatives of the Ministry of Science, Technology and Environment (CITMA) from different provinces will attend the meeting which has -among its essential objectives- to analyze the governmental management on the conservation of the ozone layer in the period 2023-2024.

According to www.giron.cu, the workshop is being supported by the Implementing Agency of the United Nations Development Programme (UNDP) and it will discuss different issues including energy efficiency in the Montreal Protocol, courses on good practices in refrigeration and air conditioning and hydrocarbons and outreach campaigns for the conservation of the ozone layer and climate.

Monitoring national phase-out plans for hydrochlorofluorocarbons (HCFCs) phase II and reduction of hydrofluorocarbons (HFCs) will also be issues to be discussed, the press media says.

The Ozone Technical Office and the Center for Information Management and Energy Development in Cuba promote the development of events of this nature that become of paramount importance in the delivery of courses of good practices in refrigeration and air conditioning from the territorial bases of CITMA throughout the country.

[Spanish version](#)

[Prensa Latina, 17 June 2024](#)

Image: Prensa Latina

8. Brazil will start the implementation of Stage 3 of the HPMP



The third Stage of the Brazilian Hydrochlorofluorocarbons Phase-out Management Plan (HPMP) was approved during the 94th Meeting of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol, which took place between May 27th and May 30th. The country will count with US\$ 36,5 million to implement the third and last phase of the program that aims to achieve the elimination of 100% of HCFC consumption by 2030.

In addition to the effective contribution to protecting the ozone layer, the country will avoid the emission of more than 19,5 million tons of CO₂ equivalent to the atmosphere, representing a significant step forward in tackling climate change. HPMP Stage 3 activities focus on better containment of HCFCs already existent in the country, either by regenerating, recycling or preventing leakages, in order to maintain stocks and avoid early replacement with high global warming potential (GWP) refrigerants.

Additionally, with the aim of promoting the safe and efficient use of alternative refrigerants that do not destroy the ozone layer and have a low GWP, capacity building activities will be continued to train different levels of professionals in the sector, who work with the installation and/or maintenance of refrigeration and air conditioning systems.

The activities will be executed by the coordinating entity of the program, the Brazilian Ministry of Environment and Climate Change (MMA), with the support of three implementing agencies, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the United Nations Development Programme (UNDP) and the United Nations Industrial Development Organization (UNIDO).

[Read in Portuguese: Brasil recebe US\\$ 36,5 milhões para ações de proteção da Camada de Ozônio – Boas Práticas Refrigeração](#)

[Green Cooling Initiative \(GCI\), 25 June 2024](#)

Image: GCI

NORTH AMERICA

9. USEPA publishes Technology Transitions proposed rule on variable refrigerant flow systems (6/26/2024)

Under subsection (i) of the American Innovation and Manufacturing (AIM) Act, EPA may restrict the use of hydrofluorocarbons (HFCs) by rule in a sector or subsector. Below are rulemakings related to the Technology Transitions Program.



June 2024 – Technology Transitions Proposed Restrictions on the Use of Certain HFCs in the Residential and Light Commercial Air Conditioning and Heat Pump Variable Refrigerant Flow Systems Subsector

This proposed rule would narrowly amend a provision of the Technology Transitions regulation published on October 24, 2023 (88 FR 73098). It proposes to allow one additional year, until January 1, 2027, solely for the installation of new Variable Refrigerant Flow (VRF) systems using HFCs with a global warming potential of 700 or more, and where the components were manufactured in the U.S. or imported into the U.S. prior to January 1, 2026.

EPA is accepting public comment for 30 days after publication in the *Federal Register*.

VRF proposed rule materials (June 2024)

- [Federal Register Link to the Proposed Rule](#)

USEPA, 26 June 2024

Image: USEPA

10. Fluorocarbon Banks Inventories Workshop

This event is organized by the CCAC together with the [Ministry of the Environment of Japan/Initiative on Fluorocarbons Life Cycle Management \(IFL\)](#), [Climate Ozone Protection Alliance \(COPA\)](#), [Carbon Containment Lab](#) and [UN Industrial Development Organization \(UNIDO\)](#) in the margins of, but independent from, the Forty-Sixth Meeting of the [Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer \(OEWG-46\)](#).



Sunday, 7 July 2024, 08:00 - 17:00 (New York)

Lifecycle Refrigerant Management (LRM) has been identified as one of the focus areas of the CCAC Cooling Hub and this workshop aims to familiarize participants with approaches and experiences in preparing national inventories of banks of controlled substances and national plans for management of these substances, in support of the work being funded by the Multilateral Fund pursuant to Decision 91/66 of the Executive Committee of the Fund.

AGENDA

Climate and Clean Air Coalition (CCAC)

Image: CCAC

11. Regulatory Updates: EPA's Latest Significant New Alternative Policy (SNAP) Program Rule – Webinar

GreenChill webinar on

Thursday, July 25 from 1 – 2 PM Eastern

Presenters from EPA will provide an overview of the SNAP Program and the SNAP Program Final Rule. SNAP Rule 26:

- Lists 10 refrigerants as acceptable, subject to use conditions in the refrigeration and air conditioning sector;
- Incorporates by reference the latest versions of industry standards;
- Modifies use conditions for R-290 in two end-uses; and
- Exempts R-290 in the refrigerated food processing and dispensing end-use from the Clean Air Act Section 608 venting prohibition.

Join this webinar to learn how SNAP Rule 26 pertains to the retail food refrigeration end-uses.

[Register Now!](#)

[USEPA, GreenChill, July 2024](#)

Image: GreenChill



12. Washington's Dept. of Ecology fines Home Depot \$1.6 million for selling banned products

The Washington state Department of Ecology has issued a \$1.6 million fine against Home Depot for selling products restricted under state law. The company has 30 days to appeal the fine.

The fine is for failing to comply with updated regulations in state law regarding the sale of hydrofluorocarbon (HFC) products, including R-134a canisters.

R-134a is a refrigerant that was commonly used in vehicles for many years. Manufacturers have largely pulled away from the refrigerant for alternatives with lower climate impacts, as the release of R-134a can be devastating to the atmosphere.

The Washington Legislature passed laws in 2019 and 2021 to phase out the use of HFCs in the state. The Department of Ecology worked with manufacturers and retailers as legislation updated to help them remain compliant, according to a recent press release from the department.

HFCs have primarily been used for refrigeration and air conditioning purposes. When equipment is imperfect, the gases can leak into the atmosphere. In a leak, HFCs have



hundreds of thousands of times the global warming impact of carbon dioxide, according to the press release.

For example, R-134a is used in car air conditioning systems and comes with a global warming potential 1,430 times carbon dioxide's.

While many car manufacturers have stopped using R-134a, drivers are not required to change the system their cars use. Many drivers still have systems using R-134a. To prevent home repairs, and the subsequent release of HFCs into the air, Washington's updated legislation banned the sale of R-134a canisters at retail stores.

If someone has a car that still uses R-134a, and needs related repairs, they should go to a shop where the refrigerant can be collected and recycled.

"Restricting HFC products and equipment is key to achieving the state's statutory greenhouse gas emission limits and ultimately getting to net zero by 2050," stated Climate Pollution Reduction program manager, Joel Creswell, in the press release. "HFCs safely sealed inside air-conditioning systems can be recovered, recycled and re-used, but when they leak out, they become a major contributor to climate change."

The Department of Ecology informed manufacturers and retailers of the updated legislation and offered education on compliance options. According to the press release, most businesses then updated their sales practices online and in-stores after receiving these updates in late 2021.

Home Depot continued to offer the canisters online, despite continued contact from the Department of Ecology.

This led to the sale of more than 1,000 of the canisters between April 2022 and September 2023, based on information Home Depot supplied the Department of Ecology.

The state law outlines penalties of up to \$10,000 per violation of the HFC restrictions. Since the company provided the sales numbers upon request, the Department of Ecology reduced the fine to \$1,500 per violation, equaling the \$1.6 million fine.

Home Depot can appeal the fine with the Pollution Control Hearings Board within 30 days of notice.

[The City Herald, 30 June 2024, By: Karlee Van De Venter](#)

Image: The City Herald | View Image from April 2019 © 2023 Google

EUROPE & CENTRAL ASIA

13. Azerbaijan explores joining UN's Global Cooling initiatives

In a significant move towards environmental stewardship, Azerbaijan is considering joining the United Nations' Global Cooling initiatives.



According to [Report](#), Elnur Aliyev, First Deputy Minister of Economy, held crucial talks with Inger Andersen, UN Under-Secretary-General and Executive Director of the UN Environment Programme (UNEP).

During the discussions, Aliyev emphasized Azerbaijan's progress in adopting alternative and renewable energy sources. He outlined the country's efforts in applying environmentally friendly "green" technologies and transitioning towards a "green" economy. These initiatives align with Azerbaijan's National Priorities.

The meeting also touched upon Azerbaijan's preparations for hosting COP29 in Baku.

The UN representatives commended Azerbaijan's recent efforts in transitioning to alternative energy. They particularly praised the country's declaration of 2023 as the Green World Solidarity Year and the subsequent environmental initiatives.

Both parties explored opportunities to expand cooperation with the UN Environment Programme. Discussions included the possibility of Azerbaijan joining UNEP's financial initiatives and the Global Cooling program.

[Report Azerbaijan News Agency, 27 June 2024](#)

Image: Report Azerbaijan News Agency

14. Can we enhance Ozone Layer Protection and Food Security in Remote Areas? Yes, this is how.

How can we store fruits and vegetables longer, in any climate, and ensure they reach customers year-round? According to the Food and Agriculture Organization (FAO) report, in 2023, over 1.3 billion tons of food are wasted annually, with 45% of fruits and vegetables lost due to poor storage. Meanwhile, around 800 million people suffer from hunger. Climate change and inefficient refrigeration and storage methods further degrade food quality and contribute to global warming.



In addition, there is a decrease in yield of agriculture productivity and an acceleration of the decay process because of climate change, global warming, and the depletion of the ozone layer. Refrigeration and air conditioning technologies developed based on hydrochlorofluorocarbons (HCFCs) affect the depletion of the ozone layer, which in turn intensifies global warming. All these negative consequences add up to increased health risks for the population (skin cancer, eye cataract, etc.) and decrease in agriculture productivity.

To work on tackling these issues, the Ministry of Ecology, Environmental Protection, and Climate Change of Uzbekistan, UNDP, and the Global Environmental Fund has been supporting green technologies within joint project **“Complete HCFC Phase-out in Uzbekistan through Promotion of Zero ODS Low GWP Energy Efficient Technologies”**. To demonstrate and test green technologies in real-world conditions for further upscaling, paving the way for the green transition of Uzbekistan's refrigeration and air-conditioning sector.

On 13 June 2024, the private firm Asel-Lazzet in Kanlykol, Karakalpakstan, celebrated the opening of one of such demonstration projects. The event, attended by local officials and representatives of the Ministry of Ecology, Environment Protection and Climate Change and UNDP, highlighted new refrigeration systems using R290 or propane, which is harmless to the ozone layer, led by Mr. Bahrom Sultanov, the mayor of Kanlykol District.

“Asel-Lazzet” supplies over 1,000 children in 15 kindergartens with fruits and vegetables safely stored in eco-friendly freezers. This modern refrigerator chamber, with a capacity of 50 tons, ensures food security, prevents waste, and maintain high quality of food for children in remote areas.

UNDP Uzbekistan, 26 June 2024

Image: UNDP Uzbekistan - the participants of the event - Photo: Gulnur Kaypnazarova

15. How to deal with CFC-containing materials

Expert insight on hazardous material handling and the recycling of insulating materials

Over 200 demolition industry professionals gathered in Belgrade, Serbia, recently for the EDA annual convention.

While the event kicked off with a day of workshops, expert presentations on the second day of the convention provided attendees with a wealth of knowledge.

Key among them was a presentation delivered by expert environmental consultant and biogeoscientist Marianne Hedberg Miljøbygge, who provided insight into the handling and treatment of hazardous substances.

Dealing with hazardous waste: Insulations and CFCs

Marianne explained and discussed the direct - but often overlooked - impact that insulation has on the earth's Ozone layer. She referenced the 1989 international Montreal Protocol on Ozone Depleting Substances and its 2016 update, which bans the production and use of chlorofluorocarbons (CFCs) and hydrofluorocarbons (HFCs) and other manmade chemicals (greenhouse gases) used in refrigerants, insulating foams and air-conditioning.

When CFC compounds are released into the atmosphere they make their way up into the earth's stratosphere and start to react with the Ozone.



Ozone (O₃) is a highly reactive gas made up of three oxygen atoms, that protects the planet from the ultraviolet radiation in space. When CFCs and HFCs mix with the Ozone, they break down the O₃ into oxygen (O₂), which does not filter out the ultraviolet radiation from space.

"But the CFCs are just a catalyst," said Marianne. "They take part in the reaction, in the splitting of the O₃ into O₂, and then go off to the next reaction. And the next reaction, and the next and so on.

"This is why CFCs are so damaging. The compound will eventually break down, but not quickly. In fact, not for 100 years," she said.

"So whatever was whatever CFCs were produced in the 1970s are still up there, reacting with our Ozone layer".

How demolition contractors should handle insulation

So, what does this mean for demolition, decommissioning and decontamination contractors when dealing with insulation?

Marianne explained that "at the time when each piece of insulation was created, it was done by taking the material - polyurethane, for example, and blowing [inflating] it up with a CFC gas.

"And whatever CFC gas was used, still remains in the material's pores today. Even though it may have been produced in the 1970s or earlier."

"So, you can see that we have a bit of a problem with this insulation because it is still in many structures around the world. To take care of these materials we need special understanding."

Marianne added that when any insulation containing material, such as insulated piping, sandwich boards and refrigeration products, are cut, torn or crushed on work sites during the demolition and sorting processes, these CFCs are released into the atmosphere.

She said: "It might be tempting to take metal-covered foam insulation, sandwich boards and other items and send it to a metal scrap dealer, and to get something [money] for it."

"But then the material is crushed in open air. And what happens to the gas is contained within the insulation and foams? They go up into the stratosphere. And destroy the ozone layer.

Where is this insulation found?

- Sandwich walls for cold storage
- Refrigerators and freezers
- Refrigerated containers
- Truck lockers
- Caravans
- Pipes for district heating and cooling
- Front blanked course
- Insulation board in walls, roofs and ground

To prevent this, Marianne said that demolition contractors must seek out and utilise the services of special recyclers that have the appropriate equipment and permits to safely separate the recyclables from the insulation materials, prior to their incineration.

"This is where the regulations may seem a little bit costly, because the machinery that handles the insulation has to be enclosed in an airtight space.

“Then the pressure of that space has to be reduced to prevent explosions and fire, and after that the material can be crushed.

“Solid, reusable material is then taken out for all recycling - a very high percentage can be recovered. And the hazardous gas can be taken care of by being condensed into a fluid state that can then be sent for destruction.

“It has to be incinerated at 1,200 degrees Celsius or above,” Marianne explained, “Otherwise it will just pass through the process.

“If you send your waste insulation material to just an ordinary recycler or waste management company, the incineration temperature utilised usually only goes up to 850 degrees Celsius, and that is not enough to destroy this hazardous substance.

“So, this is why we need contractors to use proper plants that can handle these materials. These plants must have the appropriate permit to be able to do this.”

According to Marianne, Sweden currently has two specialist waste management companies that have the required equipment and permits to carry out this work.

The European Environmental Agency estimates that only 10% of CFC and HFC containing insulation materials are dealt with in the proper manner.

Regulations on F-gases and substances that deplete the Ozone layer

Article 8 Recovery and Destruction / Article 20 Recovery and Destruction of used Ozone-depleting substances

8/2. From 1 January 2025, building owners and contractors shall ensure that, during renovation, refurbishing or demolition activities implying the removal of foam panels that contain foams with fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II, emissions are avoided to the extent possible by handling the foams or the gases contained therein in a way that ensures the destruction of those gases.

In the case of recovery of those gases, the recovery shall be carried out only by appropriately qualified natural persons.

9/3....foams in laminated boards installed in cavities or built-up structures that contain fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II.

Demolition & Recycling International, 24 June 2024, Leila Steed, Editor

Image: Demolition & Recycling International - Environmental consultant and bio-geoscientist Marianne Hedberg Miljobygge, speaking at the EDA Annual Convention in Belgrade, Serbia. (PHOTO: EDA)

See Also >>> [The 2024 European Demolition Association \(EDA\) Annual Convention, 13-15 June 2024, Belgrade, Serbia.](#)

16. EU Member States to Bolster Environmental Crime Laws

The [EU Parliament and Council Directive on the protection of the environment through criminal law \(2024/1203\)](#) (the “Environmental Crime



Directive”) came into force in late May 2024. As a result, EU Member States are now obliged to expand the reach of their national criminal laws to more effectively detect, investigate, prosecute, and adjudicate environmental criminal offences.

The Environmental Crime Directive builds on its predecessor, Directive 2008/99/EC, by more than doubling the number of criminal offenses to twenty. New criminal offenses include, for example, the manufacture, import, discharge, or marketing of various types of substances that are likely to cause the death of, or serious injury to, any person, or substantial damage to the quality of air, soil, water, ecosystem, animals, or plants.

Other conduct is to be treated as a crime, not because of its actual or potential risk to humans or the environment, but because it contravenes specialized environmental laws that presently lack criminal sanctions, such as:

- Regulation (EU) 2023/1115 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation;
- Regulation (EU) 2024/590 on substances that deplete the ozone layer;
- Regulation (EU) 2024/573 on fluorinated greenhouse gases; or
- the laws adopted pursuant to Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.

The Environmental Crime Directive also permits EU Member States with broad authority to provide additional criminal sanctions for any other laws with the objective of environmental protection. This could include criminal sanctions for environmental diligence and disclosure activities under EU Corporate Sustainability Due Diligence Directive as approved on May 24, 2024 (such sanctions are already in place in a few jurisdictions).

As an instrument that does not, in principle, have direct effect, the Environmental Crime Directive will need to be transposed into national EU Member State laws before it can create obligations or rights for companies and individuals. EU Member State legislators now have two years to do so within the framework and minimum requirements set out in the Environmental Crime Directive.

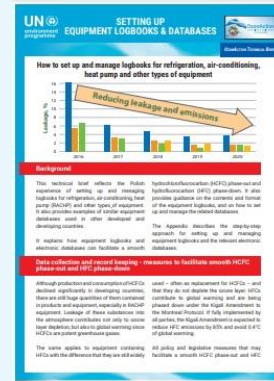
To this end, it mandates, for the most serious crimes, the introduction of maximum terms of imprisonment of at least 10 years for individuals, and of monetary penalties for corporate perpetrators, where the maximum financial penalty is not less than 5% of the corporate perpetrator’s total worldwide turnover or EUR 40 million, whichever is greater. Accessory liability penalties may include orders to restore or compensate for the damage done, the exclusion from public funding and tender procedures, as well as the withdrawal of licenses, concessions, and permits. To improve the effectiveness of national enforcement action, investigators will be equipped with enhanced powers more akin to those traditionally employed to combat organized crime.

While it may take some time before the Environmental Crime Directive can be fully implemented across the EU, a number of countries, including Belgium, France, and Germany, have already adopted laws that replicate at least part of the Environmental Crime Directive’s requirements.

O’Melveny, 21 June 2024

Image: O’Melveny

How to set up and manage logbooks for refrigeration, air-conditioning, heat pump and other types of equipment - Background: This technical brief reflects the Polish experience of setting up and managing logbooks for refrigeration, air-conditioning, heat pump (RACHP) and other types of equipment. It also provides examples of similar equipment databases used in other developed and developing countries. It explains how equipment logbooks and electronic databases can facilitate a smooth hydrochlorofluorocarbon (HCFC) phase-out and hydrofluorocarbon (HFC) phase-down. It also provides guidance on the contents and format of the equipment logbooks, and on how to set up and manage the related databases. The Appendix describes the step-by-step approach for setting up and managing equipment logbooks and the relevant electronic databases. **This factsheet is available in English and Russian**
[UN Environment, OzonAction, August 2023](#)

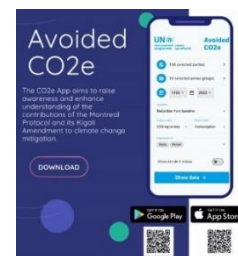


FEATURED



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

Avoided CO₂e - The CO₂e App available from the Ozone Secretariat aims to raise awareness and enhance understanding of the contributions of the Montreal Protocol and its Kigali Amendment to climate change mitigation.

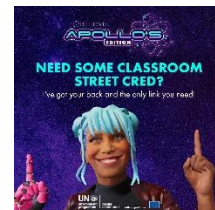


World Ozone Day 2023 theme: Montreal Protocol: fixing the ozone layer and reducing climate change - On World Ozone Day, we celebrate the achievements of the Montreal Protocol on Substances that Deplete the Ozone Layer in fixing the ozone layer and reducing climate change. The theme for the 2023 International Day for the Preservation of the Ozone Layer, to be marked on 16 September, is **Montreal Protocol: fixing the ozone layer and reducing climate change**. This reiterates the recent finding by the Scientific Assessment Panel of the positive impact the Montreal Protocol has on climate change, that ozone recovery is on track and how climate challenges can be supported through the Kigali Amendment.



The theme and other related materials available [here](#) in the six UN official languages.

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**



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](#)

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 >>>](#)

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



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 93 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.

On 27 October 2023, the Thirty-Fifth Meeting of the Parties to the Montreal Protocol (35thMOP) decided on the replenishment of the Multilateral Fund for the triennium 2024-2026. The Parties agreed on a budget of US \$965 million for the triennium, a record amount.

As at 8 November 2023, the contributions received by the Multilateral Fund from developed countries, or non-Article 5 countries, totalled over US\$ 4.7 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 (HPMPs), 24 Kigali HFC implementation plans (KIPs), pilot projects to maintain and/or enhance energy efficiency in the context of HFC phase-down and has funded the establishment and the operating costs of ozone offices in 145 Article 5 countries.

New and updated guides and submission forms for the preparation of project proposals:

- Guide for funding requests for preparation of national inventories of banks of used or unwanted controlled substances and a plan for the collection, transport and disposal of such substances >>>
- Updated interim guide for the presentation of stage I of Kigali HFC implementation plans (July 2023) >>>
- Updated guide for the presentation of new stages of HCFC phase-out management plans (July 2023) >>>

All guides and submission forms are available [here](#)

- 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

OzonAction: Celebrating International Women's Day, 8 March 2024 - on the occasion of **International Women's Day (IWD)**, UNEP OzonAction would like to express our best wishes and sincere thanks to all our female colleagues working in National Ozone Units for your leadership, outstanding dedication, great intellectual input, and tireless work on the Montreal Protocol! This treaty is often referred to as the most successful multilateral environmental agreement to date, and both women and men take equal credit in making this amazing achievement possible. OzonAction is extremely proud of all the female **Ozone Officers, Assistant Ozone Officers, technical experts, and support staff**, as well the women in national stakeholder groups and partner organizations, notably those in the **refrigeration, air conditioning, and customs**. Through your work, you are providing girls and young women who are interested in pursuing careers in environmental protection with a role model by showing them that there are successful women in Montreal Protocol fields – you are indirectly investing in their future. [...]



- **Miruza Mohamed: A Woman Behind the Maldives' Environmental Transformation**
- **Samira de Gobert: Leading Change in Environmental Communication and Women's Empowerment**
- **Colleen Keyworth - From Family Roots to Industry Beacon: Leading Advocate for Women in HVACR**
- **Laura López: Impulsando la implementación del Protocolo de Montreal y la equidad de género en Guatemala**
- **Marta Pizano: A trailblazer's path from research to global policy**
- **Liazzat Rabbiosi: A Woman Facilitating International Environmental Policy-making**
- **Cecilia Mercado: Breaking Barriers-A legacy of environmental leadership and empowerment**
- **Sarah Nakanyika: A Woman Leading Cooling Advancement in Zambia**
- **Yvette Gauthe Boko: Une femme forte à la tête du Bureau national de l'ozone au Bénin**

Considerations for establishing national HFC Quota System - As HFC consumption in most countries is determined by their import, this document aims to highlight guiding principles and key aspects that countries need to consider when developing their import quota system. The underlying principles and approaches are equally applicable for production and export quota allocation. [Read/download the full document](#)



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).

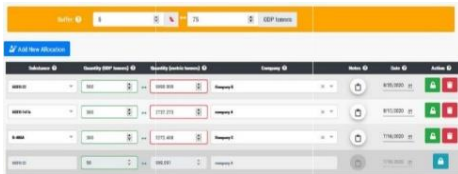
More Information - The Gas Card web based tool is part of UNEP OzonAction’s portfolio of activities and tools to assist various stakeholders in developing countries, including customs officers and technicians, to achieve and maintain compliance with the Montreal Protocol on Substances that Deplete the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



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 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](#).

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 hydrochlorofluorocarbons (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 weld and follow in their footsteps. **Read/download the publication**

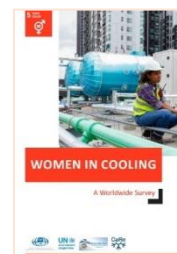


As part of IIR and UNEP OzonAction's partnership, a set of Cold Chain Technology Briefs was released over the past few years, which includes in-depth summaries about the cold chain in different key sectors. They include descriptions of technology, refrigerant options and trends and conclude with prospects 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**

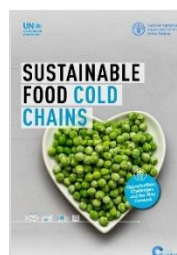


PUBLICATIONS

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.



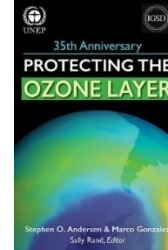
Legislative and Policy Options to Control Hydrofluorocarbons - In order to follow and facilitate the HFC phase-down schedules contained in the Kigali Amendment, the Parties, including both developed and developing countries, will have to implement certain measures. This booklet contains a recommended 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**



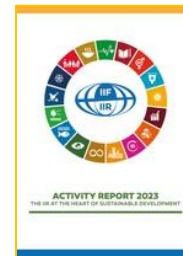
Green Cooling in public procurement How to advance the procurement of climate-friendly and energy-efficient cooling equipment in the public sector? Air conditioning in public buildings is often responsible for around 50% of total electricity consumption. Switching to climate-friendly cooling technologies ("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](#)



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 International Institute of Refrigeration (IIR) [IIR Activity Report 2023 | Rapport d'activité de l'IIR - 2023](#) is available online. It is a must-read for everything you need to know about advances in the field of refrigeration! [Read/Download the full report to discover the IIR's actions and achievements in 2023 in its quest for a cooler, greener and more sustainable future!](#) [English](#) | [French](#)



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