

OzoNews

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

Volume XXIV | 30 July 2024

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JOB OPENING

- > Programme Management Officer - P4 - **Deadline** : Aug 10, 2024
- > Senior Programme Management Officer, P5 (re-advertised) - **Deadline** : Aug 8, 2024

GLOBAL

1. Kigali Amendment latest ratifications

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

Bahrain, 1 July 2024
United Arab Emirates, 19 April 2024
Thailand, 3 April 2024
Djibouti, 8 March 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](#).

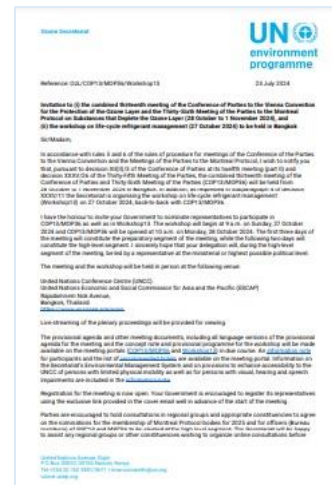
United Nations Treaty Collection

Image: UN Treaty Collection website

2. Ozone Secretariat - Invitation to (i) the combined 13th meeting of the Conference of Parties to the Vienna Convention for the Protection of the Ozone Layer and the 36th Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (28 October to 1 November 2024), and (ii) the workshop on life-cycle refrigerant management (27 October 2024) to be held in Bangkok

In accordance with rules 5 and 6 of the rules of procedure for meetings of the Conference of the Parties to the Vienna Convention and the Meetings of the Parties to the Montreal Protocol, The Ozone Secretariat wish to notify you that, pursuant to decision XII(II)/3 of the Conference of Parties at its twelfth meeting (part II) and decision XXXV/26 of the Thirty-Fifth Meeting of the Parties, the combined thirteenth meeting of the Conference of Parties and Thirty-Sixth Meeting of the Parties (COP13/MOP36) will be held from 28 October to 1 November 2024 in Bangkok. In addition, as requested in subparagraph 4 of decision XXXV/11 the Secretariat is organising the workshop on life-cycle refrigerant management (Workshop13) on 27 October 2024, back-to-back with COP13/MOP36.

The Ozone Secretariat have the honour to invite your Government to nominate representatives to participate in COP13/MOP36 as well as in Workshop13. The workshop will begin at 9 a.m. on Sunday, 27 October 2024 and COP13/MOP36 will be opened at 10 a.m. on Monday, 28 October 2024. The first three days of the meeting will constitute the preparatory segment of the meeting, while the following two days will constitute the high-



level segment. I sincerely hope that your delegation will, during the high-level segment of the meeting, be led by a representative at the ministerial or highest possible political level.

The meeting and the workshop will be held in person at the following venue:

United Nations Conference Centre (UNCC)
United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
Rajadamnern Nok Avenue, Bangkok, Thailand
<https://www.unescap.org/uncc>

Live streaming of the plenary proceedings will be provided for viewing.

The provisional agenda and other meeting documents, including all language versions of the provisional agenda for the meeting and the concept note and provisional programme for the workshop will be made available on the meeting portals (COP13/MOP36 and Workshop13) in due course. An information note for participants and the list of recommended hotels are available on the meeting portal. Information on the Secretariat's Environmental Management System and on provisions to enhance accessibility to the UNCC of persons with limited physical mobility as well as for persons with visual, hearing and speech impairments are included in the information note.

Registration for the meeting is now open. Your Government is encouraged to register its representatives using the exclusive link provided in the cover email well in advance of the start of the meeting.

Parties are encouraged to hold consultations in regional groups and appropriate constituencies to agree on the nominations for the membership of Montreal Protocol bodies for 2025 and for officers (Bureau members) of COP13 and MOP36 to be elected at the high-level segment. The Secretariat will be happy to assist any regional groups or other constituencies wishing to organize online consultations before the meetings. If you require assistance in this regard, please contact the Secretariat (stephanie.haysmith@un.org).

Rule 18 of the rules of procedure for meetings of the Conference of the Parties to the Vienna Convention and the Meetings of the Parties to the Montreal Protocol provides that the credentials of representatives and the names of alternate representatives and advisers should be submitted to the Executive Secretary of the meeting, if possible, no later than 24 hours after the opening of the meeting. Any later change in the composition of a delegation should also be submitted to the Executive Secretary. Accordingly, credentials are required for participation in the meeting and should be issued either by a Head of State or Government or by a minister for foreign affairs or, in the case of a regional economic integration organization, by the competent authority of that organization.

Limited funds are available to assist the participation of parties operating under paragraph 1 of Article 5 of the Protocol (Article 5 parties) and countries with economies in transition. Should your Government require such assistance, please submit an official request that includes the details of the representative to be assisted to the Secretariat (mea-ozoneinfo@un.org) by 13 September 2024. The request for funding must be signed by an officer at a higher level than the nominee, in your Government. The travel of only one participant, using the most appropriate and economical fare, including a daily subsistence allowance in accordance with United Nations travel policies and procedures, will be covered for each country selected for assistance. Additional funding may be considered on request, for ministers attending the high-level segment of the meeting. The selection will take into consideration, among other factors, regional and subregional balance, gender balance (with

a view to increasing the participation of female delegates), the timeliness of the submission of the funding request as well as membership in the various Montreal Protocol bodies. Decisions on the provision of financial support will be communicated to participants by 30 September 2024.

The Ozone Secretariat looks forward to welcoming you in Bangkok and working with you to achieve a successful outcome of our meetings.

UNEP Ozone Secretariat, 23 July 2024

Image: UNEP Ozone Secretariat

3. Water from the Seine is cooling the 2024 Summer Olympics

Summary

Paris has been preparing for the 2024 Summer Olympics for a decade. In the final days leading up to the big event, organizers readied for the Seine to host a dramatic opening ceremony, during which athletes will float down the river on boats, with the Eiffel Tower laying backdrop to it. One ambitious goal among these preparations: to host the **first carbon-neutral Olympics** in modern history.



In a climate-friendly effort to keep athletes and attendees cool and comfortable throughout the event, the Olympics are foregoing traditional air conditioning in exchange for an alternative cooling system – one which will use river water from the Seine to cool all buildings affiliated with the event.

The system driving this operation is called district cooling, and its technology long predates this summer's Olympics. The first system of its kind was built in 1962 in Hartford, Connecticut, and has since grown to be **one of the largest in the world**. The city's gas company at the time had connected to all the interstate pipelines, bringing a surplus of gas to the city, which went unused in the summer. So a district energy system was created through which gas could be used to chill water and cool buildings in the summer, and steam for heat in the winter.

Created in 1991, Paris' district cooling network is already **Europe's largest**, currently serving more than 2,000 buildings in the south of the city, and its recent growth to meet the Olympics' climate goals has cemented its lead in the rankings.

ENGIE, the company behind the cooling system, is using water from the Seine and recovered heat from a data center to heat the Olympic pool. ENGIE has also created a cooling system – separate from the central system in Paris – for the Olympic Village, which will turn into housing after the Olympics conclude. With sustainability in mind, the Village was constructed in a way that generates 50 percent fewer greenhouse gas emissions than standard construction, using wood rather than steel in small buildings and low-carbon concrete in larger ones. The housing will also include affordable units.

“District cooling is a central plant or plants that produce chilled water,” explains Rob Thornton, president and CEO of the nonprofit International District Energy Association. “There is a network of insulated pipes in which water is pumped (generally underground), and then the connected buildings receive cold water, which flows into a heat

exchanger. The cold water absorbs the heat from the space, and the warmer water flows back into the central plant. It's a closed loop."

District cooling systems maintain a few advantages over traditional air conditioning, which functions by sucking air out of an area to cool the gas in the air conditioning system, after which the cooler air is blown back into the space.

District cooling reduces the space requirements for individual air conditioning units, which usually reside on rooftops and perpetuate the urban heat island effect, in which cement causes cities to become hotter than their rural surroundings. In Paris, where roofscapes are high-value properties, utilizing an alternative system frees up all this space for other uses, which could take the form of rooftop gardens or other heat-absorbing environments.

According to Thornton, the cost of cooling cities can be decreased by 50 to 90 percent through the use of district cooling. That is, after the initial investment in the infrastructure, which can cost up to \$1 billion. The source of this investment varies from country to country. In the US, Thornton says, it is primarily private investment, though the federal government can support some initial costs through the Inflation Reduction Act.

"In other locations like Dubai, it's often sovereign wealth funds, so a combination of public and private capital," says Thornton. "In Dubai, they've cut both carbon emissions and electricity demand in half. So, they see a dividend both economically and environmentally."

These systems are most suitable to urban centers, as they require a certain level of population density to be economically feasible — which is good news considering the population centers around the world exist predominantly in hotter climates. Asian cities make up about half of the most populated capitals globally, and these are the same cities that have seen some of the most dramatic recent temperature increases.

And cities that historically haven't required air conditioning, like those in the Pacific Northwest of the US, are now turning to district cooling as they face increasingly hotter temperatures.

District cooling can also help cities save water. The system feeds off of undrinkable river water, rather than water of a quality that could be consumed by its inhabitants. And because it's a closed-loop system, the water that comes out of the river is injected right back into the river once it's cooled the air. The water that goes back *is* a slightly higher temperature than it was when it came out, which is why Olivier Racle, head of district heating and cooling at ENGIE, says there must be strict regulations to mandate a temperature ceiling for the water — typically around five degrees above the original temperature.

"This is highly regulated in order to limit as much as possible the impact on the biodiversity of the river," says Racle.

District cooling systems can be utilized year-round, even in the colder months. "Cities are like a human body, they need cooling year-round," says Thornton. "Even if it's cold outside, the inside of the buildings may need cooling."

But the impact will be most dramatic in the summer months, when air conditioning puts the biggest load on the electricity grid. With district cooling, peak demand can be relieved during hot days because chilled water can be produced overnight, during off-peak hours, and stored for use during the day.

As the Olympics fire up, district cooling will play a critical role in keeping participants and spectators cool, putting its impacts in the spotlight as such systems are used in increasing numbers of cities around the world.

Reasons to be Cheerful, 25 July 2024, By: Miranda Lipton

Image: Reasons to be Cheerful - Credit: Hethers / Shutterstock

Upcoming 2024 World Cold Chain Symposium (WCCS) - 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 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.

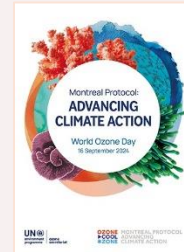
World Cold Chain Symposium



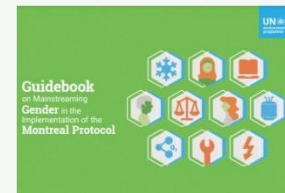
World Ozone Day 2024 theme announced "Montreal Protocol: Advancing Climate Action" - The aim of this year's World Ozone Day is to raise awareness of how far the Montreal Protocol has progressed from ozone layer protection to also become a recognized powerful climate action tool. The Ozone Secretariat 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.

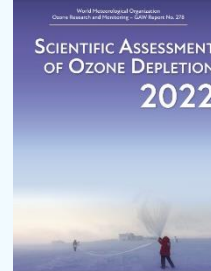
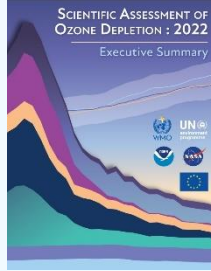
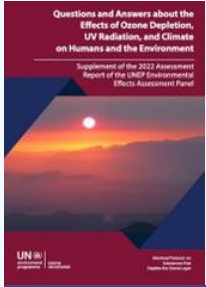
> **Theme in Arabic | Chinese | English | French | Russian | Spanish**

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

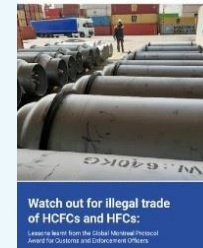


Guidebook on Mainstreaming Gender in the Implementation of the Montreal Protocol - OzonAction, in consultation with UN Women and a gender expert, has developed this **Guidebook on Mainstreaming Gender in the Implementation of the Montreal Protocol** to advance the agenda of gender equality and women's 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

<p>1 exhibits On site post-harvesting and/or precooling applications</p>	<p>6 exhibits Storage of product, e.g. large warehouses / Distribution centers</p>	<p>4 exhibits Storage on board ships, aircraft, and containers</p>
<p>4 exhibits Food processing plants</p>	<p>1 exhibits Transport (large and smaller trucks, smaller containers)</p>	<p>6 exhibits Supermarkets (wholesale markets & Retailers)</p>
<p>1 exhibits Food services (Restaurants, cafes, tourism facilities, etc)</p>	<p>2 exhibits Vaccines and other pharmaceutical products</p>	<p>0 exhibits Game-changing and systemic approaches</p>

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 technicians as part of their implementation of the HPMP in cooperation with various national stakeholders. **Read/ Download the Factsheet >>>**



AFRICA

4. Africa struggles to regulate climate cooling systems industry as demand expands

ABUJA, NIGERIA – As the sun blazes down in Abuja, Ahmed Bukar turns on his home air conditioner to a blast of hot air. The cooling gas that the appliance runs on is leaking from the charging valve on the unit. A technician had recently helped him refill the air conditioner with gas, but he didn't test for possible leaks.



In Abuja and across Nigeria, air conditioners sprout from the walls as the appliance turns from a middle-class luxury into a necessity in an increasingly hot climate. The industry is governed by regulations prohibiting the release of cooling gases into the air - for example, by conducting leak tests after an appliance is fixed. Still, routine release of gases into the atmosphere because of shoddy installations, unsafe disposal at the end of use, or the addition of gas without testing for leaks is a common problem in Nigeria, though unlawful.

The cooling gases, or refrigerants, have hundreds to thousands of times the climate warming potency of carbon dioxide, and the worst of them also harm the ozone layer. Following global agreements that promised to limit these gases from being spewed into

the air, like the Montreal Protocol and Kigali Amendments, Nigeria has enacted regulations guiding the use of these gases. But enforcement is a problem, threatening Nigeria's commitments to slash emissions.

"Those laws, those rules, nobody enforces them," said Abiodun Ajeigbe, a manager for the air-conditioning business at Samsung in West Africa. "I have not seen any enforcement."

'I was not taught'

The weak regulatory system for the cooling industry in Nigeria is evident in the rampant lack of proper training and awareness of environmental harm caused by refrigerants among technicians, according to Ajeigbe. And it is common to see.

After uninstalling an air conditioner for a client who was moving to another neighborhood, Cyprian Braimoh, a technician in Abuja's Karu district, casually frittered the gas from the unit into the air, preparing it to be refilled with fresh gas at the client's new location.

If he followed the country's regulations, he would collect the gas into a canister, preventing or minimizing the gas's environmental harm. Technicians like Braimoh and those who serviced Bukar's appliance without testing for leaks are self-employed and unsupervised. But they often get customers because they offer cheaper services.

"I was not taught that; I only release it into the air," said Braimoh, who originally specialized in electrical wiring of buildings before fixing air conditioners to increase his income options. He received patchy training that did not include the required safety standards for handling refrigerants. And he still did not conduct a leak test after installing the air conditioning unit at his client's new location, which is required by the country's cooling industry regulations.

Installations done by well-trained technicians who follow environmental regulations can be costlier for customers. It's often the case in Nigeria, where hiring the services of companies like Daibau, who later helped Bukar fix his leaks, could result in higher costs.

Manufacturers who offer direct refrigeration and air-conditioning installation services to big commercial customers have tried to self-regulate with safety training and certifications for their technicians, Ajeigbe said.

Potent greenhouse gases

According to industry professionals and public records, the most common air conditioners in Africa still use what's known as R-22 gas. This refrigerant is less harmful to the ozone layer compared to the older, even more damaging coolants called chlorofluorocarbons (CFCs). CFCs have been largely eliminated, thanks to the 1987 Montreal Protocol, which was created to protect the ozone layer, the vital shield in the atmosphere that protects against cancer-causing ultraviolet rays.

But R-22 is 1,810 times more damaging to the climate than carbon dioxide, according to the U.S. Environmental Protection Agency. Just one pound of the coolant is nearly as potent as a ton of carbon dioxide, the most common greenhouse gas, but while CO₂ can stay in the atmosphere for over 200 years, R-22 stays in the atmosphere for around 12 years. R-22 air conditioners also have low energy efficiency and most of the electricity powering them in Africa is from fossil fuels.

Nigeria plans to phase out the R-22 refrigerant by January 1, 2030. But with lax enforcement, meeting the phaseout target is in doubt, Ajeigbe said.

Newer air conditioners that use a family of gases called hydrofluorocarbons (HFCs) don't harm the ozone and consume less electricity. But HFCs are still potent greenhouse gases and account for around 2% of all human-caused warming in the atmosphere.

One HFC, R-410A, which is still a common refrigerant in Europe and the United States, has a warming potential 2,088 times greater than that of carbon dioxide and lasts roughly 30 years in the atmosphere. Air conditioners running on it are the next most common in Africa.

Another HFC, R-32, is 675 times more potent than CO₂, lasts about five years in the atmosphere, and is more energy-efficient. But it is just "marginally" in the African market, Ajeigbe said.

Air conditioners running on HFCs are more expensive, meaning they're less popular than the more polluting ones, according to sellers and technicians in Abuja and Lagos.

A wider problem

It's not just Nigeria. In Ghana, the cooling industry also struggles to get technicians to comply with environmental standards.

According to the Environmental Protection Agency, "poor servicing practices prevalent" in the country are largely driven by consumers, who choose low-trained technicians on price considerations and neglect recommended standards.

In Kenya, the demand for cooling systems is growing as temperatures warm, the population grows and electricity access expands. Air conditioners running on R-22 are still very common in Kenya, but the National Environmental Management Authority told The Associated Press there have not been new imports since 2021, in line with 2020 regulations.

The regulations require technicians handling refrigerants and cooling appliances to obtain a license, but that is not enforced, technicians told AP, leaving space for environmentally unsafe practices.

"You just need to be well-trained and start installations. It's a very simple industry for us who are making a living in it," said Nairobi-based technician Jeremiah Musyoka.

One cooling gas that's energy-efficient and less harmful to the atmosphere, R-290, is slowly gaining traction as an alternative for refrigeration and air conditioning in developed markets like the European Union. The demand for efficient heat pumps is rapidly expanding in the EU, but adoption in Africa remains insignificant because of cost barriers and limited awareness.

Countries like Nigeria, Ghana and Kenya have also identified R-290 as the product that will ultimately replace HFCs, but models using it are not commercially available. And they still have to worry about specialized training for technicians because of R-290's high flammability.

"It worries me there is not enough training and existing regulations are not enforced," Ajeigbe, manager at Samsung, said. But he said enforcing the import ban on banned gases and the appliances that use them would make a difference.

Anastasia Akhigbe, a senior regulatory official at Nigeria's National Environmental Standards and Regulations Agency, added that increasing awareness among appliance importers, technicians and consumers about the environmental impacts of certain refrigerants would also help.

"Enforcement is a known challenge, but we are moving gradually," Akhigbe said.

[Associated Press, 25 July 2024, By: Taiwo Adebayo](#)

Image: Associated Press - People sell air conditioners on the street in Lagos, Nigeria, Monday, July 15, 2024. (AP Photo/Sunday Alamba)

ASIA AND THE PACIFIC

5. Hong Kong intercepts US-bound refrigerant shipment

Hong Kong Customs officers have intercepted a shipment of refrigerant being smuggled from Hong Kong to the USA.

Based on intelligence analysis and risk assessment, Hong Kong customs intercepted the US-bound shipment at the Kwai Chung container terminal on July 9. The shipment in two containers was declared as containing low-valued goods such as carpets and storage bags.

According to the [South China Morning Post](#), the haul totalled 2,560 cylinders of refrigerant and was destined for the port of Long Beach, California.

Photographs indicate that the haul included a range of refrigerants, including R134a R404A, R407A, R407C and R410A, as well as ozone-depleting refrigerant R22, which is banned in the USA and elsewhere.

[CoolingPost, 16 July 2024](#)

Image: CoolingPost



LATIN AMERICA AND CARIBBEAN



Hilda Espinoza Urbina - 1953-2024

Nació el 8 de Noviembre de 1953 en Nicaragua, Licenciada en Bióloga y Ciencias Naturales, con maestría en Legislación, Políticas y Gestión Ambiental. Ella fue designada como Oficial Nacional de Ozono en el año 1998, y en el año 1994 fue designada directora general de Calidad Ambiental.

Fue miembro del Comité Ejecutivo en el año 2014, apoyó de manera consistente la propuesta de enmienda al Protocolo de Montreal para la reducción del consumo y producción de los HFC, hoy en día conocida como la Enmienda de Kigali.

En su gestión a cargo de la Oficina de Ozono y de la Dirección general de Calidad Ambiental se eliminó el consumo de CFC en Nicaragua y el país siempre fue muy proactivo en la eliminación de los HCFC, lo cual hoy en día sigue siendo un gran logro del país y siempre un ejemplo para la región.

Fue profesora de la Universidad Nacional Autónoma de Nicaragua (UNAN), Universidad de Ingeniería (UNI), Universidad Centroamericana (UCA), Universidad Americana (UAM) entre otras.

Siempre fue una guía y apoyo para toda la familia de Ozono en la región de América Latina y del Caribe.

6. En Santiago se debate sobre protección de la capa de ozono y promoción de la eficiencia energética

Organizados por el Programa de las Naciones Unidas para el Medio Ambiente, dos encuentros reúnen a representantes de 15 países de América Latina y de diversas organizaciones internacionales.

Lunes 29 de julio de 2024. La ciudad de Santiago será esta semana escenario de dos eventos trascendentales para la protección de la capa de ozono y la promoción de la eficiencia energética. Organizados por el Programa de las Naciones Unidas para el Medio Ambiente (PNUMA), con el apoyo de la Unidad Ozono del Ministerio del Medio Ambiente de Chile, estos encuentros reúnen a representantes de 15 países de la región, junto con diversas organizaciones internacionales.

La primera actividad, a desarrollarse entre el 29 al 31 de julio, es la Reunión de la Red de Oficiales Nacionales de Ozono para América Latina. Esta actividad anual forma parte de las Redes de Acción por el Ozono, establecidas en 1993 para fortalecer las capacidades de las personas encargadas de implementar el Protocolo de Montreal y su Enmienda de Kigali. Durante estos días, las delegaciones revisarán y discutirán sobre las decisiones que guían la implementación del Protocolo de Montreal, con un enfoque especial en el fortalecimiento de las instituciones y la lucha contra el comercio ilícito de sustancias controladas. Se



abordarán también los progresos en el consumo de dichas sustancias, compartiendo experiencias y estrategias en la implementación de planes de gestión.

"Chile, mediante la labor de la Unidad Ozono, ha dado grandes pasos en el cumplimiento del Protocolo de Montreal y en la implementación de tecnologías amigables con el medio ambiente. Están los casos del uso del CO₂ transcrito en sistemas de refrigeración, la conversión del sector de espumas de poliuretano, y el reciclaje y regeneración de refrigerantes, con ya 4 centros en funcionamiento. Regener, que fue la pionera gracias al Fondo Multilateral, será visitada esta semana, ocasión en que se verá su crecimiento hacia la economía circular", señala el subsecretario de Medio Ambiente, Maximiliano Proaño.

A su vez, Marco Pinzón, coordinador del Programa Acción Ozono para América Latina y el Caribe, destaca que "estamos en un momento clave del Protocolo de Montreal: el congelamiento del consumo de HFCs en 2024 y la reducción del 67.5% del consumo de HCFCs en 2025. Con la aprobación de los Planes de Implementación de la Enmienda de Kigali, estamos aprendiendo de los desafíos que nos presentan estas dos metas del Protocolo. Por ello, es que esta reunión buscamos consolidar las iniciativas que han desarrollado los países y conocer de su experiencia y aprendizajes, así como identificar las necesidades de apoyo que nosotros como agencia implementadora podemos brindar".

La Enmienda de Kigali al Protocolo de Montreal se enfoca en la reducción progresiva del uso de hidrofluorocarbonos (HFC), que son potentes gases de efecto invernadero utilizados principalmente en sistemas de refrigeración y aire acondicionado, para lo cual promueve tecnologías con mayor eficiencia energética que no solo reduzcan el uso de HFC, sino que también mejoren la eficiencia de los equipos, incentivando la creación de políticas que integren la protección de la capa de ozono con la mitigación del cambio climático y la eficiencia energética, buscando generar sinergias entre las acciones de eliminación de HFC y la implementación de medidas de eficiencia energética para maximizar los beneficios ambientales y económicos.

Entre los temas a tratar está la eliminación del consumo de los HCFC junto con la reducción del consumo de los HFC, que son sustancias ampliamente utilizadas en refrigeración y aire acondicionado, a fin de fortalecer las medidas de regulación y control, en línea con el fomento de la introducción de alternativas naturales, la aplicación de las buenas prácticas y las ventajas de contar con personal técnico capacitado y certificado.

Un tema transversal a trabajar es la importancia de integrar la perspectiva de género en todos los proyectos y actividades relacionados con el Protocolo de Montreal, lo que cobra importancia por tratarse del trabajo con una industria mayoritariamente de campo masculino. En esta ocasión se compartirán las experiencias exitosas de Chile, México, Costa Rica y Paraguay.

La reunión incluirá una visita al centro piloto de recuperación, reciclaje y regeneración de gases refrigerantes, Regener Chile, para conocer su funcionamiento y su contribución a la economía circular mediante la recuperación de gases refrigerantes y el reciclaje de equipos de refrigeración y aire acondicionado desechados.

Eficiencia Energética

Por su parte, el 1 y 2 de agosto se celebrará el Taller de Hermanamiento de Oficiales de Ozono y Oficiales de Eficiencia Energética. La iniciativa busca fomentar el uso de tecnologías con bajo o nulo potencial de calentamiento global y mayor eficiencia energética. Durante el taller se trabajará en cómo apoyar la coordinación de políticas y programas nacionales y regionales que incorporen la eficiencia energética en el sector de

refrigeración y aire acondicionado. Actualmente la demanda de climatización representa casi el 20% de la electricidad utilizada en los edificios.

En el evento estará presente la Organización Latinoamericana de Energía (OLADE), que abordará la integración de proyectos y regulaciones que generen sinergias entre las acciones de las Unidades Ozono y las de Eficiencia Energética. Además, se explorarán posibles fuentes de financiamiento para mejorar la eficiencia energética en la reducción o eliminación de refrigerantes HCFC y HFC.

InduAmbiente, 29 de julio de 2024

Image: Ministerio del Medio Ambiente, Nicaragua

7. Por primera vez en Dhuiloé realiza curso de buenas prácticas en refrigeración

El taller gratuito permitió a los 30 participantes conocer el efecto de los refrigerantes en el medio ambiente si están mal utilizados o fuera del sistema.



Destacando el claro aporte en su desempeño laboral, los participantes del curso de Buenas Prácticas en Refrigeración (BPR), finalizaron dos intensas jornadas de aprendizaje donde reforzaron sus conocimientos en el área de refrigeración y aire acondicionado. El taller fue gestionado por la Dirección Medio, Aseo y Ornato (DIMAO) de Castro Municipio ante la Unidad de Ozono, del Ministerio de Medio Ambiente (MMA).

La Ley de Cambio Climático, promulgada el año 2022, impulsa a las comunas a tomar medidas para enfrentar los efectos adversos del calentamiento global. Ante ese llamado, Castro Municipio se comprometió con la iniciativa y organizó el primer taller de ese tipo en la Provincia de Chiloé. Danilo Linz, director de DIMAO, resaltó el éxito de convocatoria, donde participaron más de 30 personas. “Se impartieron conocimientos de buenas prácticas para el diseño, armado e instalación de los sistemas de refrigeración y climatización, considerando que un mal funcionamiento de estos equipos puede liberar a la atmosfera de gases contaminantes como el amoniaco o dióxido de carbono que dañan la capa de ozono. Este curso es una de las tantas acciones que nosotros vamos a seguir desarrollando como dirección”, agregó.

Por su parte, Claudia Álvarez, encargada de cursos BPR del MMA, explicó que “desde el año 2003 a la fecha, y en muchas ciudades del país, la Unidad Ozono del Ministerio del Medio Ambiente realiza cursos gratuitos de Buenas Prácticas en Refrigeración a personas que trabajan en el área de refrigeración y aire acondicionado. Estos cursos están bajo el “Plan de Gestión para la Eliminación de los refrigerantes HCFC en Chile (HPMP-3)” y son con aportes del Fondo Multilateral para el cumplimiento del Protocolo de Montreal y sus Enmiendas”.

El Taller

El relator del curso, Milton Martínez, explicó que los tópicos abordados durante las dos sesiones se enfocaron en los refrigerantes de varios tipos que “son contaminantes del

medio ambiente, dañan la capa de ozono, generan calentamiento global solo si están mal utilizados o fuera del sistema. Entonces, aquí está participando gente que trabaja en el rubro y gente que tiene que hacerse cargo del mantenimiento de instalaciones como, por ejemplo, hospitales”.

Uno de los alumnos, Rodrigo González, funcionario del Hospital de Puerto Montt, valoró la instancia y la calidad de los contenidos. “Somos un rubro totalmente distinto a lo que se maneja directamente con calefacción, pero para nosotros, fue bueno estar destinado a ver el tema de los gases de efecto invernadero. Pero sin embargo, fue súper importante y enriquecedor para conocer conceptos que no conocíamos”.

Una opinión similar tuvo Karina Ríos, prevencionista de riesgos y participante del taller, quien resaltó que “el curso fue súper provechoso porque nos sirve para la medición de la huella de carbono, porque nosotros tenemos que ver el tema de los refrigerantes y de los aires acondicionados que tenemos instalados en el establecimiento”.

Cabe señalar que, tras finalizar el curso, los asistentes reciben una carta de participación y si en las evaluaciones finales obtienen un 70% o más, se le envía un Certificado de Aprobación por parte de la Unidad Ozono del MMA.

El Calbucano – Chile, 26 Julio 2024

Image: El Calbucano

WEST ASIA

8. Overview and outlook of the cooling sector in Jordan

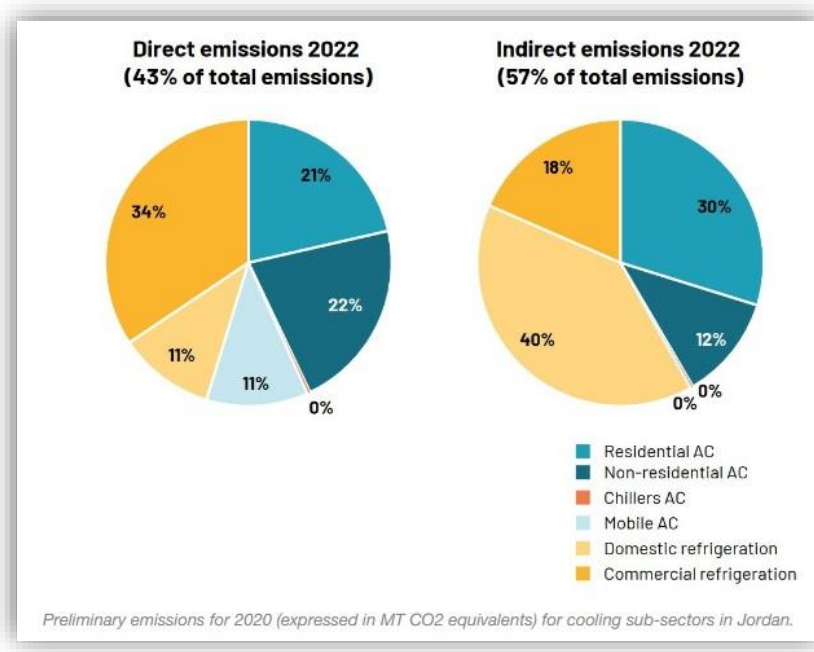
In May 2024, Jordan's Ministry of the Environment published its **National Cooling Strategy (NCS)**, which details the country's cooling sector and sets a framework for the **National Cooling Action Plan (NCAP)** now in development.

In Jordan, increasing average temperatures and heat waves are main drivers of demand for refrigeration.

In residential buildings, around 60 to 80% of new apartments and single-family buildings are equipped with an AC system. In non-residential buildings, the share is around 70-75% for new offices and supermarkets, and around 90-95% for new healthcare and hotel buildings. Demand for air conditioning is expected to increase 3.6-fold by 2025.

Rising population and incomes are driving demand for food, which requires a growing cold chain (cold rooms, commercial refrigeration, and transport refrigeration). Currently, 93 kilograms of food are wasted per person per year in Jordan, and 22% of domestically grown fruits and vegetables are lost along the supply chain. Expanding the cold chain will support the country's efforts to combat food waste and improve food safety.





Together, domestic refrigeration and transport account for 45% of total direct emissions, stationary air conditioning for 43% and mobile air conditioning for only 11%. Direct emissions (from refrigerants leakage and release) for 2022 account for 43% of total emissions (the sum of direct and indirect emissions)

Jordan's National Cooling Strategy (NCS) serves as a blueprint for the transition towards sustainable cooling practices, promoting energy efficiency and the use of non-halogenated, environmentally friendly refrigerants. It provides an overview of strategic areas for policy interventions to reduce emissions from the RAC sector.

The objectives of the NCS are as follows:

1. Set the strategic framework for the development of a National Cooling Action Plan (NCAP) by identifying strategic areas of policy intervention.
2. Raise awareness of sustainable cooling among policymakers, industry, and end-users.
3. Link the NCS and sustainable cooling to existing policies and identify contributions to existing targets.
4. Advance Jordanian development objectives, such as reducing food losses, improving quality of life, creating skilled jobs, and providing opportunities for women and youth in the labour force.
5. Put Jordan on track to phase down HFC use to 80% of the baseline by 2045, in line with the targets set under the Kigali Amendment.
6. Ensure that the cooling sector contributes to a net-zero emissions future.

International Institute of Refrigeration (IIR), 26 June 2024

Image: IIR

NORTH AMERICA

9. U.S. Meets 2024 HFC Phase-Down Target, Cutting Consumption by 40% From 2020

Through administrative consequences, the EPA has retired allotted HFCs in the U.S., equivalent to 13 million metric tons of CO₂e.

The U.S. has met its [2024 HFC phase-down target](#), cutting consumption by 40% from baseline year 2020 through its allowance allocation program that limits U.S. production and importation, according to Cindy Newberg, Director of the Stratosphere Protection Division at the U.S. Environmental Protection Agency (EPA).

With its authority under the American Innovation and Manufacturing (AIM) Act, the EPA currently manages the phasedown of 18 listed HFCs.

- The first stage from 2022–23 reduced HFC consumption by 10%
- The second from 2024–28 by 40%
- The third from 2029–34 will reduce it by 70%
- The fourth from 2034–36 by 80%
- The last in 2036 by 85%

According to Newberg, the EPA outlines and supports the phasedown through allocating HFCs, managing use – including reclaim and reuse – and “facilitating transition” to next-generation substitutes.

To enforce the HFC phase down, Newberg reports the EPA works closely with the U.S. Customs and Borders Protection and applies its authority to leverage administrative consequences.

“Through criminal prosecution, we have prevented over 1 million metric tons of CO₂e from illegally entering the United States,” Newberg said. “However, through our ability to apply administrative consequences to companies expending more than allotted allowances, we have retired or reduced the amount of HFCs that would enter or be produced in the U.S. by 13 million metric tons of CO₂e.”

In a [policy presentation](#) at the [ATMOsphere America Summit 2024](#), Newberg outlined the work of the EPA to enforce the HFC phase down under the AIM Act and discussed the recently implemented and proposed EPA rulings, HFC data availability, and grants for reclaim and destruction. The event, organized by ATMOsphere, was held in Washington, D.C., June 10–11. ATMOsphere is the publisher of NaturalRefrigerants.com.

Enforcing phase down

To prevent the illegal trade seen with the phase down of ozone-depleting substances CFCs, Newberg said that the EPA started before the HFC regulation to shore up points of entry for illegal trade. “Since the implementation of the AIM Act in October 2022, we’ve had eight civil cases and one criminal prosecution with more in development,” she reported.

However, the EPA’s ability to administer allocation consequences under the AIM Act carries a heavier impact. “For example, if a company allotted 30 tons imports 100 tons, we not only

take 70 tons off of their balance for the next year, but we take another 50% off as a penalty,” Newburg explained.

“Enforcement takes time to develop, but administrative consequences are a fairly quick process,” she noted.

To help industry stakeholders and the public analyze the HFC market trends and phase down, the EPA updates production and consumption data annually, posting raw numbers on [its web hub](#). According to Newburg, the data obtained from administrative consequences is updated more frequently.

Rulings

As part of managing the use of HFCs, the EPA released a [final technology transition rule](#) last October setting GWP limits for HFCs based on the subsector, with compliance dates ranging from 2025–28. The ruling sets a GWP limit of 150 for many refrigeration uses and 700 for air-conditioning and heat pumps.

“With the next major step down in 2029, you will notice that the 2025 and 2028 dates are not a coincidence,” Newburg said. However, she stressed that the EPA is technology-neutral. “Our job is to get out of HFCs, not to endorse any particular landing zone, with approved and accepted solutions including hydrocarbons, CO₂ [R744], ammonia [R717] and various HFO refrigerant blends.”

When asked about regulating [HFOs that degrade into forever chemicals](#), including trifluoroacetic acid (TFA), Newburg explained that the EPA follows policies outlined by the Montreal Protocol and works closely with the National Oceanic and Atmospheric Administration (NOAA) to monitor the chemicals in U.S. waters. “We are not ignoring the issue,” she said. “We work closely with our sister offices to stay abreast of what is happening.”

Newburg also outlined the proposed Emissions Reduction and Reclamation (ER&R) rule, which stems from the AIM Act. It directs the EPA to maximize reclamation and minimize releases of HFCs. The proposed rule includes provisions requiring the installation of automatic leak detectors, repairs to equipment leaks and using reclaimed HFC refrigerants in certain new and existing air conditioners, heat pumps and refrigeration equipment.

“The interagency review process of the robust ER&R proposal – headed by the Office of Management and Budget – should be finalized later this year,” she reported.

Destruction/reclaim grants

Under the Inflation Reduction Act, the EPA obtained \$15 million (€14 million) in competitive grants to promote innovative technologies for the reclamation and destruction of HFCs.

“On May 28, we announced five recipients for these grants,” Newburg said, adding that individual awards ranged from \$1.5–3.8 million (€1.4–3.5 million). Of the five grants, four apply to destruction projects and one to reclaim.

The selected applicants included the University of Washington, Texas A&M University, Drexel University, University of California Riverside and the Air-Conditioning, Heating and Refrigeration Technology Institute.

The destruction proposals included energy-efficient conversion of HFCs into source chemicals, application of alkaline hydrolysis and a portable HFC destruction system. The reclaim proposal seeks to improve the separability of mixed reclaim refrigerants to reduce time and costs.

“Under the program, we rarely do grants, so this is super exciting for us,” Newburg said, indicating the EPA received substantially more destruction proposals than for reclaim.

Natural Refrigerants, 3 July 2024, By: Jae O. Haroldsen

Image: Natural refrigerants

EUROPE & CENTRAL ASIA

10. District Heating and Cooling - Solution Booklet

The [Solution Booklet on DHC](#), to which the RE H&C Focus Group members under the Smart Cities Marketplace contributed, has been published. This initiative is part of the Heating and Cooling Focus Group, established through a collaboration between the RHC-ETIP and the Smart Cities Marketplace initiative.



Half of the energy consumed in Europe is used for heating and cooling, and 75% of this energy is still coming from fossil fuels. Additionally, much of this energy is wasted due to inefficiencies in the heating and cooling systems. State-of-the-art, sustainable district heating and cooling systems offer a unique opportunity to make significant contributions to decarbonise EU cities through the efficient distribution of heat and cold from renewable energy sources.

District heating networks (initially centralised heat production, delivered through distribution networks) have been present in cities for more than one hundred years, evolving from the early high-temperature heat distribution (steam) networks towards more efficient lower temperature schemes that reduce heat distribution losses and enable the use of renewable energy sources, as well as the integration with the electricity grid. Also, current intelligent management systems allow for increased operational benefits and new paradigms such as decentralised networks.

District heating and cooling networks constitute a proven solution for large scale thermal energy distribution that has been deployed in a growing number of cities worldwide, using a diversity of technologies that can enable synergies between the production and distribution of heat, cold, domestic hot water and electricity.

Renewable Heating & Cooling, 11 July 2024

Image: RH&C

11. Denunciadas cuatro personas por operar en vehículos con gases que afectan a la capa de ozono

Los envases han sido incautados para su posterior destrucción

El Servicio de la Protección de la Naturaleza de Segorbe de la Guardia Civil ha realizado diferentes inspecciones en talleres de vehículos y otras empresas de las localidades de Soneja, Segorbe, Altura y Viver que operan con gases que afectan a la capa de ozono, así como de efecto invernadero (GEI), y ha procedido a la denuncia de cuatro personas y al decomiso de doce envases que contienen GLP.



En esta ocasión la Patrulla del Seprona de Segorbe, desarrollando una operación encaminada al control de sustancias que destruyen la capa de ozono y gases de efecto invernadero, ha procedido a la inspección de diferentes talleres de automóviles y empresas que operan con este tipo de gases.

Durante las inspecciones se ha procedido a la denuncia de cuatro personas por falta de acreditación para la manipulación de gases de refrigeración/climatización, uso de gases no autorizados, manipulación de sistemas de refrigeración sin recuperación previa de los gases. Además, se ha procedido al decomiso de doce envases que contienen GLP, los cuales eran utilizados en el sistema de climatización de vehículos como sustitutos de los gases HFC regulados y homologados para ello.

Los envases incautados están formulados con derivados del petróleo (GLP) como isobutano y propano, lo que determina que este tipo de aerosoles estén caracterizados como "extremadamente inflamables", ocasionando un potencial riesgo de incendio del vehículo en el que se use, hecho que motiva su decomiso.

Las denuncias son remitidas a la Conselleria de Innovación, Industria, Comercio y Turismo por infringir presuntamente el Real Decreto 552/2019, por el que se aprueba el Reglamento de seguridad para instalaciones frigoríficas y sus instrucciones técnicas complementarias en concordancia con la Ley 21/1992, de Industria.

Actualidad Castellón, 25 de julio de 2024

Image: Actualidad Castellón

12. Poland intercepts R134a in car LPG tanks

Customs officers in Terespol claim to have prevented seven attempts in the last month to smuggle refrigerant R134a in the LPG tanks of motor vehicles.

Officers seized cylinders with a total capacity of 1,450 litres.



In most cases, the vehicle drivers claimed that they did not know what was in the tanks. According to their explanations, they were only supposed to drive their cars across the

border and leave them for a few hours at a designated location in Biła Podlaska, Terespol or Kafuszyn.

Terespol is a border town in eastern Poland on the border with Belarus.

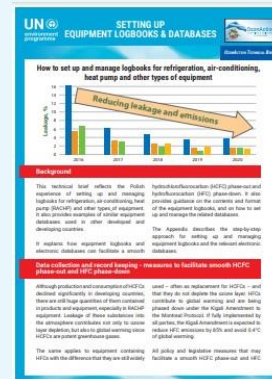
This is not the first time Polish customs have encountered this method of smuggling, similar incidents being reported as far back as 2018.

In all these most recent cases, fiscal criminal proceedings were initiated and are being conducted by the Lublin Customs and Fiscal Office in Biła Podlaska.

CoolingPost, 24 July 2024

Image: CoolingPost

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](#)**



FEATURED

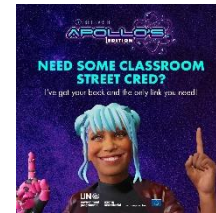


Overview for the meetings of the ozone treaties - Click [here](#) for upcoming and past Montreal Protocol Meetings dates and venues.

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.



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.



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 >>>](#)



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. [...]



- **Miruzza 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 Benin**

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 Gard web-based tool

- The Gas Gard 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)

Importer ID	Monthly ODP Allowed	Monthly Licence Allowed	Quota	Balance	Year	Year
1	100	100	100	0	2015	2015
2	200	200	200	0	2015	2015
3	300	300	300	0	2015	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 it all the official facts and figures in one place. Conversion formulas need to be applied to calculate CO₂-eq values from both GWP and metric tonne values. This free app from OzonAction is a practical tool for Ozone Officers to help demystify some of this process and put frequently needed information at their fingertips.



What's new in the app:

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

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



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



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



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

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

Updated OzonAction "WhatGas?" Mobile App

The OzonAction ‘WhatGas?’ application is an information and identification tool for refrigerant 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**

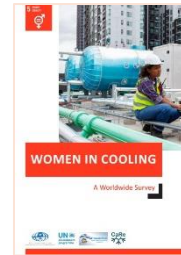


As part of IIR and UNEP OzonAction’s partnership, a set of Cold Chain Technology Briefs was released over the past few years, which includes in-depth summaries about the cold chain in different key sectors. They include descriptions of technology, refrigerant options and trends and conclude with prospects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

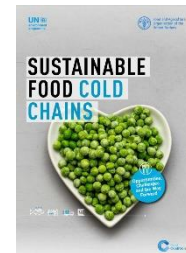


PUBLICATIONS

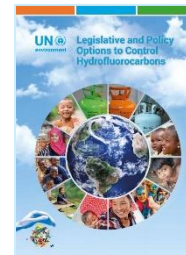
Results of a Worldwide Survey about Women in Cooling Released by IIR and UNEP OzonAction - Refrigeration, Air-Conditioning, and Heat-pumps (RACHP) are crucial for our health, nutrition, comfort, and well-being. It is one of the sectors that crosscuts many of the UN sustainable development goals and can 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.



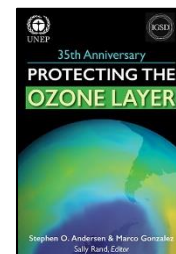
Legislative and Policy Options to Control Hydrofluorocarbons - In order to follow and facilitate the HFC phase-down schedules contained in the Kigali Amendment, the Parties, including both developed and developing countries, will have to implement certain measures. This booklet contains a recommended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



Navigating New Horizons A global foresight report on planetary health and human wellbeing

To help navigate current and future uncertainty and disruptive change, while effectively delivering on its mandate, UNEP has been implementing an institutionalized approach to strategic foresight and horizon scanning with the view to developing an anticipatory and future-oriented culture. This mirrors the growing interest and demand for foresight that is also reinforced by the United Nations reform agenda and the Secretary-General's report on 'Our Common Agenda', which calls for all UN agencies, as well as all UN member states, to engage foresight practices more deeply and apply the derived insights to address global systemic risks. This process has culminated in the development of the present report.



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