Volume XXIV | 15 February 2024

In this issue:

GLOBAL

1. Kigali Amendment latest ratifications

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

Guatemala, 11 January 2024
Belize, 3 October 2023

At the Twenty-Eighth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, held in Kigali from 10 to 15 October 2016, the Parties adopted, in accordance with the procedure laid down in paragraph 4 of article 9 of the 1985 Vienna

Convention for the Protection of the Ozone Layer, a further amendment to the Montreal Protocol as set out in Annex I to the report of the Twenty-Eighth Meeting of the Parties (Decision XXVIII/1).

Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, Status of Ratification 15 October 2016 to **date**.

United Nations Treaty Collection
Image: UN Treaty Collection website

2. Reminder: Reporting of cases of illegal trade in controlled substances and illegal production and consumption


Ozone Secretariat

UN environment programme

Ref: Oz.Sec/Decisions XIV/7, XXXI/3, XXXIV/8 and XXXV/12 16 February 2024

Reminder: Cases of illegal trade in controlled substances and prevention of illegal production, import, export and consumption

Letter from Megumi Seki Nakamura, Executive Secretary, Ozone Secretariat, with regard to decisions XIV/7, XXXI/3, XXXIV/8 and XXXV/12 on cases of illegal trade in controlled substances and prevention of illegal production and consumption.

[...] Dear Sir/Madam,

I refer to paragraph 1 of decision XXXV/12 adopted by the Thirty-Fifth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer in 2023. The decision encourages parties to facilitate the exchange of information on best practices to prevent illegal trade of controlled substances and to inform the Secretariat of practices used by entities attempting unauthorized imports of controlled substances that may include the mislabeling of containers of controlled substances or misreporting of controlled substances on customs declarations. This, together with other actionable parts of the decisions taken at the meeting, was communicated to all parties in a letter dated 24 January 2024.

Paragraph 2 of decision XXXV/12 requests the Secretariat to provide, before the forty-sixth meeting of the Open-ended Working Group (OEWG46) and on an annual basis thereafter, a compilation of information provided by parties pursuant to paragraph 1 as well as and decision XXXIV/8 (see below).

In addition, the parties to the Montreal Protocol had adopted other related decisions concerning illegal trade in controlled substances, namely:

• Decision XIV/7, by which parties highlighted the importance of actions aimed at improving the monitoring of trade in ozone-depleting substances and preventing illegal trade in those substances for their timely and smooth phase-out. The Secretariat is also requested to collect any information on illegal trade received from the Parties and to disseminate it to all Parties.

• Paragraph 5 of decision XXXI/3, by which parties were encouraged to take action to discover and prevent the illegal production, import, export, and consumption of controlled substances and to report fully proved cases of illegal trade in such substances to the Secretariat. In addition, such information could include how such cases have been addressed and, to the best knowledge of parties, what were the causes, in order to facilitate an exchange of information among parties.

• Paragraph 3 of decision XXXIV/8, by which parties were encouraged to facilitate the exchange of information to prevent the illegal trade of controlled substances by reporting to the Secretariat fully proved cases of illegal trade and to the extent that parties are able to do so, providing additional information about illegal trade situations.

Consequently, I encourage your Government to report any available information related to these decisions to the Secretariat, including cases of illegal trade that are not fully proven. You might wish to do so by filling out the attached reporting forms (Annexes I and/or II) and sending the form(s) by email to Liazzat Rabbiosi (rabbiosi@un.org, copied to MEA-ozoneinfo@un.org). You can also send

us any other pertinent information in relation to illegal trade practices and situations in your country, as applicable.

We would appreciate receiving this information by 22 March 2024 so that we can include it in the compilation of information related to illegal trade to be provided before OEWG46 in accordance with paragraph 2 of decision XXXV/12.

All the reports received by the Secretariat pursuant to these decisions relevant to illegal trade have been made available on the online database of illegal trade cases at this **link**.

We look forward to continuing our collaboration with your Government to implement the decisions of the parties to the Montreal Protocol. [...]

English | **French**

Ozone Secretariat, 16 February 2024

Image: Ozone Secretariat

3. A method for calculating offsets to ozone depletion and climate impacts of ozone-depleting substances: Technical note Abstract


Atmospheric Chemistry and Physics

Technical note: A method for calculating offsets to ozone depletion and climate impacts of ozone-depleting substances

By phasing out production and consumption of most ozone-depleting substances (ODSs), the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol) has avoided consequences of increased ultraviolet (UV) radiation and will restore stratospheric ozone to pre-1980 conditions by mid-century, assuming compliance with the phaseout.

However, several studies have documented an unexpected increase in emissions and suggested unreported production of trichlorofluoromethane (CFC-11) and potentially other ODSs after 2012 despite production phaseouts under the Montreal Protocol.

Furthermore, because most ODSs are powerful greenhouse gases (GHGs), there are significant climate protection benefits in collecting and destroying the substantial quantities of historically allowed production of chemicals under the Montreal Protocol that are contained in existing equipment and products and referred to as ODS “banks”.

This technical note presents a framework for considering offsets to ozone depletion, climate forcing, and other environmental impacts arising from occurrences of unexpected emissions and unreported production of Montreal Protocol controlled substances, as recently experienced and likely to be experienced again. We also show how this methodology could be applied to the destruction of banks of controlled ODSs and GHGs or to halon or other production allowed under a Montreal Protocol Essential Use Exemption or Critical Use Exemption.

Further, we roughly estimate the magnitude of offset each type of action could provide for ozone depletion, climate, and other environmental impacts that Montreal Protocol Parties agree warrant remedial action.

Authors: Gabrielle B. Dreyfus, Stephen A. Montzka, Stephen O. Andersen, and Richard Ferris

Atmospheric Chemistry and Physics- journal of the European Geosciences Union (EGU), 15 February 2024

Image: EGU website

4. Refrigeración sostenible sin halocarbonos o cómo ayudar a mil millones de personas a adaptarse al calor que viene

Tras intensos debates y difíciles consensos en la pasada COP28, se han alcanzado avances considerables en el caso concreto del desarrollo de una refrigeración sostenible. La refrigeración no solo es necesaria para la vida de numerosos hogares, sino que es fundamental para sectores como la alimentación, la logística, la tecnología digital o el turismo.

De acuerdo con el Programa para el Medio Ambiente de Naciones Unidas (UNEP), un enfoque sostenible para la refrigeración es de vital importancia para abordar el cambio climático, tanto para la reducción de los gases de efecto invernadero (GEI) como para la adaptación al clima.

Con el calentamiento global y las temperaturas extremas, aumentará la necesidad de refrigeración. UNEP estima que satisfacer las necesidades futuras de refrigeración se puede lograr de forma sostenible: reduciendo sus emisiones de gases de efecto invernadero en 2050 en al menos un 60%, aliviando la presión sobre las redes energéticas, ayudando a más de mil millones de personas a adaptarse al cambio climático, y generando ahorros para los usuarios finales de la energía eléctrica de un billón de dólares en 2050.

La presidencia de la COP28 destacó la refrigeración sostenible como una cuestión de máxima relevancia planteando algunas recomendaciones clave:

- Desarrollar sistemas con refrigerantes naturales que sean competitivos en eficiencia y coste en comparación con los sistemas basados en los halocarbonos.
- Apoyar las restricciones al uso de refrigerantes a base de halocarbonos con un potencial de calentamiento global superior a 150 y la prohibición de fluidos que se ajusten a la definición de sustancias perfluoroalquilas y polifluoroalquilas (PFAS).
- Apoyar el desarrollo de estándares que permitan impuestos más altos para los sistemas que utilicen halocarbonos.
- Hacer hincapié en la búsqueda de soluciones para bombas de calor y sistemas de refrigeración con fluidos naturales que puedan sustituir el uso de energías fósiles para la calefacción residencial.
- Priorizar el desarrollo de bombas de calor de alta temperatura utilizando fluidos naturales para contribuir a la descarbonización de las necesidades de la industria.

La capa de ozono y el cambio climático

En los 80, los clorofluorocarbonos (CFCs) se utilizaron en productos como aerosoles, frigoríficos y aparatos de aire acondicionado hasta que el Protocolo de Montreal, que entró en vigor en enero de 1989, prohibió su uso debido a sus efectos destructores de la capa de ozono.

Los CFCs fueron reemplazados por otra clase de halocarbonos, los hidrofluorocarbonos (HFCs), que, si bien no destruyen la capa de ozono, son potentes gases de efecto invernadero. Se resuelve un problema, pero se crea otro.

La Enmienda de Kigali al Protocolo de Montreal, vigente desde enero de 2019, tiene como objetivo reducir gradualmente el consumo de HFCs. La transición a alternativas respetuosas con el ozono y el clima puede ayudar a evitar un aumento de temperatura de más de medio grado Celsius para finales de siglo.

Sin embargo, algunas alternativas de halocarbonos de bajo poder calorífico propuestas frente a los HFCs, incluidas en la categoría de PFAS, pueden acumularse en la naturaleza, lo que plantea riesgos potenciales para la salud.

Además, la refrigeración consume mucha energía y la sostenibilidad se ve afectada por la procedencia de esa energía. El uso de energía renovable para la refrigeración es respetuoso con el medioambiente, pero en zonas que dependen de combustibles fósiles para la generación de

energía, la refrigeración eléctrica puede producir importantes emisiones indirectas. Por lo tanto, es fundamental que todos los sistemas maximicen la eficiencia energética.

Los nuevos fluidos naturales

En la actualidad existe una amplia investigación sobre la refrigeración sostenible centrada en los fluidos que se encuentran de forma natural en la biosfera. Por ejemplo, refrigerantes como el dióxido de carbono (CO_2), el amoníaco (NH_3), los hidrocarburos (HCs) y el agua (H_2O).

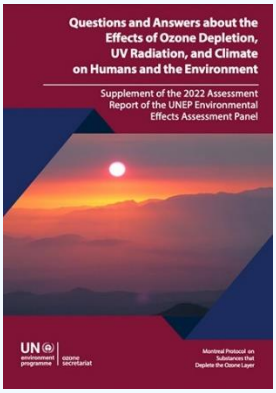
El uso de estos fluidos proporciona una solución climáticamente segura a largo plazo. Muchos países, especialmente los de bajos ingresos, pueden hacer una transición directa de los HFCs a alternativas sostenibles sin tener que recurrir a sustancias que podrían limitarse pronto.

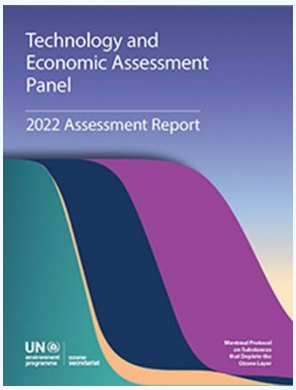
Además de sustituir potentes gases de efecto invernadero, el CO_2 como refrigerante también puede contribuir al ahorro de energía. Para los supermercados, integrar las necesidades de refrigeración, congelación, calefacción y aire acondicionado en un mismo sistema basado en CO_2 ha demostrado una reducción de alrededor del 35% en el consumo de energía. Se estima que hay más de 35.000 sistemas de este tipo instalados en todo el mundo, principalmente en Europa. En el norte de Europa, la mayoría de los supermercados han pasado a utilizar CO_2 como refrigerante.

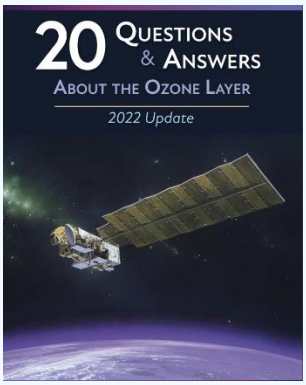
Los sistemas que utilizan otros fluidos naturales, como el amoníaco, los hidrocarburos o el agua, han resultado ser muy eficientes energéticamente, aunque los desafíos para el empleo del NH_3 y los HCs incluyen la toxicidad y la inflamabilidad de estos fluidos. Su uso adecuado y la adaptación de las normas para una operación e instalación seguras serán cruciales.

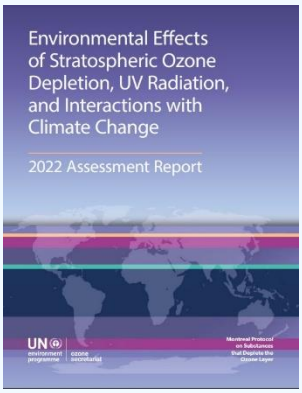
Banco Bilbao Vizcaya Argentaria (BBVA), 6 February 2024

Image: Banco Bilbao Vizcaya Argentaria BBVA









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

AFRICA

5. Session de formation des techniciens frigoristes sur les bonnes pratiques de manipulations des fluides frigorigènes fluorés



Dans le cadre de renforcement des capacités techniques des techniciens opérant dans le secteur de la réfrigération/climatisation (RAC), une session de formation est clôturée aujourd'hui 10 février 2024. Cette session s'est déroulée à Tunis du 8 au 10 février 2024.
Onze (11) techniciens frigoristes représentants plusieurs entreprises RAC (MED CLIM, SMC YORK, TELMAGH, etc.) ont participé à cette session. Les modules de formation sont :
1/ Impact des fluides frigorigènes HCFC & HFC sur l'environnement (couche d'ozone et changement climatique), et l'implication de l'amendement de Kigali pour les fluides frigorigènes de type HFC ;
2/ Bonnes pratiques de manipulation des fluides frigorigènes :
- Récupération/tirage au vide et charge de fluides frigorigènes,
- Brasage sous flux d'azote (N2),
- Contrôle des paramètres thermodynamiques,
- Mesures des surchauffes et sous refroidissement,
- Contrôle électronique des fuites,
- Identification et analyse des fluides frigorigènes.

Cette session de formation a été animée par les experts formateurs de l'Association Tunisienne de Réfrigération et de Climatisation (ATRC).

End of a training session for RAC technicians on good handling practices for fluorinated refrigerants: Tunis, from 8 to 10 February 2024. As part of building the technical capacities of RAC technicians operating in the refrigeration / air conditioning (RAC) sector (from MED CLIM, SMC YORK, TELMAGH and other RAC enterprises).
Eleven (11) RAC technicians' representatives of RAC enterprises took part in this training session. The training modules are:
1 / Impact of HCFC & HFC refrigerants on the environment, and the implication of the Kigali amendment for HFC refrigerants,
2 / Good practices for handling fluorinated refrigerants:
- Recovery / evacuation and charging of refrigerants,
- Brazing under nitrogen flow (N2),
- Control of thermodynamic parameters,
- Measurements of overheating and under cooling,
- Electronic leakage control and detection,
- Identification and analysis of refrigerants.

This training session was animated by the Trainers experts of the Tunisian Refrigeration and A/C Association (ATRC).

National Ozone Unit - Tunisia | Facebook | 10 February 2024
Images: NOU Tunisia/Facebook

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 >>> UN Environment Programme, OzonAction, July 2023**

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 >>> UN Environment Programme, OzonAction, July 2023

ASIA AND THE PACIFIC

6. China revised the Regulations on Administration of Ozone-depleting Substances

On 29 December 2023, the Government of China published the *Decision of the State Council on Amending the Regulations on Administration of Ozone-depleting Substances*, which is a revision to the Regulations on Administration of Ozone-depleting Substances issued in 2010. The new Regulations will come into effect on 1 March 2024 and will further strengthen the management of controlled substances of the Montreal Protocol in the following three aspects:


China revised the regulations on administration of ozone-depleting substances

On 29 December 2023, the Government of China published the Decision of the State Council on Amending the Regulations on Administration of Ozone-depleting Substances, which is a revision to the Regulations on Administration of Ozone-depleting Substances issued in 2010. The new Regulations will come into effect on **1 March 2024** and will further strengthen the management of controlled substances of the Montreal Protocol in the following three aspects:

Firstly, the revision **will implement new requirements of the Kigali Amendment. Hydrofluorocarbons (HFCs)** are incorporated into the scope of control of the new Regulations. In order to control emission of by-produced HFC-23 as required by the Kigali Amendment, it is explicitly stipulated that enterprises should dispose by-produced controlled substances in an environmentally sound way and should not discharge them directly.

Secondly, the revision **will strengthen management measures for controlled substances**. The new Regulations introduce innovative monitoring measures by making full use of information technologies. Those enterprises with large production or consumption of controlled substances or large amounts of by-production of controlled substances should install automatic monitoring equipment to ensure the validity and accuracy of the monitoring data. The new Regulations will further intensify the monitoring of phased out controlled substances to ensure sustainable compliance. In addition, requirements on emission management are strengthened. Producers and consumers of controlled substances should take necessary measures to prevent or reduce leakage and emissions of controlled substances.

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Thirdly, the revision will reinforce penalties on violations substantially. Fines for violations will increase, meanwhile the suspension of production and the suspension of businesses for rectification are included as new punishment measures. Enterprises that receive administrative penalties for violations will have their misconduct included in their credit records. These punishment measures will effectively strengthen the deterrent effect of the law.

Protecting the ozone layer and tackling climate change are common challenges facing the world. For the past decades, Montreal Protocol has made significant contributions to jointly addressing ozone layer depletion and climate change and is recognized as an example of multilateral environmental governance. As a responsible developing country, the Chinese government attached great importance to implementation of the Montreal Protocol and overcame various difficulties such as industrial transformation, shortage of funds and re-employment of employees. China has phased out about 628,000 tons of ODS production and consumption in total, accounting for over a half of the tonnage for developing countries. Research shows that in the 30 years between 1991 to 2020, China avoided about 26 billion tons of carbon dioxide equivalent greenhouse gas emissions in the process of phasing out ODS.

This is equivalent to the greenhouse gas emissions of over 60 billion barrels of crude oil or over 11 trillion liters of gasoline consumed.

The **regulation** is available in Chinese Language.

Contact: **Elisa Giyeon Rim**, Programme Management Officer, UNEP OzonAction CAP ROAP

7. Permit required for products containing ozone depleting substances (Vanuatu)

The Department of Environmental Protection and Conservation (DoEPC) has started off the year with a reminder to anyone wanting to import any products containing substances that can harm the earth's ozone layer to have a permit.

Refrigerants, dry-cleaning machines, fire extinguishers, automobile and truck air conditioning units, marine and transportation refrigeration, dehumidifiers, chillers, water coolers, ice machines, display cabinets, and heat pump units used at homes and businesses emit pollutants and contribute to ozone layer's depletion.

Vanuatu has been regulating the importation of the hazardous substances two years ago under the Ozone Layer Protection (OLP) Act that was gazetted on February 25, 2022 along with the OLP Regulation Order No.20 of 2020.

Minister of Environment, Ralph Regenvanu, explained that the regulation of Ozone Depleting Substances (ODS) is in line with Vanuatu's obligation under the Montreal Protocol, an international environment agreement that seeks to reduce the concentration of ODS in the atmosphere.

The Montreal Protocol sets binding progressive phase out obligations for developed and developing countries for all the major ozone depleting substances, including chlorofluorocarbons (CFCs), halons and less damaging transitional chemicals such as hydrochlorofluorocarbons (HCFCs).

Minister Regenvanu explained that an import permit, that is usually done online through any Customs Brokers via the Single Windows system, is required for each shipment of a controlled substance, in particular HCFCs such as R-22 also known as Chlorodifluoromethane and HFCs and their mixtures as well as manufactured products containing HFCs.

He said the importation of R600a, and R290, which are environment friendly gasses, are encouraged by DoEPC, but controlled substance such as CFCs remained prohibited.

Developers and importers are reminded that bringing the controlled substances without a permit can result in fines. One of the offences under the OLP Act is punishable by imprisonment or a fine not exceeding VT2.5 million for an individual and not exceeding VT5 million for a corporate body.

Some companies in Port Vila and Luganville were issued fines for failure to comply with the Act last year.

Vanuatu Daily Post, 23 January 2024, By Anita Roberts

Image: Vanuatu Daily Post | Minister Regenvanu and officials during the recent press conference

LATIN AMERICA AND CARIBBEAN

8. Grenada's new 'Green Cooling' label identifies cooling appliances using natural refrigerants

The Green Cooling Initiative (GCI) has announced the launch of a new version of Grenada's Green Cooling label, which is designed to make it easier for consumers and distributors to identify cooling appliances that use natural refrigerants.

"With this new label, it is now easy to identify green cooling appliances, which use natural refrigerants such as propane (R290) in ACs and isobutane (R600a) in refrigerators," said the GCI. "Notably, these refrigerants are not only more environmentally friendly but offer additional advantages such as higher energy efficiency and lower refrigerant charge."

The GCI is an umbrella of projects funded by the German government, the French government the European Union and other donors supporting worldwide green cooling.

Grenada's National Ozone Unit (NOU) launched the new version of the natural refrigerant label in collaboration with Cool Contributions Fighting Climate Change II (C4 II), a GIZ program assisting policymakers in Grenada, the Philippines and Costa Rica with developing and implementing more ambitious cooling policies. The German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection funds C4 II as part of the International Climate Initiative.

The country's first natural refrigerant label, found only on refrigerators, was piloted in May 2018 by two stores in Saint George's, the Caribbean island nation's capital. The label, a magnetic sticker, was provided by the NOU and affixed to refrigerators in the two stores that used R600a.

NOU Officer Leslie Smith and C4 II project team members conducted training on the various labels found on cooling appliances and how to calculate and interpret metrics such as energy efficiency, energy costs and global warming impact.

Appliance sales representatives from Modern Electrical Solutions, Cooling Tech, Comfort Air and Courts Grenada participated in the training, which included a practical exercise measuring energy use and related cost savings of an isobutane-based refrigerator.

Robert Medford, Director of the Grenada Bureau of Standards, also participated in the training, emphasizing the relevance of cooling appliance labeling standards and explaining how standards ensure compliance with the country's environmental commitments and deliver "optimal" appliances to end users.

Trained sales representatives are better equipped to explain the label and perform environmental and energy calculations to show end users the environmental impact and energy costs before they purchase appliances, according to the GCI.

The country anticipates that the relaunched natural refrigeration label and the sales representative training will stimulate green cooling appliance sales, helping to realize its vision of becoming the "first HFC-free island."

In a presentation at the **ATMOsphere (ATMO) Latin America (LATAM) Summit 2023**, Smith outlined **Grenada's Montreal Protocol Bill**, which came into effect in 2024 and restricts the importation and exportation of residential refrigeration appliances with a refrigerant GWP of 150 or greater and air-conditioning units with a refrigerant GWP of 750 or greater. ATMO LATAM was held in Mexico City and was organized by ATMOsphere, publisher of Hydrocarbons21.com.

"[We] seek to make Grenada the first HFC-free or natural refrigerant island in the world," said Smith.

"Fiscal incentives for any refrigeration or AC appliance operating with renewable energy and meeting the minimum energy performance standard or with a GWP of less than 150 for refrigerators or less than 750 for ACs are subject to or entitled to 100% concessions on all customs, duties and taxes," he added.

Along with the financial incentives, Grenada has established a regional hydrocarbon training center with a certification scheme that Smith said has enabled more than 80% of the country's technicians to be trained in natural refrigerants.

Grenada has a population of 110,000 between its mainland and two sister islands, which together cover 133mi^2 (344km^2). The country is situated in the southeast Caribbean Sea just north of Trinidad and Tobago.

"We are a small, low-volume consuming country, but we carry a big punch," said Smith.

Hudrocarbons21, 14 February 2024, By Jae O. Haroldsen
Image: Hydrocarbons21 website | Leslie Smith, center, conducting training. Photo credit: GCI.

NORTH AMERICA

9. EPA enforcement prevents multiple illegal imports of super climate pollutant

Cases Part of EPA's National Initiative to Enforce U.S. Hydrofluorocarbon Phasedown to Mitigate Climate Change

WASHINGTON – Today, EPA is announcing a settlement with Open Mountain Energy, LLC, a geothermal power generation company, for the attempted illegal import of hydrofluorocarbons (HFCs), which is the latest in a series of enforcement actions EPA has taken recently against importers of HFCs. HFCs are a super climate pollutant with global warming potentials hundreds to thousands of times higher than CO_2. For this reason, pursuant to the Montreal Protocol, HFCs will be almost fully phased out by developed countries by 2036. EPA has made it a national enforcement and compliance priority to address the illegal import of HFCs under the current phasedown and has settled five cases over the last several months with companies regarding HFC imports.

"Climate change continues to accelerate, which makes addressing super climate pollutants like HFCs a key part of EPA's strategy to limit global climate change to 1.5 degrees Celsius," said Assistant Administrator David M. Uhlmann for EPA's Office of Enforcement and Compliance Assurance. "Our HFC enforcement efforts send a clear message to HFC importers that the federal government is vigilantly monitoring imports of HFCs and will hold illegal actors accountable."

In EPA's enforcement case with Open Mountain Energy, LLC, EPA prevented 44,092 pounds, or approximately 20 metric tons, of illegal hydrofluorocarbons (HFCs) from being imported into the U.S. If released into the atmosphere, these HFCs are the equivalent of 20,600 metric tons of CO_2, or the same amount of CO_2 produced from powering 4,008 homes with electricity produced from coal for a year. Under the terms of the settlement, the company will pay a penalty of $41,566.

In a second case, EPA took enforcement action through its HFC Expedited Settlement Agreement Pilot Program. Earlier last month, EPA finalized its first Expedited Settlement Agreement with Sigma Air, LLC, for the attempted illegal import of 3,736 pounds of R-410A, a blend of different HFCs. The company will remain on EPA's watch list for repeat offenses. This pilot program can be used to quickly address smaller quantities of illegally imported HFCs, with an appropriate penalty to assure would be violators are adequately punished and deterred.

Achieving the goals of the HFC phasedown also requires accurate data. In addition to preventing illegal imports of HFCs, EPA is also using its enforcement authorities to target HFC importers that failed to accurately report their import quantities to EPA. Three recent settlements show how EPA enforcement actions are helping ensure accurate data, essential for setting sound climate change policy, such as setting baseline and targets for the HFC Phasedown rule. The combined penalties paid in these cases against Combs Investment Property, LP; Waysmos USA, Inc.; and Nature Gas Import and Export Inc., exceed $500,000. EPA will continue to scrutinize the reporting data to ensure the Agency and the public have the best data available to make informed decisions on fighting climate change.

The Kigali Amendment to the Montreal Protocol, adopted by the United Nations in 2016, requires the global phasedown of HFCs by 2036 for the United States and other developed countries.

In response to the Kigali Amendment, Congress passed the bipartisan American Innovation and Manufacturing Act of 2020 (AIM Act), requiring the United States to phase down HFC production and consumption by 85% by 2036. Over the past year, EPA and CBP denied entry to approximately 25 shipments of illegal HFCs. Under EPA's HFC phasedown regulations, importers must expend allowances to import HFCs. Illegal imports of HFCs undermine the phasedown, disadvantage companies who follow the rules, and contribute to global warming.

More information related to HFCs, greenhouse gases, the AIM Act, and the climate change National Enforcement and Compliance Initiative are available on EPA's website:

- **Enforcement of the Greenhouse Gas Reporting Program: HFC Importers**
- **Enforcement of the American Innovation and Manufacturing Act of 2020**
- Fiscal Years 2024 – 2027 **National Enforcement and Compliance Initiatives (NECIs)**
- **Greenhouse Gas Reporting Program (GHGRP)**

- **Protection our Climate by Reducing Use of HFCs**

If you suspect someone is illegally importing HFCs, tell EPA at its **Report Environmental Violations website**. Information you submit will be forwarded to EPA environmental enforcement personnel or to the appropriate regulatory authority.

USEPA Press Office, 29 January 2024

Image: USEPA

10. NASRC to host free natural refrigerants training summit in Pittsburgh

The North American Sustainable Refrigeration Council (NASRC) has announced that it is co-hosting a free event in Pittsburgh, Pennsylvania, where refrigeration technicians will be provided with hands-on training in CO_2 (R744) and propane (R290) systems.

The Natural Refrigerant Training Summit is scheduled to take place 19–21 March 2024.

According to a statement from the NASRC, a California-based nonprofit, the summit is open to union and non-union refrigeration technicians and will offer comprehensive training on the latest natural refrigerant technologies. Food retailers and HVAC&R students and instructors can also attend.

Learn more >>> The North American Sustainable Refrigeration Council (NASRC), 23 January 2024

r744, 30 January 2024, By Christina Hayes

Image: r744 - Copeland's Andre Patenaude (right) showing technicians the manufacturer's mobile CO_2 training unit at last year's Natural Refrigerant Training Summit in St. Louis. (Source NASRC)

EUROPE & CENTRAL ASIA

11. The under-reported EU bill poised to remove 500 million tonnes of CO_2 by 2050

What's happening? The European Council approved legislation aimed at curbing the use of fluorinated gases (F-gases) and ozone-depleting substances (ODS) in a move that will remove 500 million tonnes of CO_2e emissions by 2050. The new rules mandate a total phase-out of hydrofluorocarbons (HFCs), which account for 90% of F-gas emissions by mid-century, coupled with a 95% reduction by 2035 against 2015. The use of all F-gases will be restricted when climate-friendly alternatives are available, while an export ban on equipment containing such gases will be imposed. The regulations also expand requirements for ODS recycling, reclamation, and

destruction to cover a range of sectors, such as refrigeration, air conditioning, heat pump equipment, building materials and fire protection systems. (ESG Today)

Why does this matter? F-gases and ODS, which account for around 3% of the EU's total greenhouse gas (GHG) emissions, are highly potent with global warming potential thousands of times more powerful than CO_2. Additionally, ODS damage the ozone layer that absorbs harmful UV radiation from the sun, preventing it from reaching the Earth's surface. Both categories of these human-made chemicals are already subject to EU legislation through the 2014 F-gas regulation and the 2009 Ozone regulation that were implemented to fulfil obligations set out by the 1987 Montreal Protocol – one of the most successful environmental treaties ever – and the 2019 Kigali Amendment. The new rules will further cut emissions of these substances, forming part of the European Green Deal and will enter into force 20 days after publication in the EU's Official Journal.

Phase out timeline – In addition to banning the sale of equipment containing HFCs, such as domestic refrigerators, chillers, aerosols, and foams where it is feasible to switch to F-gas alternatives, the new rules also set dates for when F-gases in other equipment need to be totally phased out. For example, medium-voltage switch gears need to phase out F-gases by 2030, high-voltage switchgears and small monoblock heat pumps and air conditioning by 2032 and split air conditioning and heat pumps by 2035. Meanwhile, the rules regarding ODS strictly limit their use to certain conditions, such as for feedstock, process agents, in laboratories and for fire protection in specific applications like aircraft and military equipment.

Climate friendly alternatives – The European Commission believes the new regulations will inspire manufacturers of products that typically rely on F-gases to pivot towards climate-friendly alternatives, such as hydrocarbons and ammonia. In turn, this will advance the development of innovative clean technologies, presenting a long-term opportunity for companies working in this space.

US action – Last year, the US Environmental Protection Agency (EPA) took similar steps by issuing a final rule to cut HFCs by 40% below historic levels between 2024 and 2028, having successfully achieved a 10% phase-down step implemented between 2022 and 2023. The legislation aligns with the bipartisan American Innovation and Manufacturing Act (AMI) target to curtail production and use of the chemicals by 85% by 2036 in order to avoid around 0.5C of global warming by the end of the century. The EPA also introduced measures to restrict the use of certain HFCs in more than 40 types of products and equipment starting in 2025 and has proposed regulations to improve the management and reuse of existing HFCs.

Global efforts – More broadly, over 60 countries committed to the Global Cooling Pledge – unveiled at COP28 in Dubai late last year – recognising that promoting sustainable cooling could save 78 billion tonnes of CO_2e by 2050. The signatories agreed to reduce emissions associated with cooling across all sectors by at least 68% by 2050 against 2022 levels, with a specific focus on refrigerants with high global warming potential, including ratifying the Kigali Amendment by 2024 and for early action to reduce the use of HFCs via the Montreal Protocol Multilateral Fund. The nations also committed to a joint effort to boost the global average efficiency of new air conditioning equipment by 2030.

CurationCorp, 9 February 2024, By Nicola Watts

Image: CurationCorp

12. Bulgarian customs seize 1 tonne of HFCs

A shipment of nearly one tonne of smuggled HFC refrigerants in disposable cylinders have been seized by Bulgarian customs officials.

Customs officials at the Kalotina border crossing found the refrigerant – 80 cylinders of R410A and 134A, with a total weight of 985kg – during the inspection of a Bulgarian-registered truck entering the country from Serbia earlier this month. All were in non-refillable cylinders.

According to the presented transit documents, the cargo was textiles from Italy to Bulgaria. The refrigerant cylinders were not mentioned. As a result, the illegal goods were seized under Bulgaria's Customs Act.

CoolingPost, 8 February 2024

Image: CoolingPost

13. Walk-In Cold Rooms: A Practitioner's Technical Guide

In many developing countries, agriculture is crucial to livelihoods, and developing the cold chain from field to table can boost incomes and stimulate economic growth. Cold stores are an essential link in the cold chain, which aims to preserve the safety, quality and nutritional value of food. Cold rooms face extreme challenges when operating in locations far from reliable power supplies, supply chains and technical support, and in hot climates.

An essential technical guide: "Walk-in Cold Rooms: A Practical Technical Guide" aims to consolidate the current state of knowledge on the design and operation of cold rooms adapted to these different conditions.

International cooperation: The production of this guide is based on cooperation between the IIR and Efficiency for Access, with the contribution of the World Bank's ESMAP Efficient Clean Cooling programme.

A green objective: This guide aims to promote environmental sustainability by presenting advice and practices to enable developers, owners, and suppliers to specify, install and operate pre-coolers and cold stores with an emphasis on energy efficiency, the use of renewable energy sources and the selection of climate-friendly components.

International Institute of Refrigeration (IIR), February 2024

Image: IIR

14. Virtual training in transcritical CO_2 refrigeration systems for supermarkets

28 February - 8 March 2024, 8:00AM - 6:00PM UTC

The Green Cooling Initiative (GCI) of GIZ Proklima, in cooperation with Carrier, invites up to 100 RAC trainers to participate in a virtual training on transcritical CO_2 supermarket refrigeration.

The virtual training will include approximately 8 h self-paced online sessions and 2 webinars of approximately 1,5 hour each.

The online platform for the self-paced sessions will be open for participants during the month of February. The webinars will be conducted on 28 February and 8 March 2024.

Learn more / Register >>>

The Green Cooling Initiative (GCI), January 2024

Image: GCI

15. AREA: Women in cooling video competition- 2nd edition!

AREA and World Refrigeration Day (WRD) have launched the second edition of the video competition on best practices for EU women in cooling.

The challenge is to provide a video showing best practices in the design and application of RACHP systems and/or handling of refrigeration, air conditioning or heat pumps.

The video must be posted privately on AREA's Facebook page: "AREA" or sent to info@area-eur.be by Sunday 7th of April 2024 at midnight.

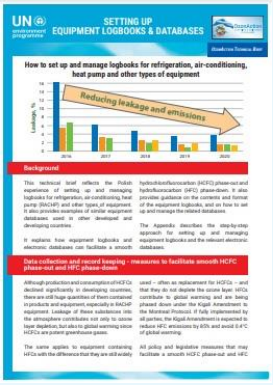
All European languages are welcome. Good luck to our EU women in cooling!

Learn more / Apply >>>

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

Image: AREA

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.

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:

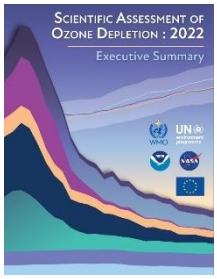
- **The Technology and Economic Assessment Panel**
- **The Scientific Assessment Panel**
- **The Environmental Effects Assessment Panel**

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 >>>**

Scientific Assessment of Ozone Depletion: 2022 - Executive Summary

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 91 meetings. The Fund Secretariat, located in Montreal, assists the Executive Committee in its tasks. Projects and activities supported by the Fund are implemented by four international implementing agencies and a few bilateral agencies.

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

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

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

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

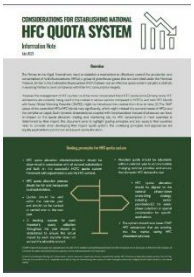
- Click here for the Executive Committee upcoming and past Meetings and related documents.

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.

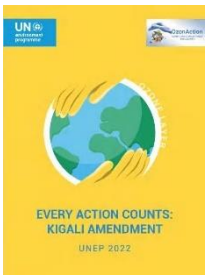
The section below features several of our most recent products.
Visit OzonAction website for more information, discover the entire range of products.

Images in this section are by OzonAction

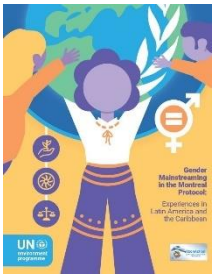
Considerations for establishing national HFC Quota System - As HFC consumption in most countries is determined by their import, this document aims to highlight guiding principles and key aspects that countries need to consider when developing their import quota system. The underlying principles and approaches 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**

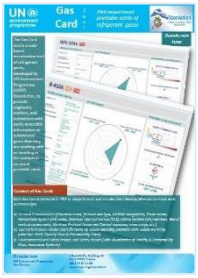


Refrigeration, Air-Conditioning, and Heat Pumps (RACHP) Associations & Organizations: This Knowledge Map provides a global directory of RACHP associations, societies, and organisations around the world. These are key stakeholders for ensuring safe and efficient refrigerant transitions.

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).

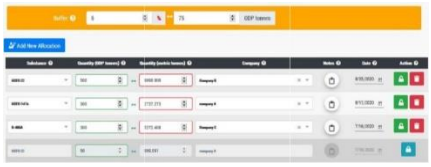


More Information - The Gas Card web-based tool is part of UNEP OzonAction's portfolio of activities and tools to assist various stakeholders in developing countries, including customs officers and technicians, to achieve and maintain compliance with the Montreal Protocol on Substances the Deplete the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



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 CO_2-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, CO_2-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 CO_2-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:

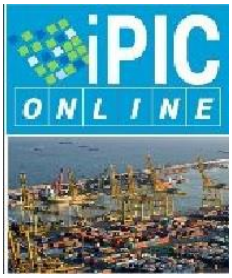
- **Techniques, Safety and Best Practice**
- **Flammable Refrigerant Safety**

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

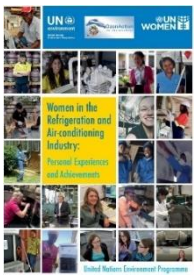
If you prefer to access the video clips via the OzonAction smartphone application, just search for "RAC Technician Video Series" or UNEP in the Google Play Store and iTunes/App Store or scan the QR code –
Free to download!

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.



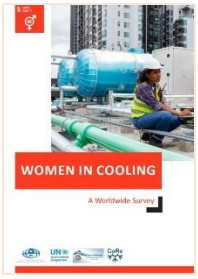
Women in the refrigeration and air-conditioning industry: Personal experiences and achievements The United Nations Environment Programme's (UNEP), OzonAction, in cooperation with UN Women, has compiled this booklet to raise awareness of the opportunities available to women and to highlight the particular 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**



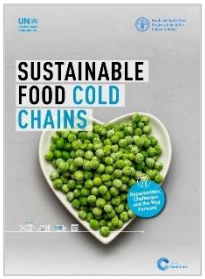
As part of IIR and UNEP OzonAction's partnership, a set of Cold Chain Technology Briefs was released over the past few years, which includes in-depth summaries about the cold chain in different key sectors. They include descriptions of technology, refrigerant options and trends and conclude with prospects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

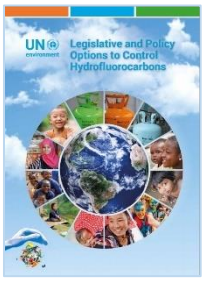
Results of a Worldwide Survey about Women in Cooling Released by IIR and UNEP OzonAction - Refrigeration, Air-Conditioning, and Heat-pumps (RACHP) are crucial for our health, nutrition, comfort, and well-being. It is one of the sectors that crosscuts many of the UN sustainable development goals and can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



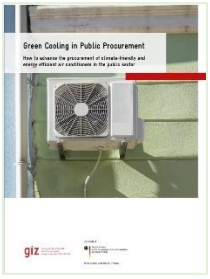
Sustainable Food Cold Chains: Opportunities, Challenges and the Way Forward-This [UNEP-FAO] report explores how food cold chain development can become more sustainable and makes a series of important recommendations. These include governments and other cold chain stakeholders collaborating to adopt a 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**



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

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

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

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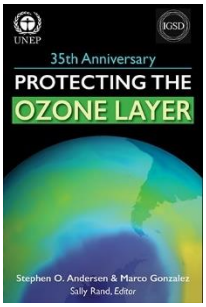

Protecting the Ozone Layer - 35th Anniversary Edition - a new book celebrating the 35th Anniversary of the Montreal Protocol. The electronic version (Kindle Edition) of the book has become **available for purchase $3.03 on Amazon**. The book highlights successes and documents innovation during the first 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.

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