Volume XXIII | 30 August 2023

In this issue:

Special Announcement - Sustainable Growth: Building Business Models for Cold Chain Development

Washington, DC Aug. 8, 2023 – The Global Food Cold Chain Council (GFCCC) and the United Nations Environment Programme (UNEP) OzonAction are convening for the third annual **World Cold Chain Symposium** on 21 October 2023, sponsored by Carrier Global Corporation.

The program will be held at the United Nations Environment Programme Headquarters in Nairobi, Kenya, ahead of the 35th Montreal Protocol Meeting of the Parties. The theme for this year's event is Sustainable Growth: Building Business Models for Cold Chain Development, as a logical next step after 2022's World Cold Chain Symposium that focused on financial mechanisms for developing projects. Participants and speakers will include diverse high-level expert representatives from the private sector, government, international organizations, academia, and non-profit organizations. A recording of the session will be available after the event.

This year's Symposium will showcase the successes of the operations and strategies of existing projects and the benefits of building efficient and sustainable business models for the development of the cold chain around the globe. The theme calls attention to the need for the project sponsor to support the local organization in developing business practices that ensure the project's long-term self-reliance, viability, and efficacy. The program will focus on projects underway within Africa and supported by numerous public and private sector organizations.

There continues to be a growing recognition of the need for more attention and actions on sustainable cold chains for food security, public health, environmental and economic reasons. The Symposium is one of several important international events that explore the issue, including notably the United Nations Food Systems Summit held in July and the upcoming 35th Montreal Protocol Meeting of the Parties (MOP35) in late October, and the 28th UN Framework Convention on Climate Change Conference of the Parties (COP28) in November-December. The Symposium and its sponsors plan to assist in furthering the dialogue already discussed and provide more context of the intricacies of developing a sustainable cold chain ahead of the upcoming events.

"The World Cold Chain Symposium will once again bring together the world's leading experts and some of the most innovative actors to focus on finance mechanisms that can reduce food loss and waste, boost global food supply, and reduce greenhouse gas emissions," said Kevin Fay, Executive Director of the Global Food Cold Chain Council.

For event information, including registration for program and reception, please email **dobson@foodcoldchain.org**

UNEP is an Implementing Agency of the Multilateral Fund of the Montreal Protocol on Substances that Deplete the Ozone Layer. OzonAction's goal is to enable developing countries to meet and sustain their compliance obligations under the treaty.

GFCCC is an independent not-for-profit industry organization that seeks to simultaneously reduce food waste, and related greenhouse gas emissions in the processing,

transportation, storage, and retail display of cold food by expanding and improving access to energy efficient low-global warming potential technology.

WCCS Press Release – 2023 Announcement | **SAVE THE DATE WCCS 2023**

For event information, including registration for program and reception, please email **dobson@foodcoldchain.org**

Image: WCCS

GLOBAL

1. Kigali Amendment latest ratifications

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

Egypt, 22 August 2023
Georgia, 11 July 2023
Spain, 9 June 2023
Bahamas, 30 May 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. Knowledge is cold …

… and energy-eating*. They are the two issues that lead a sector, the one of data centers, to be an important side of the refrigeration world, but not sufficiently known and divulged, yet. A theme that depends on the technologies adopted, on their engineering and organizational modality and on factors that also concern the envelope where the data center is hosted.*

What enables the global communication system? The net. However, the latter draws information from refrigerated "sanctuaries", data centers. They are the real heritage that makes the net significant. Therefore, the world of redundant servers that house databases, sites, archives recovered from the analogue world, data stored according to organic logics or non-, is the planet's real intellectual heritage, with its pros and cons.

Besides, if the infrastructure that allows the circulation of these information is necessary, we discover almost stealthily that these bytes are much more exacting than humans in the ambit of temperature and relative humidity rate, needing also a very challenging filtration of the environmental air, but we now analyse the most "trivial" matter, the temperature management.

Then the first question to be asked is – beyond the percentage incidence – what is the work we are carrying out in Italy on this sector, what are the variables to be ruled, what the consequences that the ecologic transition is determining in this field.

Base coordinates

Data centers are physical structures where are hosted large servers, data processing machines, uninterruptible power supplies and support equipment of information systems. They are engine rooms constantly in operation, 24 hours a day, and they handle and process enormous quantities of digital processes and information.

Consequently, they consume large amounts of energy and resources that the most attentive organizations try gradually decreasing, to optimize costs and to reach, in the meantime, noxious emissions for the environment that are close to zero as much as possible. It is a target highly in vogue also in environments that are "distant" from regulatory binds like European ones, because many of these structures belong to big brands or multinationals that make their Corporate and Social Responsibility image a feather in the cap. Ultimately, this requires that the data center design is accomplished according to severe efficiency criteria, increasingly based on renewable energy sources (and here we are already introducing an "extra-plant engineering" concept that concerns the integration with the choices of primary energy to be used").

However, it is easy to deduce that one of the primary criticalities that can be associated to data centers is the heat that is generated by the manifold powerful machines hosted in their interior: in fact, in case of an excessive temperature, the operation of information equipment is affected, with huge damages to the whole infrastructure. For this reason, each data center provides for a system of heat cooling and extraction in its interior, more or less structured.

From an approximate but highly plausible calculation, we know that the heat dissipated by IT systems represent about one third of the energy overall absorbed: this therefore determines the absolute priority of the energy consumption and of the environmental impact that derive from their use, to the extent of resulting in the need of developing more and more efficient conditioning solutions, connecting the functional aspects of business continuity with economic ones of correlated costs.

Options, strong and weak points

The management of the temperature factor has always implied the use of systems that sought the utmost efficiency and therefore direct expansion systems, based on the use of synthetic cooling gases with high refrigerating potential, were deployed, but today we can state that the building of these systems is subjected to three different elements that make the choice of this refrigerant typology less and less simple.

First of all, the dimensional growth of these environments, which asks the potential question of using systems with alternative gases (with cascade plants) that – on the size of new giant data centers – can prove to be more efficient and efficacious, according to the issue connected with the flammability of the new generation of synthetic gases, which limits their use under complex conditions from the point of view of ATEX regulation and, third, the quickly incoming term for the elimination from the market of refrigerants with such GWP as to make them considered as climate-impacting.

The choice of turning to cascade systems that exploit refrigerant fluids based on natural molecules is however subjected to the second important remark, i.e. a highly efficient design, which exploits also the least “refrigerating” and more “aeraulic” solutions of heat recovery.

A really giant technology and design issue, which we intend to study in-depth due to its growing relevance in the economic impact and in the development repercussions that it will cause in our refrigeration world.

Refrigeration World, 28 August 2023

Image: Refrigeration World

3. Descubriendo el potencial de los sistemas de refrigeración magnética: Un análisis exhaustivo

Los sistemas de refrigeración magnética han estado ganando atención significativa en los últimos años, gracias a su potencial para revolucionar la forma en que enfriamos nuestros hogares, oficinas e instalaciones industriales. Esta tecnología innovadora se basa en el efecto magnetocalórico, un fenómeno en el que ciertos materiales cambian de temperatura cuando se exponen a un campo magnético. Al aprovechar este efecto, los sistemas de refrigeración magnética prometen ofrecer soluciones de enfriamiento más eficientes, respetuosas con el medio ambiente y rentables en comparación con los métodos tradicionales de refrigeración por compresión de vapor.

Una de las principales ventajas de los sistemas de refrigeración magnética es su eficiencia energética. Los refrigeradores y aires acondicionados de compresión de vapor

tradicionales confían en la compresión y expansión de gases refrigerantes para lograr el enfriamiento, un proceso que puede ser intensivo en energía y contribuir a las emisiones de gases de efecto invernadero. En cambio, los sistemas de refrigeración magnética utilizan materiales magnetocalóricos sólidos y solo requieren la entrada de un campo magnético para generar enfriamiento. Esto resulta en un consumo de energía significativamente reducido, con algunos estudios que sugieren que los sistemas de refrigeración magnética podrían ser hasta un 50% más eficientes energéticamente que sus contrapartes de compresión de vapor.

Además de su eficiencia energética, los sistemas de refrigeración magnética también poseen un impacto ambiental reducido. Los métodos convencionales de refrigeración dependen del uso de gases refrigerantes, muchos de los cuales se ha descubierto que contribuyen al agotamiento del ozono y al calentamiento global. La adopción generalizada de la tecnología de refrigeración magnética podría ayudar a mitigar estas preocupaciones ambientales, ya que los materiales magnetocalóricos utilizados en estos sistemas no presentan los mismos riesgos para la capa de ozono o el clima. Además, el consumo de energía reducido asociado con los sistemas de refrigeración magnética también podría ayudar a disminuir las emisiones totales de gases de efecto invernadero del sector energético.

Otro beneficio de los sistemas de refrigeración magnética es su potencial de ahorro de costos. Si bien la inversión inicial en un sistema de refrigeración magnética puede ser mayor que la de un sistema de compresión de vapor tradicional, el ahorro a largo plazo en costos de energía podría compensar esta diferencia. Además, los requisitos de mantenimiento reducidos asociados con los sistemas de refrigeración magnética también podrían contribuir a una disminución de los costos operativos generales. A medida que la tecnología continúa avanzando y se adopta de manera más generalizada, se espera que los costos asociados con los sistemas de refrigeración magnética continúen disminuyendo, lo que los convierte en una opción cada vez más atractiva tanto para consumidores como para empresas.

A pesar de las numerosas ventajas de los sistemas de refrigeración magnética, todavía existen algunos desafíos que deben superarse antes de que esta tecnología pueda ser ampliamente adoptada. Uno de estos desafíos es el desarrollo de materiales magnetocalóricos adecuados que exhiban un fuerte efecto magnetocalórico a temperatura ambiente. Si bien se ha logrado un progreso significativo en esta área, se necesita más investigación para identificar y optimizar materiales que puedan cumplir con los requisitos de rendimiento para aplicaciones a gran escala. Además, el desarrollo de sistemas de generación de campo magnético eficientes y rentables es crucial para la viabilidad comercial de la tecnología de refrigeración magnética.

En conclusión, los sistemas de refrigeración magnética tienen un inmenso potencial para transformar la forma en que enfriamos nuestros hogares, oficinas e instalaciones industriales. Con su eficiencia energética, impacto ambiental reducido y potencial de ahorro de costos, estos sistemas ofrecen una alternativa prometedora a los métodos de refrigeración por compresión de vapor tradicionales. Sin embargo, se necesitan esfuerzos continuos de investigación y desarrollo para superar los desafíos restantes y desbloquear todo el potencial de esta tecnología innovadora. A medida que los científicos e ingenieros continúan avanzando en este campo, es probable que los sistemas de refrigeración magnética desempeñen un papel cada vez más importante en nuestros esfuerzos por crear un futuro más sostenible y eficiente desde el punto de vista energético.

Fuentes:
– Informe sobre sistemas de refrigeración magnética, Centro de Investigación en Energía de los Materiales de Refrigeración (CIMERC), Universidad Tecnológica de Delft.

ZBR TV ONLINE, 29 agosto 2023

Image: ZBR TV ONLINE

4. Dr Yosr Allouche appointed as next Director General of the International Institute of Refrigeration

Dr Yosr Allouche (39 years old) will become the first woman to hold the role of Director General of the International Institute of Refrigeration (IIR).

Replacing Didier Coulomb, who will be stepping down from the role after 20 years, Dr Allouche, a Norwegian-Tunisian refrigeration scientist, was nominated by Norway (Norwegian Ministry of Foreign Affairs; Norwegian Embassy in France) and appointed by vote on the eve of the 26th IIR International Congress of Refrigeration in Paris (France) over opposing candidate Yannick Mathieu, who was put forward by the French Association of Refrigeration (Association Française du Froid).

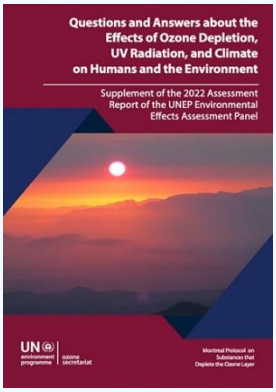
With 13 years of experience and knowledge in the field, she will officially take the lead of the IIR during the second semester of 2024.

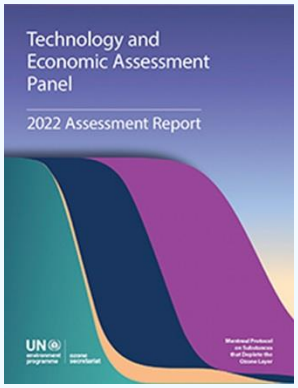
In reaction to her appointment, Dr Allouche stated “I am thrilled and thankful for the trust our member countries have placed in me to ensure this high-level role. As a refrigeration scientist, it is an honour for me to be elected by our member countries as the first woman to succeed the many emblematic leading figures of the IIR. I will put all my skills, knowledge and energy to ensuring a meaningful benefit and an added value for our organisation, countries and members”.

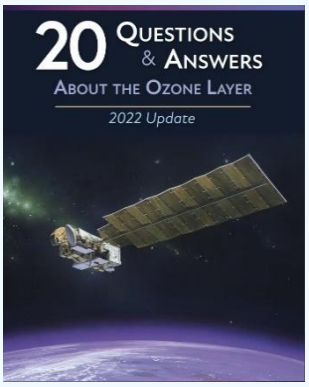
Currently head of projects at the IIR, Dr Allouche holds a PhD in Mechanical Engineering from the Faculty of Engineering of the University of Porto (Portugal) and is the author of numerous articles published in scientific journals, guides and reports.

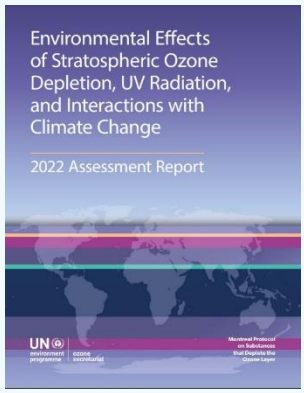
She was a research scientist in Refrigeration Technology at the Norwegian University of Science and Technology (NTNU) and holds an invited Associate Professor title in NTNU since 2021.

Contact: **Deonie Lambert** | Communications Manager
Image: International Institute of Refrigeration (IIR)









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

AFRICA

5. African Francophone RAC Experts Receive Training and Certification in F-Gases

Praia, Cape Verde, 16 August 2023 – Twenty (20) Refrigeration and Air Conditioning (RAC) experts from eight African Francophone countries – Benin, Chad, Cape Verde, Democratic Republic of Congo, Madagascar, Niger, Senegal and Togo (20 male) successfully participated in the Theory, practice training and certification session on servicing best

practices and safe handling of F-Gases in refrigeration held in Praia, Cape Verde from 17 – 21 July 2023.

The training, organized by **UNEP OzonAction Compliance Assistance Programme (CAP) Africa Francophone Network** in collaboration with The **Centro Studi Galileo** and the National Ozone Unit (NOU) in Cape Verde, aimed to enhance the participants' knowledge, skills, and attitudes by focusing on various aspects of RAC work.

Certification of technicians is critical as it will ensure that the technicians have the required competencies to work with HCFCs (hydrochlorofluorocarbons) and HCFC alternatives in an environmentally responsible manner that minimizes emissions of these refrigerants. The phasing out of HCFCs will lead to the increased adoption of low-GWP alternative refrigerants. However, most of these low-GWP refrigerants have flammability and/or toxic properties. Hence the installation, servicing, and maintenance of RAC systems that use low-GWP refrigerants need to be handled by competent technicians to ensure best practices and preventive leakage of the refrigerants.

In his opening statement, Mr. Yamar Guisse, UNEP Montreal Protocol Regional Coordinator for Francophone Africa welcomed participants and expressed his gratitude to the Government of Cape Verde for hosting the workshop. Mr Madi Sakande, Instructor & Coordinator – Centro Studi Galileo, also welcomed the participants and emphasized the importance and significance of the training and certification session for trainers in the RAC sector. Mr. Adilson Fragoso, National Ozone Officer, NOU, Cape Verde, also welcomed participants and thanked UNEP OzonAction and Centro Studi Galileo for their collaboration in organizing the workshop.

The training workshop presented a varied agenda consisting of presentations, discussions, practical demonstrations, and working groups as well as interactive exercises that considered overall challenges in the region and good practices in the RAC sector. Topics covered included the safe handling of flammable refrigerants, proper brazing techniques, tube processing, refrigerant recovery, evacuation procedures, and the avoidance of refrigerant purging during charging.

One of the highlights of the training, which was much appreciated by the participants, was the introduction of new technologies in RAC such as the use of non-flame pipe connections, particularly in refrigeration units employing flammable refrigerants.

After an intensive training session, the participants took a theory and practical exam. Of the 20 candidates, 12 were certified while those who were not will require additional training.

The training was facilitated by Mr. Madi Sakande and Mr. Said El Harch, from Centro Studi Galileo. The expertise and guidance provided by the trainers contributed to the success of the training, equipping the RAC instructors with essential knowledge and skills.

Contact:
Yamar Guisse, Montreal Protocol Regional Coordinator, Francophone Africa
Moussa Barry, Programme Management Officer, Francophone Africa

Image: OzonAction website

LATIN AMERICA AND CARIBBEAN

6. Colombia y Ecuador realizaron intercambio de información y experiencias en materia aduanera sobre refrigerantes en Barranquilla

Este encuentro permitió realizar una revisión sobre el control de importaciones de sustancias agotadores de la capa de ozono.

La Dirección de Impuestos y Aduanas Nacionales -DIAN- a través de la Dirección Seccional de Aduanas de Barranquilla realizó un intercambio de información y experiencias en puerto con el Servicio Nacional de Aduanas de Ecuador -SENAE- y la Unidad Técnica de Ozono -UTO-, actividad que se desarrolló el pasado 17 de agosto en la capital del Atlántico.

En este encuentro en el que la entidad aduanera recibió a su homóloga del vecino país, corresponde a un intercambio de información y experiencias en el control de importaciones de sustancias agotadores de la capa de ozono, haciendo seguimiento al protocolo de Montereal adoptado por Colombia para la importación de refrigerantes provenientes principalmente de China, Brasil y México.

Durante el encuentro se desarrollaron temáticas como el procedimiento de inspección, análisis de refrigerantes (laboratorio), experiencias en el puerto, actividades de control posterior e intercambio de información, los cuales permiten una retroalimentación de ambos países para mejorar los procesos de operación logística de comercio exterior.

Dato de interés

La Unidad Técnica de Ozono es la encargada de realizar el seguimiento a la aplicación del protocolo de Montreal en Colombia, donde se intercambia información sobre las licencias ambientales, aprobaciones y cupos para las empresas importadores de gases refrigerantes, y la verificación al momento de presentar la documentación soporte sobre las importaciones de este tipo de mercancías.

Colombia Dirección de Impuestos y Aduanas Nacionales (DIAN), 24 agosto 2023

Image: DIAN website

7. Women in Grenada are championing change in the Refrigeration and Air Conditioning sector

The Green Cooling Initiative (GCI), a global nonprofit that promotes sustainable cooling worldwide, supported the training of local refrigeration and air-conditioning (RAC) technicians and the subsequent installation of 30 propane (R290) AC units in the Caribbean country of Grenada.

According to the GCI press release, the training and installations were part of a pilot venture of the Cool Contributions fighting Climate Change (C4) project commissioned and funded by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) to "demonstrate air conditioning with natural refrigerants as a future-proof solution."

GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH) runs GCI, which is part of GIZ Proklima – an umbrella of worldwide green cooling projects funded by the German and French government, the EU and other donors since 1995.

"One focus area was the training of RAC technicians because green cooling appliances need a special skill set," said Maja Schmauser, Junior Technical Advisor for GIZ Proklima, in a **You Tube video** outlining the project. "This is part of the technical and financial cooperation under the project to support Grenada in promoting green cooling."

In February, an all-female team of RAC technicians from different companies installed an R-290 split AC unit in the office of Kerryne James, Grenada's Minister of Climate Resilience Environment and Renewable Energy. "I want to extend my appreciation to the all-female team," James said in the video, adding that she hopes their example encourages more

young people – especially more women – to get involved and consider a career path in STEM fields.

“It is a good feeling to be part of a team of females to install an air conditioner for the Minister of Environment,” said Akelsha Cato, AC Technician.

In the video, James thanked GIZ for its donation. “We hope to strengthen this partnership to ensure necessary funds for us to phase out and phase down the ozone-depleting substances that we have in our government buildings.”

Green Cooling Network

To realize green cooling in global locations where technologies are limited, GCI operates the Green Cooling Network to bring together industry and governments via private-public partnerships, according to Philipp Denzinger, Project Manager of GCI. “We are aiming to establish supply chains between technology providers and the Global South,” he said in a recent R744.com **article** that invites manufacturers to join the Network.

Joining is easy and free of charge. The Network aligns manufacturers that “want to expand their markets globally or want to pilot something or establish supply chains to the Global South” with green cooling projects.

Such networking helps nations with low economic and industrial capabilities meet various international environmental protocols that address the global climate issue and greenhouse gas emissions, of which Grenada’s C4 project is an example. “Everybody that visits the minister will see that we demonstrate compliance with the Montreal Protocol,” said Merina Jessamy, Grenada’s Permanent Secretary in the Minister of Climate Resilience Environment and Renewable Energy.

The Network is far-reaching and well-established, with the GIZ Proklima group having trained over 600,000 technicians in green cooling technologies in more than 60 countries over the past 25 years, said Denzinger.

In addition to networking and training, GCI develops country based GHG inventories and mitigation potentials and develops action plans and strategies. Projects are featured on GCI’s website and in quarterly newsletters. Stakeholders can subscribe **here**.

“We hope to strengthen this partnership to ensure necessary funds for us to phase out and phase down the ozone-depleting substances that we have in our government buildings.”

Kerryne James, Grenada Minister of Climate Resilience Environment and Renewable Energy

hydrocarbons21, 9 August 2023, By Jae O. Haroldsen

Image: Technicians Marah St. John, Angela St. Bernard, Carlinda Passee and Akelsha Cato installed the R-290 AC in the office of Minister James. Photo Credit: GCI

ASIA AND THE PACIFIC

8. Fiji Ministry of Fisheries receives $1.3m ice machine

The Japanese Government this morning handed over an ice-making machine worth $1.3 million to the Ministry of Fisheries. The funding was provided through Japan's Economic and Social Development Program. The machine will support the Lautoka fishing cooperatives.

The Ministry's Permanent Secretary, Atelaite Rokosuka, thanked Japan for the assistance while also acknowledging Japan's previous support.

Rokosuka says the support aligns with and supports the United Nations Environmental Program Global Agreement on the Montreal Protocol to phase out the production and consumption of ozone-depleting substances.

She says this indicates Japan's commitment to supporting the fishermen of Lautoka, Yasawa, and nearby communities. [...]

FBC News, 30 August 2023, By Apenisa Waqairadovu

Image: FBC News Website

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

NORTH AMERICA

9. Top Environment Enforcement Cop Aims to Meet the Climate Moment

The EPA is going to steer dramatically more resources toward cracking down on methane emissions and the illegal importation of banned refrigerants, according to the agency's top law enforcer.

The effort is part of a bid to make climate change the Environmental Protection Agency's signature enforcement priority. Included in the plan are more inspections, more administrative penalty actions, more referrals to the Justice Department, and more requests that the department bring criminal cases against violators, David Uhlmann, head of the agency's Office of Enforcement and Compliance Assurance, said in an interview.

"If we didn't call climate our top national enforcement and compliance initiative, we would miss this moment, and I was not going to allow that to happen," said Uhlmann, who was confirmed for his position in July, more than two years after he was nominated by President Joe Biden.

Another part of the enforcement office's strategy is simply to put the regulated community on notice that climate change is now the EPA's top enforcement priority, according to Uhlmann.

"When we call something an initiative, we lift it up among all of our enforcement activities," he said. "We emphasize it in our messaging, and in our priority setting, we seek to obtain additional resources to allow us to do it—all of which gives us a much greater ability to address whatever the issue is than we would if we just have it reserved for our core enforcement programs."

Enforcement will also be driven by the EPA's 10 regional offices, which are required to devote 20% of their resources toward the enforcement targets listed in the agency's four-year national plan, Uhlmann said.

The latest plan, issued last week, included climate change enforcement for the first time. The EPA said it will focus especially on methane emissions from oil and gas facilities; methane emissions from landfills; and the use, importation, and production of hydrofluorocarbons (HFCs).

Crackdown on Smugglers

The EPA chose to focus on oil and gas facilities and landfills because they're among the nation's biggest sources of methane emissions, Uhlmann said.

The oil and gas sector is one of the largest sources of methane emissions, a potent planet-warming gas that has 25 times the global warming potential of carbon dioxide.

HFCs are being phased out of the global economy under the 2016 Kigali Amendment to the Montreal Protocol, but Uhlmann said the EPA has evidence that the planet-warming chemicals are still being illegally smuggled into the country. HFCs, commonly used in refrigerants, have vastly worse global warming potential than carbon.

To catch illegal importers, Uhlmann said the EPA will use the same playbook it used when chlorofluorocarbons were phased out in the 1990s and a "massive black market" for freon emerged. Uhlmann worked at the Justice Department at the time.

"We're going to be very aggressive at the borders, trying to intercept illegal importation," he said. "We're also going to be very vigorous in our efforts to detect unlawful sales within the country." The new effort will be further boosted by technological tools that didn't exist during the days of the CFC phase-down, Uhlmann said.

Broadly, the office's climate change enforcement push will be boosted by a proposed EPA rule to update greenhouse gas emissions reporting for the oil and gas sector, as well as the 2020 American Innovation and Manufacturing Act, which directs the agency to cut the production and consumption of HFCs by 85% by 2035, according to Stan Meiburg, a former EPA acting deputy administrator. [...]

Bloomberg Law, 24 August 2023, By Stephen Lee

Image: Bloomberg Law | A worker mixes cement to plug an oil well leaking methane. Photographer: September Dawn Bottoms/Bloomberg

EUROPE & CENTRAL ASIA

10. Les contradictions et aberrations de la climatisation : Quand se rafraîchir réchauffe la planète...

« L'augmentation de la demande de climatiseurs est l'un des angles morts les plus critiques dans le débat actuel sur l'énergie. »Selon les estimations, 1,9 milliard de systèmes de climatisation sont en fonctionnement aujourd'hui[1], soit près d'un appareil pour quatre habitants sur la planète. D'après l'Agence internationale de l'énergie (AIE), les ventilateurs électriques et les systèmes de

climatisation représentent actuellement 10% de la consommation mondiale d'électricité par an[2], un chiffre qui devrait augmenter.

Du fait de l'élévation des températures planétaires et de l'accroissement des richesses dans les pays en développement, l'AIE s'attend à ce que la demande énergétique pour la climatisation des bâtiments triple entre 2018 et 2050, ce qui équivaudrait à brancher chaque seconde dix nouveaux systèmes de climatisation sur le réseau électrique jusqu'au milieu du siècle.

…si la demande ne recule pas, la climatisation à elle seule sera responsable de 1,5 milliard de tonnes d'émissions de CO_2 en plus chaque année d'ici 2030, soit plus de trois fois les émissions du Royaume-Uni ou du Brésil

Cet été, le monde a enregistré des températures anormalement élevées sur terre[3] et sur mer[4], ce qui a renforcé la demande de climatiseurs, de ventilateurs et d'autres unités de refroidissement. Tout cet air refroidi crée un paradoxe, car la climatisation génère de la chaleur. A l'échelle locale, il s'avère que les systèmes de climatisation installés en zones urbaines augmentent la température dans les rues d'un degré Celsius[5]. Au niveau mondial, l'essor des climatiseurs, dont l'alimentation dépend en partie des combustibles fossiles, contribue au changement climatique, avec de fortes émissions de gaz à effet de serre (GES). Si la demande ne recule pas, la climatisation à elle seule sera responsable de 1,5 milliard de tonnes d'émissions de CO_2 en plus chaque année d'ici 2030, soit plus de trois fois plus les émissions du Royaume-Uni ou du Brésil[6].

UNE HAUSSE ALIMENTÉE PAR LES TROPIQUES

D'ici 2050, deux tiers des ménages pourraient posséder au moins un système de climatisation. Même si leur utilisation se généralise dans le monde entier, selon Radhika Khosla, professeure agrégée à la Smith School of Enterprise and the Environment, « la plus forte hausse, en valeur absolue, du nombre de climatiseurs sera enregistrée au niveau de l'équateur[7] ».

Quatre facteurs principaux convergent pour aboutir à ce résultat.

1) Au cours des prochaines décennies, les régions tropicales d'Afrique, d'Amérique du Sud, d'Asie méridionale et orientale, ainsi que certaines régions du Proche-Orient seront les plus touchées par le réchauffement climatique[8].

2) Les populations de ces régions sont de plus en plus riches. Selon l'AIE, « L'achat et l'utilisation de climatiseurs connaissent une croissance rapide dans […] les pays chauds et humides au fur et à mesure que les revenus augmentent, que l'accès à l'électricité s'améliore et que les populations deviennent plus prospères. En résumé, la climatisation est désormais abordable pour un nombre croissant de consommateurs[9]. »

3) La croissance démographique est plus rapide dans les régions chaudes et humides[10], ce qui élargit encore davantage le marché potentiel de la climatisation.

4) D'ici à 2050, 68% de la population mondiale devraient vivre dans des zones urbaines[11], contre 56% aujourd'hui[12], avec l'Afrique et l'Asie en tête de cette tendance. Plus le monde s'urbanise, plus l'« effet d'îlot de chaleur » urbain[13] va accroître le besoin en climatisation.

Sur les marchés émergents, le coût initial d'un climatiseur constitue un obstacle supplémentaire en matière de durabilité. Il est probable que les vieux appareils de climatisation de seconde main très gourmands en énergie ou que les systèmes neufs, mais

peu efficaces, constituent la majeure partie des achats. En Inde, par exemple, 37% des acheteurs optent pour des systèmes à efficacité moyenne, alors qu'à peine 20% sont en mesure de payer le prix fort pour des appareils classés « cinq étoiles »[14].

Pour les gouvernements, l'essor de la climatisation est à l'origine d'un autre problème. Selon une recherche menée par l'Université de Birmingham, les réseaux électriques de nombreux pays en développement « ne peuvent pas faire face aux pics de consommation quotidiens dus à la climatisation ». Par conséquent, les clients commerciaux installent souvent des générateurs diesel extrêmement polluants pour alimenter leurs systèmes de climatisation lorsque le réseau est en panne.[15]

Au niveau des villes, le simple fait de planter des arbres peut réduire l'effet d'îlot de chaleur

LA SOLUTION NATURELLE

L'une des solutions consiste en premier lieu à réduire la nécessité de refroidir l'air. En s'inspirant de la structure des termitières, le Centre Eastgate au Zimbabwe a fait chuter son besoin de climatisation et de ventilation active, réduisant ainsi sa consommation d'énergie de 90%. D'autres solutions simples comprennent l'ajout de stores internes ou externes au niveau des fenêtres : le Département américain de l'Energie estime que l'installation de stores aux fenêtres peut permettre de réduire jusqu'à 77% le gain thermique interne dû à la lumière du soleil[16].

Un refroidissement naturel peut également s'obtenir par les toits. Aux Etats-Unis, il s'est avéré que peindre les toitures en blanc a permis de réduire les températures au plafond de 30 degrés Celsius[17]. En Chine, l'installation généralisée de « toits verts » (où les toits sont recouverts de végétation vivante) a non seulement limité le besoin en climatisation à l'intérieur des bâtiments, mais aussi diminué la température moyenne de la surface au sol dans toute la zone du projet de 0,91 degré Celsius[18].

Au niveau des villes, le simple fait de planter des arbres peut réduire l'effet d'îlot de chaleur. En Europe, une étude a démontré que le couvert d'arbres peut entraîner une baisse de la température au sol dans les villes pouvant atteindre 12 degrés Celsius en été[19]. Une autre étude menée aux Etats-Unis a prouvé que les températures au niveau du sol étaient réduites de près de 6 degrés Celsius dès que le couvert d'arbres s'élève à 40%.

A mesure que la demande de climatisation s'intensifie, les appels à plus d'efficacité dans ce domaine vont probablement gagner en force à travers le monde.

TECHNOLOGIE ET POLITIQUE

A mesure de l'électrification de notre économie, la demande croissante d'électricité sera principalement tirée de sources renouvelables. Pour la climatisation, dont les besoins explosent lors des journées les plus ensoleillées, les panneaux solaires photovoltaïques offrent la solution décarbonée la plus évidente. Toutefois, nos nuits se réchauffant plus rapidement que nos journées[20], la climatisation est de plus en plus nécessaire après le coucher du soleil.

Dans les zones où les éoliennes ne sont pas viables, les innovations en matière de rafraîchissement urbain pourraient avoir un rôle à jouer. L'énergie renouvelable sert à refroidir l'eau pendant la journée. Cette eau froide est ensuite distribuée vers les foyers pendant la nuit pour alimenter les systèmes de refroidissement par le sol.

Le monde politique aura également un rôle à jouer en poussant les fabricants à réduire les émissions directes engendrées par les produits chimiques réfrigérants utilisés dans les systèmes de climatisation. Entré en vigueur en 2019, l'Amendement de Kigali au Protocole de Montréal exige l'élimination progressive des hydrofluorocarbures (HFC) réfrigérants, un gaz à effet de serre puissant.[21]

Les règles internationales sur les normes d'efficacité énergétique de la climatisation sont moins bien harmonisées. Même si la plupart des pays développés appliquent avec rigueur des normes minimales, les réglementations sur l'efficacité sont soit mal mises en œuvre, soit totalement inexistantes dans de nombreux pays en développement. A cet égard, le « modèle de lignes directrices pour les climatiseurs individuels » de l'ONU vise à combler ce fossé en proposant des orientations aux gouvernements en matière de création de cadres volontaires ou réglementaires. Selon les estimations, la prise en compte de ces lignes directrices sur le seul continent africain pourrait réduire les émissions de CO_2 de 28 millions de tonnes[22], l'équivalent de la production de vingt grandes centrales électriques. A mesure que la demande de climatisation s'intensifie, les appels à plus d'efficacité dans ce domaine vont probablement se multiplier à travers le monde.

Nous sommes confrontés à la menace grandissante du réchauffement planétaire. Le développement économique, la santé, voire la cohésion sociale pourrait bientôt reposer sur notre capacité à garder la tête froide

PLUS QU'UN LUXE

Il s'agit d'une opportunité pour les investisseurs et les entreprises. En encourageant la transition vers une exploitation plus durable des bâtiments, des entreprises comme Carrier ou le groupe japonais Daikin, deux des leaders mondiaux des systèmes de ventilation, de climatisation et de réfrigération, peuvent tirer profit de la croissance de la demande de climatisation et de la pression pour plus d'efficacité énergétique. Des opportunités vont apparaître au niveau des sources de revenus traditionnelles liées à la fabrication et l'entretien des produits, mais aussi au travers des nouvelles solutions digitales d'habitat intelligent proposées sur abonnement et conçues pour éliminer le gaspillage énergétique. Les politiques gouvernementales feront office de catalyseur : aux Etats-Unis, où la loi sur la réduction de l'inflation (Inflation Reduction Act) offre des crédits d'impôt en vue d'accroître le rendement énergétique des logements, Carrier vise un développement de ses recettes tirées de la vente de ses climatiseurs les plus efficients.

Une grande partie des discussions autour du changement climatique se concentrent sur le risque pour la santé et la vie : les décès dus à l'exposition à la chaleur ont augmenté chaque année depuis 2020[23]. Cependant, les températures en hausse menacent également la croissance économique et la productivité. Le groupe de réflexion The Atlantic Council estime que la chaleur coûte déjà USD 100 milliards par an à l'économie américaine et que ce chiffre pourrait être multiplié par cinq d'ici 2050 si aucune mesure d'adaptation n'est mise en œuvre.

Dans de nombreuses économies émergentes, la climatisation pourrait faire la différence entre le succès et l'échec économiques. D'après le Premier ministre de Singapour Lee Kuan Yew, « La climatisation […] a changé la nature de la civilisation en rendant le développement possible sous les tropiques. Mon premier acte en tant que Premier ministre a été d'installer des climatiseurs dans tous les bâtiments occupés par des fonctionnaires. Il s'agissait d'un facteur clé pour l'efficacité des pouvoirs publics ».[24]

La disponibilité de la climatisation devient un critère de plus en plus essentiel dans le cadre de chacun des 17 objectifs de développement durable des Nations Unies.[25] Nous sommes confrontés à la menace grandissante du réchauffement planétaire. Le développement économique, la santé, voire la cohésion sociale pourraient bientôt reposer sur notre capacité à garder la tête froide.

Notes

1 Graphique: Air Conditioning Biggest Factor in Growing Electricity Demand | Statista
2 The Future of Cooling – Analysis | IEA
3 July 2023 set to be world's hottest month on record | Reuters
4 Ocean surface hits highest ever recorded temperature and set to rise further | Oceans | The Guardian
5 Anthropogenic heating of the urban environment due to air conditioning – Salamanca – 2014 – Journal of Geophysical Research: Atmospheres | Wiley Online Library
6 doing-cold-smarter-report.pdf (birmingham.ac.uk)
7 Dr Radhika Khosla interview with BBC Newsnight | Oxford Energy
8 The Future of Cooling
9 The Future of Cooling
10 The Future of Cooling
11 68% de la population mondiale devraient vivre dans des zones urbaines d'ici à 2050, selon les Nations unies | DAES de l'ONU | Département des affaires économiques et sociales des Nations unies
12 Développement urbain, Vue d'ensemble (worldbank.org)
13 Reduce Urban Heat Island Effect | Agence de protection de l'environnement des Etats-Unis
14 How energy demand for cooling in India's cities is changing | Forum économique Mondial
15 doing-cold-smarter-report.pdf (birmingham.ac.uk)
16 Energy Efficient Window Coverings | Département américain de l'Energie
17 Cool Roofs Might Be Enough to Save Cities from Climate Overheating – Scientific American
18 Quantitative study on the cooling effect of green roofs in a high-density urban Area—A case study of Xiamen, China – ScienceDirect
19 The role of urban trees in reducing land surface temperatures in European cities | Nature Communications
20 Nights warming faster than days across much of the planet — ScienceDaily
21 Climate change: Is online shopping bad for the environment? | Forum économique Mondial
22 De nouvelles normes pour les climatiseurs et les réfrigérateurs pour lutter contre le changement climatique (unep.org)
23 World's largest study of global climate related mortality links 5 million deaths a year to abnormal temperatures – Medicine, Nursing and Health Sciences (monash.edu)
24 NPQ (digitalnpq.org)
25 Climate change: Is online shopping bad for the environment? | Forum économique mondial

Médias Citoyens Diois, 28 août 2023, Par: Fatih Birol, Executive Director, Agence internationale de l'énergie

Image: Médias Citoyens Diois

Voir aussi >>> Le recours à la climatisation a plus que doublé en Europe depuis 1990, Euronews Green, 28 août 2023, Par : Marie Jamet. *The article is available in several languages.*

11. Romania blocks illegal F-gas shipment

ROMANIA: Authorities in Romania have blocked a shipment of 1,140 cylinders of hydrofluorocarbon refrigerants from Turkey by an unregistered importing company.

The shipment, which included R134a, R410A and R407C was stopped at the Black Sea port of Constanța in southeastern Romania by the Garda

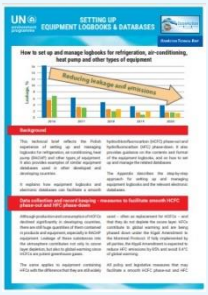
Naţională de Mediu (GMU) – Romania's National Environmental Guard – in collaboration with the Romanian Coast Guard.

The cargo was reportedly destined for a company from Brasov county in the Transylvania region of Romania. The total shipment amounted to 21,145.6 tonnes CO_2e.

"The importing company did not prove its registration in the F Gas register, or it did not prove the quota allocation for 2023," the GMU stated on its Facebook page.

Cooling Post, 30 August 2023

Image: Cooling Post



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

UN environment programme | ozone secretariat

Summary of the 45th meeting of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer: 2-7 July 2023. **Read/Download the full Summary Report**

See also >>>
- IISD daily reporting/highlights
- UNEP Ozone Secretariat/OEWG-45

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 announced: 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

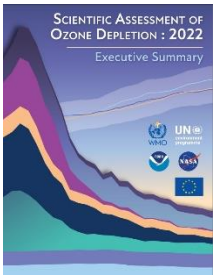
The Assessment Panels have been vital components of ozone protection since the Montreal Protocol was first established. They support parties with scientific, technological, and financial information in order to reach decisions about ozone layer protection and they play a critical role in ensuring the 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 >>>**

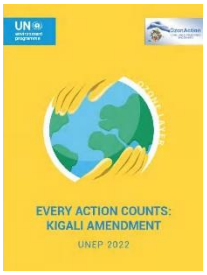
Scientific Assessment of Ozone Depletion: 2022 - Executive Summary



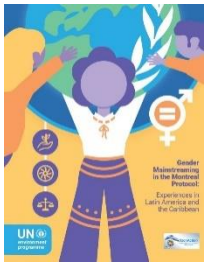
United Nations Environment Programme (UNEP), Ozone Secretariat

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**



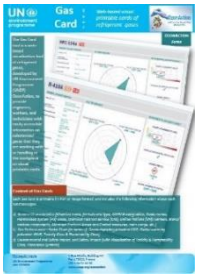
Gender Mainstreaming in the Montreal Protocol: Experiences in Latin America and the Caribbean -Taking into account that women and girls constitute half of the world's population and, therefore, represent half of the potential and innovation necessary to face the "triple planetary crisis" — climate change, 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



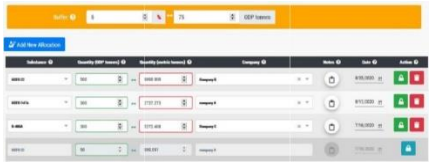
Gas Card Tool: Web-based Visual Printable Cards of Refrigerant Gases Content of Gas Cards - Each Gas Card is printable (in PDF or image format) and includes the following information about each substance/gas: a) General Characteristics (Chemical name, formula and type, ASHRAE designation, Trade names, 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 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 for 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:

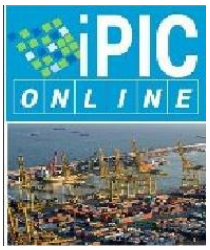
- **Techniques, Safety and Best Practice**
- **Flammable Refrigerant Safety**

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

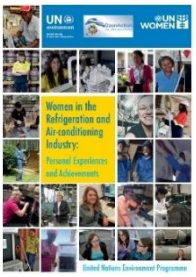
If you prefer to access the video clips via the OzonAction smartphone application, just search for "RAC Technician Video Series" or UNEP in the Google Play Store and iTunes/App Store or scan the QR code –
Free to download!

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.



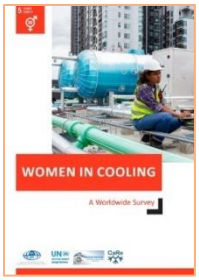
Women in the refrigeration and air-conditioning industry: Personal experiences and achievements The United Nations Environment Programme's (UNEP), OzonAction, in cooperation with UN Women, has compiled this booklet to raise awareness of the opportunities available to women and to highlight the particular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



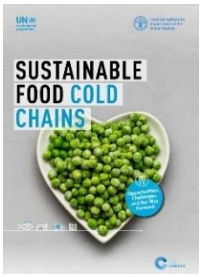
As part of IIR and UNEP OzonAction's partnership, a set of Cold Chain Technology Briefs was released over the past few years, which includes in-depth summaries about the cold chain in different key sectors. They include descriptions of technology, refrigerant options and trends and conclude with prospects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

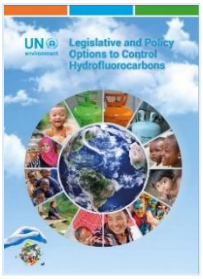
Results of a Worldwide Survey about Women in Cooling Released by IIR and UNEP OzonAction - Refrigeration, Air-Conditioning, and Heat-pumps (RACHP) are crucial for our health, nutrition, comfort, and well-being. It is one of the sectors that crosscuts many of the UN sustainable development goals and can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

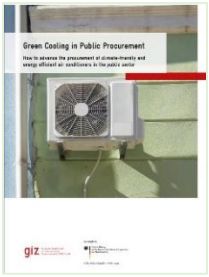


Legislative and Policy Options to Control Hydrofluorocarbons - In order to follow and facilitate the HFC phase-down schedules contained in the Kigali Amendment, the Parties, including both developed and developing countries, will have to implement certain measures. This booklet contains a recommended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



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

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

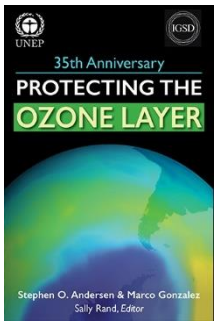


E-Book on Process Safety Management (PSM) Training for Ammonia Refrigeration - a new e-book about the critical elements of a process safety management (PSM) training program for facilities operating an ammonia refrigeration system.

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

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

Request free Download here



Protecting the Ozone Layer - 35th Anniversary Edition - a new book celebrating the 35th Anniversary of the Montreal Protocol. The electronic version (Kindle Edition) of the book has become **available for purchase $3.03 on Amazon**. The book highlights successes and documents innovation during the first 35 years and inspires new ambition to strengthen protection of stratospheric ozone and climate before Earth passes tipping points. The book tells the story of the Montreal Protocol, revealing a model of cooperation, collaboration, universal ratification, record of compliance with over 99 per cent of controlled ozone-depleting substances (ODSs) phased out, the ozone layer on the path to recovery, the 2007 Montreal Adjustment, and the 2016 Kigali Amendment moving the Montreal Protocol further into environmental protection. Unfinished business includes: HCFC phase out, ODS bank management, HFC phase down, uncontrolled ozone-depleting greenhouse gas nitrous oxide (N_2O), 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.

Click here for recent OzoNews Issues

Request a PDF of the current issue

Subscribe to OzoNews

---

contributions solicited from other organizations, the news is sourced from on-line newspapers, journals, and websites.

The views expressed in articles written by external authors are solely the viewpoints of those authors and do not represent the policy or viewpoint of UNEP. While UNEP strives to avoid inclusion of misleading or inaccurate information, it is ultimately the responsibility of the reader to evaluate the accuracy of any news article in OzoNews. The citing of commercial technologies, products or services does not constitute endorsement of those items by UNEP.

If you have questions or comments regarding any news item, please contact directly the source indicated at the bottom of each article.

Prepared by: Samira Korban-de Gobert
Reviewed by: James S. Curlin

If you wish to submit articles, invite new subscribers, please contact:
Samira Korban-de Gobert, samira.degobert@un.org

UNEP, OzonAction, 1, rue Miollis, Bldg. VII – 75015, Paris • France