

# OzoNews

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

**Volume XXIV | 29 February 2024**

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## GLOBAL

1. Kigali Amendment latest ratifications

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

[Djibouti, 8 March 2024](#)

[Guatemala, 11 January 2024](#)



At the Twenty-Eighth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, held in Kigali from 10 to 15 October 2016, the Parties adopted, in accordance with the procedure laid down in paragraph 4 of article 9 of the 1985 Vienna Convention for the Protection of the Ozone Layer, a further amendment to the Montreal Protocol as set out in Annex I to the report of the Twenty-Eighth Meeting of the Parties (Decision XXVIII/1).

Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, Status of Ratification 15 October 2016 to [date](#).

[United Nations Treaty Collection](#)

*Image: UN Treaty Collection website*

## 2. Celebrating International Women's Day, 8 March 2024



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

in environmental protection with a role model by showing them that there are successful women in Montreal Protocol fields – you are indirectly investing in their future.

This year's IWD theme is **"Invest in women: Accelerate progress."** Empowering women and promoting gender equality in line with Sustainable Development Goal 5: Gender Equality is crucial for accelerating sustainable development, of which the Montreal Protocol is a part. On this celebratory day, I encourage both men and women in National Ozone Units to reflect on the importance of further investing in women by including, involving, and empowering them in different facets of our work. IWD is also a perfect opportunity to outreach examples of the women in your country who work on ozone and climate issues to youth, schools and the public.

Gender mainstreaming is an integral part of OzonAction's own work and activities, and we organized several meetings on this theme in 2023. Please visit our website and learn more about OzonAction's engagement in incorporating and promoting gender into its work, both internally and externally.

In relation to this year's IWD theme, we interviewed nine women who have contributed to the implementation of the Montreal Protocol and the Kigali Amendment to tell us their success stories in environmental protection and leadership. We hope these stories from women in different roles and regions will inspire everyone to fully embrace gender equality. The stories will be published sequentially on the OzonAction website between 8 and 31 March 2024, so stay tuned.

Together as equals, women and men can do more, can do better, and can accelerate progress for the betterment of our environment and planet.

Once again, I wish everyone a Happy International Women's Day and look forward to working with all of you to continue promoting gender equality in the context of the Montreal Protocol and its Kigali Amendment.

James S. Curlin  
Head of OzonAction Branch,  
UNEP Law Division

### [The United Nations Environment Programme \(UNEP\) OzonAction, 26 February 2024](#)

*Image: UNEP OzonAction | Photo by Joel Muniz on Unsplash*

- [Marta Pizano: A trailblazer's path from research to global policy](#)
- [Liazzat Rabbiosi: A Woman Facilitating International Environmental Policy-making](#)
- [Cecilia Mercado: Breaking Barriers-A legacy of environmental leadership and empowerment](#)
- [Sarah Nakanyika: A Woman Leading Cooling Advancement in Zambia](#)
- [Yvette Gauthe Boko: Une femme forte à la tête du Bureau national de l'ozone au Bénin](#)

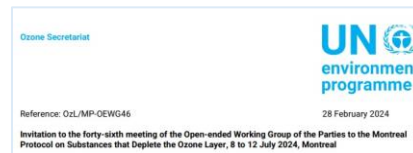
Find more IWD inspiring interviews on OzonAction [website](#)



## ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

See also >>> [International Women's Day 2024, UNEP, Ozone Secretariat](#)

### 3. Forty-sixth meeting of the Open-ended Working Group of the Parties to the Montreal Protocol (OEWG46), 8 to 12 July 2024, Montreal - Letter from the Ozone Secretariat



Dear Sir/Madam,

Please find [attached](#) the invitation for the forty-sixth meeting of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer to be held in Montreal from 8 to 12 July 2024.

Using the exclusive link provided for your delegation, please register your representatives to the meeting as soon as possible.

Please note that Firefox and Chrome are the preferred browsers for the registration system. The step-by-step guide on the system is available [here](#).

The system already contains information on delegates who have attended previous Montreal Protocol meetings. Please update the existing information as necessary. Information will need to be entered for delegates who have not attended past meetings. Please ensure that you provide a valid email address for each of your representatives.

Yours sincerely,

Ozone Secretariat

[UNEP, Ozone Secretariat, 1 March 2024](#)

*Image: Ozone Secretariat*

#### 4. Call for proposals for innovation projects in the Cooling sector

The Climate and Clean Air Coalition (CCAC) has launched a call for proposals seeking solutions to pressing challenges for short-lived climate pollutant mitigation in the cooling sector. This call aims to bridge critical information, implementation, and finance gaps in the sector to create enabling environments for SLCP mitigation. Solutions supported by this call are expected to help sector stakeholders and governments implement and scale up mitigation action in line with the CCAC's [2030 objectives](#).



**The call is open for 8 weeks, closing on 30, April 2024**

- Focus areas in the HFCs/Cooling and more information can be found [here](#)
- Focus areas of other SLCP-emitting sectors can be found [here](#)

[The Climate and Clean Air Coalition \(CCAC\), 4 March 2024](#)

Image: CCAC

#### 5. 'Trust science', Paris mayor tells air conditioning fans

PARIS, March 14 (Reuters) - With competing nations split over whether to enter into the spirit of the "Green Games" or throw money at success whatever the environmental cost, Paris mayor Anne Hidalgo told those nations planning on installing air conditioning at the athletes' village to "trust the science" instead.



Temperatures are expected to soar again in the European summer, after setting records in 2023, but there will be no air conditioning in the athletes' rooms at Paris 2024, which has pledged to host the "greenest ever" Games.

Instead, buildings in the athletes' village have been [designed with a cooling system](#) drawing water from underground, and facades orientated so they get little direct sun.

"This village was designed to avoid the need for air conditioning, even in very, very high temperatures, in order to maintain comfortable temperatures," Hidalgo told Reuters on Wednesday.

With climate scientists warning that global warming has produced more extreme weather patterns in much of the world, organisers of Paris 2024 have said they want to halve the carbon footprint compared with the Rio 2016 and London 2012 Summer Games.

"I think we have to trust science on two counts. The first is what scientists are telling us about the fact that we are on the brink of a precipice. Everyone, including the athletes, must be aware of this," said Hidalgo.

"And secondly, we have to trust the scientists when they help us to construct buildings in a sober way that allows us to make do without air conditioning."

### **NOT ALL COMPETITORS CONVINCED**

Yet, the Olympic Committees from Australia, Brazil, Canada and Norway are among those who believe it will not be enough.

"Our clear wish is that there should be air-conditioning in all rooms," the Norwegian Committee told Reuters, with Brazil saying "the heat forecast" made it "necessary to invest in renting air-conditioning units for the entire delegation".

Australia's Chef de Mission Anna Meares said they were "looking at portable air conditioners to offer the athletes should they choose to if it gets hot, if it's uncomfortable".

The Canadian Olympic Committee told Reuters it had "implemented a number of heat mitigation strategies in Paris to complement the measures put in place by the Paris 2024 Organising Committee, including air conditioning units in some athlete rooms in case of extreme heat".

What matters for Hidalgo, however, is that the athletes' village, which will be home to some 6,000 Parisiens after the Games, is a sustainable project. "But then they do what they want, I'm not going to tell them what to do," she said.

"What matters to me is that these buildings, these flats will become a neighbourhood where people from L'Île-Saint-Denis, Saint-Ouen and Saint-Denis (in the Paris suburbs) will live. These new buildings won't need air conditioning, so we're working for the long term."

Lending support to the organisers' vision, several other delegations have said they fully trust they will not need air conditioning at the Games.

"We have visited the Olympic Village in Paris regularly in the last years and rate the clever cooling system installed in floor and ceiling to be sufficient for the climate zone," the German Olympic Committee told Reuters.

"Additional passive prevention coming with the windows does further add to this. Nevertheless we have asked our federations whether or not they want to rent the extra air conditioning offered by the Paris 2024 rate card system. The vast majority of our federations have judged this to be unnecessary."

[Reuters, 14 March 2024, By Julien Pretot and Elizabeth Pineau](#)

*Image: Paris 2024 website*

## 6. Stratospheric ozone – depletion, recovery and new challenges – Opinion

### Abstract

We summarise current important and well-established open issues related to the depletion of stratospheric ozone and discuss some newly emerging challenges. The ozone layer is recovering from the effects of halogenated source gases due to the continued success of the Montreal Protocol despite recent renewed production of controlled substances and the impact of uncontrolled very short-lived substances. The increasing atmospheric concentrations of greenhouse gases, such as carbon dioxide, methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), have large potential to perturb stratospheric ozone in different ways, but their future evolutions, and hence impacts, are uncertain. Ozone depletion through injection of smoke particles has been observed following recent Australian wildfires. Further perturbations to the ozone layer are currently occurring through the unexpected injection of massive amounts of water vapour from the Hunga Tonga–Hunga Ha’apai volcano in 2022. Open research questions emphasise the critical need to maintain, if not expand, the observational network and to address the impending “satellite data gap” in global, height-resolved observations of stratospheric trace gases and aerosols. We will, in effect, be largely blind to the stratospheric effects of similar wildfire and volcanic events in the near future. Complex Earth system models (ESMs) being developed for climate projections have the stratosphere as an important component. However, the huge computational requirement of these models must not result in an oversimplification of the many processes affecting the ozone layer. Regardless, a hierarchy of simpler process models will continue to be important for testing our evolving understanding of the ozone layer and for providing policy-relevant information.

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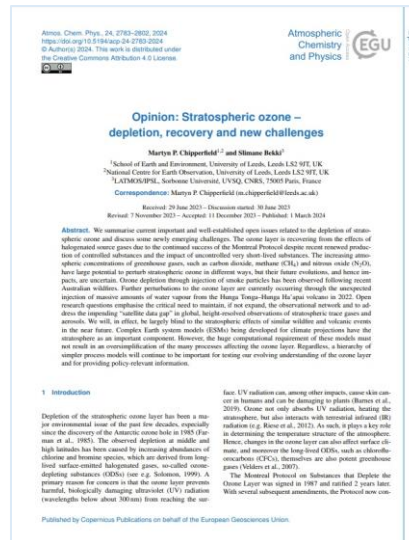
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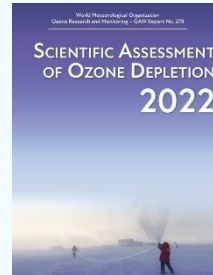
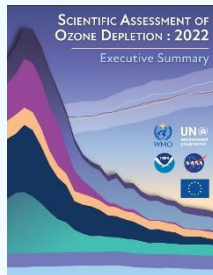
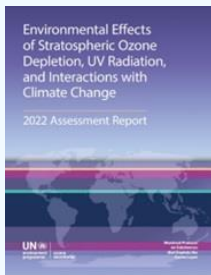
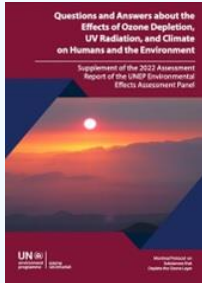
Authors: Martyn P. Chipperfield and Slimane Bekki

Read /Download [full article](#)

[European Geosciences Union, Atmospheric Chemistry and Physics, Volume 24, issue 4](#)

Image: EGU





**[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 will continue promoting the exhibition at all relevant events 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

**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](#)**



**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](#)**



## LATIN AMERICA AND CARIBBEAN

### 7. "The use of natural refrigerants is the most suitable alternative for achieving long-term sustainability" Green Cooling Initiative Cool Talks

For this Cool Talk, we had the opportunity to interview Magna Luduvica, Environmental Analyst with 13 years of experience as Head of the National Ozone Unit (NOU) at the Brazilian Ministry of Environment and Climate Change (MMA). She played a key leadership role in the actions under the Montreal Protocol in Brazil, including the HPMP Project, which represented a direct impact in the ozone layer preservation.



**PLEASE TALK ABOUT YOUR CAREER FROM THE BEGINNING UNTIL YOUR ARRIVAL AT THE BRAZILIAN MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE (MMA).**

In December 1982, I completed my degree in forestry engineering at the University of Brasília – UnB, and in March 1983, I started my professional life at the former Special Secretariat for the Environment (SEMA), under the leadership of Dr. Paulo Nogueira Neto. At that time, I was working with the green agenda, more specifically with the creation and installation of Conservation Units.

Then, from 1986 to 1990 - when there was that boom in engineering companies in the country- I went to the private sector as head of the vegetation section of the Environment Department of the engineering company ENGEVIX S.A., being responsible for the identification and maintenance of vegetation around the Tucuruí Hydroelectric Power Plant in Pará, providing services to Eletronorte.

Subsequently, SEMA, IBDF (Timber), SUDHEVEA (Rubber) and SUDEPE (Fisheries) were merged and became IBAMA. In 1990, I went to IBAMA to work on forest fires in PREVFOGO, where I worked until 1994. Then, I went to the Ministry of the Environment. Until then, I had been working entirely in the forestry area and on the green agenda.

From 1994 to 2005, I worked as a specialist consultant in the National Environment Programme (PNMA), supporting the Brazilian federal states on issues related to river water quality.

In 2005, realising that it was time to have more professional security, I took the first public examination for the position of environmental analyst at the Ministry of the Environment. As I had already worked for many years at the MMA, I was invited to take over the issues related to the protection of the ozone layer, as coordinator.

It was a huge surprise... I accepted the invitation because I really liked the international field and project management. It was a great opportunity, I was aware of the immense challenges I would face as at that time I had only a superficial knowledge of the subject, knowledge acquired from colleagues who worked in the area. It was very difficult at first, but very rewarding for the lessons learnt (the Montreal Protocol targets, the refrigeration sector in Brazil, etc.).

I fell in love with the topic and never wanted to leave. From 2005 to 2018, I coordinated Brazilian actions to protect the ozone layer. I kept my knowledge up to date. From 2019 to 2022, I was part of the technical team. At the beginning of 2023, I retired as I thought it was time to take another direction in life.

**YOU HAVE PLAYED A KEY LEADERSHIP ROLE IN ALL ACTIONS UNDER THE MONTREAL PROTOCOL IN BRAZIL, INCLUDING THE HPMP, WHICH IS CURRENTLY BEING IMPLEMENTED. PLEASE TALK ABOUT THIS PROGRAMME AND THE MAIN INITIATIVES YOU LED DURING YOUR 13 YEARS AS THE HEAD OF THE NATIONAL OZONE UNIT (NOU) AT THE MMA?**

As the phase-out targets for CFCs by developing countries approached completion (scheduled for 2010), the Parties to the Montreal Protocol considered it appropriate to bring forward the same phase-out schedule for HCFCs, which have emerged as alternative substances to CFCs. This was also due to their detrimental effect on the ozone layer and the climate.

In 2007, in celebration of the Protocol's 20th anniversary, the Adjustment to the Protocol was approved, establishing a new HCFC phase-out schedule for developing countries. The

Brazilian delegation actively participated in the discussions related to the adjustment, including presenting, together with Argentina, one of the six proposals for the Adjustment schedule, which led to the final outcome.

At the time, I was part of the Brazilian delegation, in the MMA team, responsible for providing technical support to the Ministry of Foreign Affairs, which led the delegation. The minister of the environment that year was the current minister, Marina Silva.

The Montreal Protocol is supported by the Multilateral Fund for the Implementation of the Montreal Protocol (MLF), to which developed countries provide resources to support developing countries in meeting their targets. At the time, funding was made available, and each country had to design its programme to meet its targets.

Thus, the Brazilian HCFC Phase-out Management Plan (HPMP) was established, with the support of the private sector. Since then, the MMA has coordinated the implementation of the programme, which is being carried out in stages, and IBAMA is responsible for controlling the import and export of these substances, which will generate the country's consumption data, clarifying that consumption is production plus imports, minus exports. This calculation is presented annually to the Secretariat of the Montreal Protocol to control the reduction of consumption, that is, how the country is meeting its targets. The first stage aimed to fulfil the freeze and the first consumption reduction target by 2015 (16.6%); and the second stage was to achieve the targets by 2021 (51.6%).

All the work of implementing the HPMP is supported by GIZ, UNDP and UNIDO. The partnership built over all these years was fundamental to the success achieved by Brazil in meeting the targets set by the Montreal Protocol.

Currently, the third stage is being prepared and will be implemented by 2030, with the commitment to reduce 97.5% of HCFC consumption compared to the baseline (average consumption for the years 2009-2010). Each stage was negotiated by Brazil with the Executive Committee of the Multilateral Fund, and with this we obtained the financial support to fulfil the targets.

**SEVERAL PARTNERSHIPS BETWEEN THE MMA AND THE PRIVATE SECTOR HAVE TAKEN PLACE UNDER YOUR COORDINATION. PLEASE TALK ABOUT THE IMPORTANCE OF THESE PARTNERSHIPS.**

The private sector has always been very engaged in this successful partnership, as Brazil has always anticipated the fulfilment of the goals. The refrigeration and air conditioning sector has followed society's concern with the protection of the ozone layer and the global climate system, contributing to the sustainability of the planet by replacing refrigerants with other materials that are less harmful to the environment.

The use of natural refrigerants, wherever possible, is the most suitable alternative for achieving long-term sustainability. It is the ultimate alternative, while others are intermediate alternatives with low global warming potential.

In this context, labour is a determining factor, because we need a cultural change for better use of flammable refrigerants. The HPMP supports this whole process, including training the workforce in these new technologies. Without skilled labour to make the necessary changes, it is not possible to move forward.

**DURING ALL THESE YEARS WORKING ON PROJECTS FOR THE PROTECTION OF THE OZONE LAYER AND THE CLIMATE, YOU HAVE CERTAINLY BEEN ABLE TO ACCUMULATE AN ENORMOUS WEALTH OF EXPERIENCE. PLEASE NAME ONE OR TWO OF THE MOST REWARDING EXPERIENCES OF YOUR CAREER?**

The experiences I had during all these years, including being able to represent Brazil, as part of the delegation, in many meetings abroad, were enriching and rewarding. In this work, we met many people and exchanged ideas with professionals from all over the world, but especially with those from the delegations of our region, Latin America, and the Caribbean, in which we managed to create a very close-knit group.

The seventeen years in which I participated, together with the Ministry of Foreign Affairs, in all the discussions that resulted in the decisions taken under the Montreal Protocol were truly rewarding, in particular, the approval of the Adjustment that established the new HCFC phase-out schedule and the nine years of negotiation that culminated in the approval of the text of the Kigali Amendment, which included HFCs as substances also controlled by the Protocol. The Amendment was approved in 2016 and it was only in 2022 that we finally achieved Brazil's ratification.

It is also gratifying to note year by year that all the efforts to implement the HPMP, undertaken by the teams of the MMA, IBAMA, implementing agencies (GIZ, UNDP and UNIDO) and the private sector, resulted in a decrease in the consumption of HCFCs, and Brazil has been commendably meeting the targets set by the Montreal Protocol.

**COULD YOU TALK A BIT ABOUT YOUR VISION FOR THE FUTURE OF THE HPMP UNDER NEW LEADERSHIP, IN PARTICULAR ABOUT ACTIONS TO FULFIL THE KIGALI AMENDMENT, WHICH YOU HAVE ALREADY MENTIONED?**

The teams that have been formed over the years at the MMA, IBAMA, GIZ, UNDP and UNIDO are fully capable of moving forward and keeping Brazil in compliance with the targets set by the Montreal Protocol. The successes of this Programme are due to teamwork and partnership towards a common goal.

The Kigali Amendment is the apple of our eye. It was a very rewarding endeavour to build and approve it, especially because of all the concerns about the climate, in which the Montreal Protocol could have a very effective participation. It was a development that took nine years, where the countries (198 Parties) were evolving their positions. With this Amendment, the Montreal Protocol continues its work of addressing consumption at sustainable levels.

In order to meet the Kigali Amendment and reduce the consumption of HFCs, Brazil will forthcoming build a Programme, as was done for CFCs and HCFCs, including the establishment of the baseline. The MMA will coordinate the elaboration and implementation with the usual partners.

**WHY DO YOU PERSONALLY CARE ABOUT ENVIRONMENTAL ISSUES AND WHAT IMPACT DOES YOUR WORK HAVE ON YOUR PERSONAL LIFE?**

From a young age, I identified with environmental issues which culminated in my choice of degree course at university. This interest only increased with time and a deeper understanding of environmental issues. I think I have passed on this love of work, this engagement, and this environmental and social concern to my two daughters, who are

great professionals... And also, to the people in the teams I have worked with. I have the feeling that I managed to pass it on.... that I was able to contribute and teach ...that I have left a legacy....and that gives me a feeling of a mission accomplished!

My professional life has always meant a lot to me. I have always performed with dedication and pleasure in obtaining the best possible results. Carrying out my work with dedication and commitment has always brought me satisfaction and the desire to make a difference wherever I went. When we dedicate ourselves and enjoy what we do, our whole personal universe flows and becomes more balanced.

#### [The Green Cooling Initiative, 4 March 2024](#)

*Image: The Green Cooling Initiative*

## ASIA AND THE PACIFIC

### **8. Competency-Based Certification and KIP Strategy Integration in Pacific Island Countries**



**Rarotonga, Cook Islands, 22 February 2024** – UNEP's OzonAction Asia-Pacific Compliance Assistance Programme (CAP) team organized the Thematic Meeting on Establishment and Implementation of Competency-Based Certification, back-to-back with the Thematic Workshop on Strategy of Stage I of the Kigali HFC Implementation Plan (KIP) and Integration with the HCFC Phase-out Management Plan (HPMP) Stage II among the Pacific Island Countries (PICs). Both meetings were held in Rarotonga, Cook Islands from 7-10 February 2024.

#### **Thematic Meeting on Establishment and Implementation of Competency-Based Certification, 7 – 8 February 2024**

At a previous meeting held in Vanuatu in May 2023, the PIC countries requested UNEP to assist them in enhancing their competency-based assessment approaches including assessment criteria, physical resources, and tools to implement a robust competency-based certification program. Therefore, this meeting delved into the practicalities of

establishing and implementing a competency-based certification program for the Refrigeration and Air-Conditioning (RAC) servicing sector in PICs.

Thirty-eight participants attended the meeting (25 male, 13 female) including, National Ozone Officers (NOOs) and representatives from the RAC industry/qualification authorities of 14 PIC Network countries, resource persons, RAC industry representative(s) from Australia, and UNEP CAP staff.

*"Certification systems play a pivotal role in enhancing the skills of technicians and identifying the required competencies within the trade. They strongly advocate for energy efficiency and the adherence to safe practices during the installation of equipment. These systems are crucial in equipping technicians with the knowledge necessary to adapt to the shift from fluorinated to natural refrigerants, which carries significant considerations for the installation environments of the new equipment." - Mr. Tony Nori, Solomon Islands National University Lecturer.*

The meeting sessions dived deep into establishing a robust competency-based certification program for the RAC servicing sector in PICs. Experts helped analyze existing frameworks, exploring their suitability for different country contexts, particularly for those with and without established vocational training infrastructures for RAC courses.

Key discussions revolved around defining the roles and responsibilities of government authorities and the RAC industry in establishing and conducting competency assessments. To ensure the sustainability of the project, the meeting focused on the mechanisms and experiences of other countries in motivating and potentially mandating RAC technicians to participate in the certification process.

As a result of the meeting, the PICs had a better understanding with a clear roadmap for implementing an effective and sustainable competency-based certification program, ultimately raising the bar for professionalism and quality within the sector at the national level. The outcomes of this meeting serve as a starting point for the PICs to further regionalize the competency-based certification to harmonize skills and qualifications of RAC technicians in the PIC region.

*"Aligning our proposed Good Servicing Practices competency certification with the standards of Australia and New Zealand can enhance regional consistency and service quality in Tonga, as well as streamline the process for our technicians to work across the Pacific countries," said Mr. Aloisio Fifita, National Ozone Officer of Tonga.*

### **The Thematic Workshop on Strategy of Stage I of the KIP and Integration with the HPMP Stage II, 9 – 10 February 2024**

As part of the Regional KIP Preparation initiative for 12 PICs, this thematic workshop brought the key actors together to chart a course for Stage I of the KIP, aiming to leverage data, collaboration, and strategic planning to lay the groundwork for successful preparation of the comprehensive Stage I of the Regional PIC KIP, ensuring effective HFC phase-down in the Pacific region. The focus was built on collaboratively defining the overall strategy and pinpointing key activities that will form the backbone of this implementation stage, considering achievements gained under the HPMP.



The participants assessed the ongoing implementation of Stage II of the HPMP, including existing regional efforts. This evaluation aimed to pave the way for exploring seamless potential linkages between Stage I of the KIP and the ongoing HPMP initiatives, maximizing efficiency and impact across both programs. By fostering open discussion and leveraging regional expertise, this workshop empowered PICs to shape a future-oriented and strategic approach to the KIP's Stage I.

The workshop sessions were designed to address crucial steps in preparing the Regional PIC KIP Stage I. Participants shared and discussed the use of HFC data across different applications, both for individual countries and the region as a whole, in light of establishing regional priorities for phasing down HFCs under Stage I of the KIP. Country-specific needs and challenges were factored into this prioritization process.

The workshop also reviewed the current progress of Stage II of the Regional PIC HPMP. Building on this foundation, participants brainstormed a comprehensive strategy and action plan for both national and regional aspects of Stage I of the KIP, exploring the linkage between Stage I of the KIP with the ongoing Stage II of the HPMP. This aims to streamline implementation and maximize efficiency across both projects.

*"This workshop is critical for the PICs to understand the development process of the Multi-year Agreement project under the Multilateral Fund, which is a country-driven approach. The workshop enabled UNEP to not only know the perspective from the PIC's National Ozone Officers and the RAC industry of overarching strategy and action plans but also harmonize the strategic direction of the Pacific under Stage I of the KIP while ensuring the individual needs of the country." - Mr. Pipat Poopeerasupong, UNEP OzonAction, Asia and Pacific Office.*

UNEP CAP team expressed its sincere gratitude to the Government of Cook Islands for hosting the meetings and the resource partners whose active participation and engagement created an environment of community and knowledge sharing.

The meetings were organized by UNEP OzonAction CAP, Asia and the Pacific Office in partnership with the Government of Australia as part of its approved 2024 Work Programme under the Multilateral Fund.

**Contact:** [Pipat Poopeerasupong](#), Interim Montreal Protocol Regional Coordinator, Southeast Asia, and Pacific Island Countries, UNEP [OzonAction](#) Compliance Assistance Programme (CAP), Asia and Pacific Office

*Image: OzonAction*

**NORTH AMERICA**

## 9. U.S. EPA Announces Final Rule Updating Safety Requirements for Ammonia Refrigeration

The U.S. Environmental Protection Agency (EPA) on March 1 announced finalized amendments to its Risk Management Program (RMP), which includes a host of safety requirements for ammonia (R717) refrigeration, among other industries using hazardous chemicals.



The amendments, encapsulated in the “Safer Communities by Chemical Accident Prevention Rule,” include what the EPA called the “most protective safety provisions for chemical facilities in history, requiring stronger measures for prevention, preparedness, and public transparency.” It is designed “to further protect at-risk communities from chemical accidents, especially those located near facilities in industry sectors with high accident rates.”

“Many communities that are vulnerable to chemical accidents are in overburdened and underserved areas of the country,” said EPA Administrator Michael S. Regan, in a statement. “This final rule is a critical piece of the Biden-Harris Administration’s commitment to advancing environmental justice by putting in place stronger safety requirements for industrial facilities and new measures to protect communities from harm.”

The new rule comes in the wake of the recent checkered history of the RMP, which the EPA introduced in 1996. In January 2017, the “RMP Amendments Final Rule” issued new requirements for prevention, response and public disclosure of information, but key provisions were paused, and most never went into effect. Instead, in 2019, the “RMP Reconsideration Final Rule” rescinded or modified some of the measures in the 2017 rule. The 2019 RMP rule was part of the Trump administration’s efforts to roll back industry regulations.

The new RMP rule closely follows a proposed rule released in August 2022. That proposal prompted a letter to the EPA from five industry trade groups objecting to some of the provisions related to ammonia refrigeration.

Highlights of the new rule include:

- Requiring a safer technologies and alternatives analysis and, in some cases, implementation of reliable safeguard measures for certain facilities in industry sectors with high accident rates.
- Advancing employee participation, training and opportunities for employee decision-making in facility accident prevention.
- Reiterating the allowance of a partial or complete process shutdown in the event of a potential catastrophic release.
- Implementing a process to allow employees and their representatives to anonymously report specific unaddressed hazards.
- Requiring third-party compliance audits and root cause analysis incident investigation for facilities that have had a prior accident.

- Enhancing facility planning and preparedness efforts to strengthen emergency response by ensuring chemical release information is shared in a timely manner with local responders, and a community notification system is in place to warn the community of any impending release.
- Emphasizing the requirement for regulated facilities to evaluate risks of natural hazards and climate change, including any associated loss of power.

The rule will be published alongside a query tool that will allow people to access information for RMPs in nearby communities. More information on the rule is available at the EPA's Risk Management Program rule website.

### **Industry objections**

The five trade groups that signed the 2022 letter critiquing the proposed RMP rule were the American Frozen Food Institute, the Global Cold Chain Alliance, the International Institute of Ammonia (now All-Natural) Refrigeration (IIAR), the North American Meat Institute and the Refrigerating Engineers and Technicians Association.

"IIAR does not agree with many aspects of the rule and believes that the current rules are generally sufficient for our industry," the trade group said in an email to its members that publicly unveiled the EPA letter.

In the letter, the trade groups pointed out that the EPA was enacting rules to phase down the use of HFC refrigerants pursuant to the American Innovation and Manufacturing (AIM) Act, adding their concern that the proposed RMP rule "could dissuade some companies from moving away from HFCs and moving to natural refrigerants like ammonia."

As they had in the past, the ammonia refrigeration trade groups objected strenuously in their letter to the proposed RMP rules regarding the need for third-party audits to be conducted by independent organizations.

"The proposal to restrict which auditors could be used after an accident is concerning," said the trade group letter, adding, "The use of any qualified auditor should be at the discretion of the facility, including those who may be associated with the company, for such audits."

[Ammonia21, 4 March 2024, By Michael Garry](#)

*Image: Ammonia21*

## 10. California Man Arrested For Smuggling Greenhouse Gases Into The US From Mexico

A California man was arrested and charged with smuggling greenhouse gases into the United States from Mexico and then selling them for profit.

This is the first prosecution in the United States to include charges related to the American Innovation and Manufacturing Act of 2020 (AIM Act). The AIM Act prohibits the importation of hydrofluorocarbons (HFCs), commonly used as refrigerants, without allowances issued by the Environmental Protection Agency (EPA).



“It is illegal to import certain refrigerants into the United States because of their documented and significantly greater contribution to climate change,” said Assistant Attorney General Todd Kim of the Justice Department’s Environment and Natural Resources Division. “We are committed to enforcing the AIM Act and other laws that seek to prevent environmental harm.”

“The illegal smuggling of hydrofluorocarbons, a highly potent greenhouse gas, undermines international efforts to combat climate change under the Kigali Amendment to the Montreal Protocol,” said David M. Uhlmann, EPA Assistant Administrator for the Office of Enforcement and Compliance Assurance. “Anyone who seeks to profit from illegal actions that worsen climate change must be held accountable. This arrest highlights the significance of EPA’s climate enforcement initiative and our efforts to prevent refrigerants that are climate super pollutants from illegally entering the United States.”

According to the EPA, HFCs are potent greenhouse gases that cause climate change and are used in applications such as refrigeration, air-conditioning, building insulation, fire extinguishing systems, and aerosols. The global warming potential of an HFC can be hundreds to thousands of times more potent than carbon dioxide. The use of HFCs has been rapidly increasing worldwide due to the global phaseout of ozone-depleting substances and increased demand for refrigeration and air conditioning.

The indictment alleges that Hart purchased refrigerants in Mexico and smuggled them into the United States in his vehicle, concealed under a tarp and tools. According to the indictment, Hart posted the refrigerants for sale on OfferUp, Facebook Marketplace and other sites, and sold them for a profit.

In addition to greenhouse gases, the indictment alleges Hart imported HCFC 22, an ozone-depleting substance regulated under the Clean Air Act.

The Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol) is a treaty adopted in 1987 and ratified by virtually every country. The Montreal Protocol required the gradual phase out of ozone depleting substances, with different timetables for developed countries like the United States and developing countries like Mexico.

In the United States, the Montreal Protocol was implemented in 1990 as an addition to the Clean Air Act, which covers Stratospheric Ozone Protection.

That addition identified HCFC 22 as a regulated ozone-depleting substance. Before 2020, EPA regulations that governed ozone-depleting substances made it illegal for anyone to import a regulated ozone-depleting substance in an amount exceeding that individual's consumption allowance, subject to certain exceptions.

On January 1, 2020, consumption allowances for HCFC 22 were eliminated, and it became illegal to import HCFC 22 for any purpose other than for use in a process resulting in its transformation or destruction.

[The Tampa Free Press \(TFP\), 5 March 2024, By Jake Grissom](#)

*Image: TFP*

## EUROPE & CENTRAL ASIA

### 11. EU parliament passes EPBD update

The European Parliament has voted in favour of the trilogue deal of the Energy Performance of Buildings Directive (EPBD) which seeks to deliver a climate-neutral building stock by 2050.



The update of the EPBD, passed in Strasbourg by 370 votes in favour, 199 against, and 46 abstentions, is seen as a major boost for the adoption of heat pumps and more energy efficient air conditioning and refrigeration.

The EPBD is the main EU-level legal instrument for decarbonising building stock, providing a framework to achieve 2050 targets. It sets minimum energy performance standards in the non-residential sector and commits member states to renovating at least 16% of the worst performing buildings by 2030 and 26% by 2033.

It requires reducing the average primary energy used in residential buildings but without obliging individual homeowners to renovate.

Kadri Simson, the European Commissioner for Energy, said that the agreement presented a good balance between ambition, flexibility, and feasibility.

Speaking before the vote, she said: "With the provisional agreement, we have the right measures to boost the energy performance of the worst-performing buildings, but without obliging individual homeowners to renovate. In the non-residential sector, minimum energy performance standards will trigger the renovation of the worst-performers, where it is most cost-efficient.

"District renovations will promote more energy efficient, liveable, and cohesive housing on a large scale. And innovative, digitalised, and net-zero technologies will be harnessed for

the best results. New buildings will be zero-emission buildings, fit for a climate-neutral future, and solar installations will become the norm for new buildings.”

Russell Patten, director general of the European Partnership for Energy and the Environment (EPEE) hailed the vote as “a huge step” towards decarbonisation of buildings. “It will drive renovation and phase out fossil fuel subsidies,” he said.

“As manufacturers of energy efficient heat pumps, air conditioning and refrigeration equipment, we want to express that our sector is ready to contribute to the decarbonisation of our homes, commercial buildings, hospitals and schools,” Patten added.

[CoolingPost, 12 March 2024](#)

*Image: CoolingPost*

## 12. Naples customs seize “military” HFC shipment

ITALY: Customs officers at the port of Naples report the interception and seizure of 150 tons of HFC refrigerants.

The cylinders were labelled as being for military uses, which is exempt from the European F-gas regulation quotas. Further investigation by the customs officials revealed that the military destination covered only a part of the shipment.

The refrigerant is said to have been seized and the carriers reported.

[CoolingPost, 7 March 2024](#)

*Image: CoolingPost*



## 13. AREA: Women in cooling video competition- 2<sup>nd</sup> 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](mailto:info@area-eur.be) By **Sunday 7<sup>th</sup> of April 2024 at midnight.**

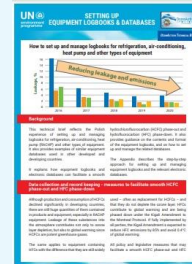
All European languages are welcome. Good luck to our EU women in cooling!

[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](#)**

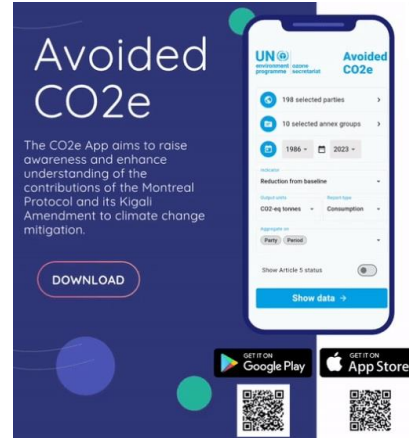


## FEATURED



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

**Avoided CO<sub>2</sub>e** - The CO<sub>2</sub>e App available from the Ozone Secretariat aims to raise awareness and enhance understanding of the contributions of the Montreal Protocol and its Kigali Amendment to climate change mitigation.

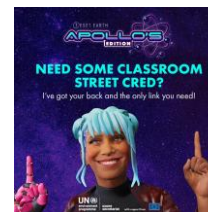


**World Ozone Day 2023 theme: Montreal Protocol: fixing the ozone layer and reducing climate change** - On World Ozone Day, we celebrate the achievements of the Montreal Protocol on Substances that Deplete the Ozone Layer in fixing the ozone layer and reducing climate change. The theme for the 2023 International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



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

**New gaming technology to create environment simulation game for teenagers**-The UN Environment Programme's (UNEP) Ozone Secretariat today launched a simulator game and avatar using the latest software technology. **Apollo's Edition** is the latest addition to the **Reset Earth education platform**. Targeting 13-18-year-olds, the free online education material developed provides educators with resources to teach students the importance of environmental protection.



**Online introductory course 'International legal framework on ozone layer protection'** - Designed for government representatives and national stakeholders new to the Vienna Convention and Montreal Protocol, students of environmental law, and anyone interested in learning about the ozone treaties, the **online course** launched by the Ozone Secretariat aims to provide an introduction to the international legal framework on ozone layer protection.





## Free teaching kits on ozone layer and environmental protection

- New free online teacher toolkits and lesson plans based on the success of UNEP's Ozone Secretariat's [Reset Earth](#) animation and video game
- Targeting Tweens by adopting animation and gamification to create innovative online lessons to raise awareness on ozone layer and environmental protection
- Available online in digital and print format for universal access



Read/download >>> [Ozone Secretariat's education platform](#)

## The UN Environment Assessment Panels

The Assessment Panels have been vital components of ozone protection since the Montreal Protocol was first established. They support parties with scientific, technological and financial information in order to reach decisions about ozone layer protection and they play a critical role in ensuring the Protocol achieves its mandate. The Assessment Panels were first agreed in 1988 to assess various direct and indirect impacts on the ozone layer. The original three panels are:

- [The Technology and Economic Assessment Panel](#)
- [The Scientific Assessment Panel](#)
- [The Environmental Effects Assessment Panel](#)

In the past there were 4 main panels. The Panels for Technology and Economic Assessments were merged in 1990 into one Panel, now called the Technology and Economic Assessment Panel.

**Why are the three current panels important to ozone layer protection?** Each carries out assessment in its respective field. Every four years, the key findings of all panels are consolidated in a synthesis report. [Learn more >>>](#)

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



### **The Multilateral Fund for the Implementation of the Montreal Protocol**

The Fund is dedicated to reversing the deterioration of the Earth's ozone layer. It was established by a decision of the Second Meeting of the Parties to the Montreal Protocol (London, June 1990) and began its operation in 1991. The main objective of the Fund is to assist developing country parties to the Montreal Protocol whose annual level of consumption of the ozone depleting substances (ODS) chlorofluorocarbons (CFCs) and halons is less than 0.3 kilograms per capita to comply with the control measures of the Protocol. Currently, 147 of the 197 Parties to the Montreal Protocol meet these criteria. They are referred to as Article 5 countries.

The Multilateral Fund is managed by an Executive Committee with equal membership from developed and developing countries. Since the inception of the Fund, the Executive Committee has held 93 meetings. The Fund Secretariat, located in Montreal, assists the Executive Committee in its tasks. Projects and activities supported by the Fund are implemented by four international implementing agencies and a few bilateral agencies.

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

As at 8 November 2023, the contributions received by the Multilateral Fund from developed countries, or non-Article 5 countries, totalled over US\$ 4.7 billion. The Fund has also received additional voluntary contributions amounting to US \$25.5 million from a group of donor countries to finance fast-start activities for the implementation of the HFC phase-down.

To facilitate phase-out by Article 5 countries, the Executive Committee has approved 144 country programmes, 144 HCFC phase-out management plans (HPMPs), 24 Kigali HFC implementation plans (KIPs), pilot projects to maintain and/or enhance energy efficiency in the context of HFC phase-down, and has funded the establishment and the operating costs of ozone offices in 145 Article 5 countries.

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

- Guide for funding requests for preparation of national inventories of banks of used or unwanted controlled substances and a plan for the collection, transport and disposal of such substances [>>>](#)

- Updated interim guide for the presentation of stage I of Kigali HFC implementation plans (July 2023) >>>
- Updated guide for the presentation of new stages of HCFC phase-out management plans (July 2023) >>>

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

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



**[OzonAction Compliance Assistance Programme](#)** produces and outreaches a wide variety of information and capacity building materials and tools that support the implementation of the Montreal Protocol programs and assist Article-5 countries in meeting the compliance targets. These include publications, technology briefs and factsheets, mobile applications, videos, e-Learning, modelling and database programs and special educational or certification programs.

**The section below features several of our most recent products.**

**Visit [OzonAction website](#) for more information, discover the entire range of products.**

*Images in this section are by OzonAction*

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



[Every Action Counts: Kigali Amendment - UNEP 2022](#) - This brochure targets the general public and explains in a simplified manner what the Montreal Protocol and its Kigali Amendment signify. It includes some actions that everybody can do to support the Kigali Amendment. It also covers the relationship between the Kigali Amendment and Sustainable Development Goals. It introduces some examples of successful communication campaigns on the Kigali Amendment. [English](#) / [Spanish](#)



[Gender Mainstreaming in the Montreal Protocol: Experiences in Latin America and the Caribbean](#) - Taking into account that women and girls constitute half of the world's population and, therefore, represent half of the potential and innovation necessary to face the "triple planetary crisis" – climate change, nature and biodiversity loss, pollution and waste –, positioning people and the planet as central pillars of the transformation necessary to overcome it, and considering the guiding principles and the scopes of action of the Operational Policy on Gender Mainstreaming of the Multilateral Fund, the United Nations Environment Programme (Latin America and the Caribbean Office). [English](#) / [Spanish](#)



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



**Local Technical & Vocational Education and Training (TVET):** This Knowledge Map provides a global directory of TVET entities and centres around the world. These are the strategic partners for conducting and promoting training and certification programmes related to the refrigeration servicing sector.

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

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

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

**Content of Gas Cards** - Each Gas Card is printable (in PDF or image format) and includes the following information about each substance/gas: a) General Characteristics (Chemical name, formula and type, ASHRAE designation, Trade names, Harmonized System (HS) codes, Chemical Abstract Service (CAS), United Nations (UN) numbers, Blend/ mixture components, Montreal Protocol Annex and Control measures, main usage, etc.) b) Gas Performance—Radar Chart (in terms of: Ozone depleting potential-ODP, Global warming potential-GWP, Toxicity Class & Flammability Class) c) Environmental and Safety Impact, and Safety Impact (with visualization of Toxicity & Flammability Class, Hazardous



Symbols).

**More Information** - The Gas Card web based tool is part of UNEP OzonAction's portfolio of activities and tools to assist various stakeholders in developing countries, including customs officers and technicians, to achieve and maintain compliance with the Montreal Protocol on Substances that Deplete the Ozone Layer. In the left navigation bar of the Gas Card tool web page, you will find a list of commonly used HFCs and HFC Blends in different sectors. \*

### Using the Gas Card web-based tool

- The Gas Card tool is available online on the [OzonAction website](#)
- Read the full [2021 annual iPIC report](#)
- See the [flyer](#) introducing the new iPIC platform

\* Based on the Overall Analysis of the Results of the Survey of ODS Alternatives Report (conducted in 119 countries from 2012 to 2015)



**HCFC Quota and Licence Tracker** - a new desktop application to assist with HCFC licences and quotas - National Ozone Officers have the great responsibility of managing the allocation and monitoring of quotas for substances controlled under the Montreal Protocol. This process can be complex with many

importers, especially if the country imports a range of different hydrochlorofluorocarbons (HCFCs) and mixtures containing HCFCs. To address this challenge, OzonAction developed a new desktop application that helps Ozone Officers with the tasks of planning, calculating, monitoring and managing consumption quotas and licences. It can be used on a daily basis to track and manage the current year's quota allocations for different importers, or for future planning by trying different scenarios that adjust the type of substances imported, their quantity, or the number of importers. The HCFC Quota and Licence Tracker allows Ozone Officers to see the effect of such scenarios on the national HCFC consumption and helps ensure that the quotas stay within agreed HCFC Phase-out Management Plan (HPMP) targets. For countries that have ratified the Kigali Amendment, in the future OzonAction will extend the tracker to include hydrofluorocarbons (HFCs) once countries begin designing their quota systems for those controlled substances. **Access the:**

- [HCFC Quota tracker app](#)
- [Flyer for more information on the tracker](#)
- [Short video tutorial on the OzonAction YouTube Channel](#)

**GWP-ODP Calculator Application - Updated- "Quickly, efficiently and accurately convert between values in metric tonnes, ODP tonnes and CO<sub>2</sub>-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<sub>2</sub>-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<sub>2</sub>-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 OzonAction [website](#)



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

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

### Updated OzonAction "WhatGas?" Mobile App

The OzonAction 'WhatGas?' application is an information and identification tool for refrigerant gases: ozone depleting substances (ODS), HFCs and other alternatives. It is intended to provide some stakeholders, including Montreal Protocol National Ozone Officers, customs officers, and refrigeration and air-conditioning technicians with a modern, easy-to-use tool that can be accessed via mobile devices or the OzonAction website to facilitate work in the field, when dealing with or inspecting ODS and alternatives, and as a useful reference tool.



This latest release includes the 2022 Harmonized System (HS) Codes for HFCs and blends, which facilitates the process of inspection and identification of controlled and alternative substances.

Scan the QR code to download the app (*currently available for Android devices only*). If you've already downloaded the app, to update visit the [Google Play Store](#)

### RAC Technician Videos - Full length films!-Two 'full length' videos for refrigeration and air-conditioning (RAC) sector servicing technicians: on 1) Techniques, Safety and Best Practice and 2) Flammable Refrigerant Safety.

The OzonAction Refrigeration and Air-Conditioning Technician Video Series consists of instructional videos on techniques, security and best practice and flammable refrigerant safety. They are intended to serve as a complementary training tool RAC sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training. The videos are not intended to replace structured formal technician training, but to supplement and provide some revision of tips and skills and to build on training already undertaken.



These videos are based on the successful UNEP OzonAction smartphone application, the RAC Technician Video Series app. This application has been downloaded on more than **86,000** devices since its launch.

Following many requests to make the videos more versatile and better suited to classroom and training settings, OzonAction has responded to this demand and produced two 'full-length' instructional videos.

You may wish to share this message and the flyer with:

- Your national/regional RAC associations
- Training or vocational institutes
- Master RAC trainers in your country
- Any other interested national stakeholders



You can watch these videos on the OzonAction YouTube Channel:

- [Techniques, Safety and Best Practice](#)
- [Flammable Refrigerant Safety](#)

↓ The videos are also available for download by request from UNEP OzonAction:  
[unep-ozonaction@un.org](mailto:unep-ozonaction@un.org)



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

The flyer is available from the [OzonAction website](#).

[OzonAction’s iPIC platform - Updated](#) Collaboration between China and Thailand using OzonAction’s informal Prior Informed Consent (iPIC) system has resulted in the prevention of a huge consignment of ozone-depleting and climate damaging hydrochlorofluorocarbons (HCFCs). Those chemicals, which are primarily used as refrigerants for air conditioners and fridges, are controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer and are being phased out by all countries according to a specific timeline.



[Women in the refrigeration and air-conditioning industry: Personal experiences and achievements](#) The United Nations Environment Programme’s (UNEP), OzonAction, in cooperation with UN Women, has compiled this booklet to raise awareness of the opportunities available to women and to highlight the particular experiences and examples of women working in the sector and to recognise their successes. All of the professionals presented in the booklet are pioneers. They are role models whose stories should inspire a new generation of young women to enter the weld and follow in their footsteps. **Read/download the [publication](#)**



As part of IIR and UNEP OzonAction’s partnership, a set of Cold Chain Technology Briefs was released over the past few years, which includes in-depth summaries about the cold chain in different key sectors. They include descriptions of technology, refrigerant options and trends and conclude with prospects and challenges. They cover the main cold chain sub-sectors, i.e., [Production & Processing](#), [Cold Storage](#), [Transport Refrigeration](#), [Commercial & Domestic](#), and [Fishing Vessels](#). **Download the Cold Chain Technology brief in [English](#) | [French](#) | [Russian](#) | [Spanish](#)**

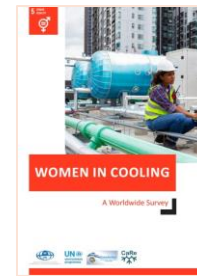


## PUBLICATIONS



### [Results of a Worldwide Survey about Women in Cooling Released by IIR and UNEP OzonAction](#)

Refrigeration, Air-Conditioning, and Heat-pumps (RACHP) are crucial for our health, nutrition, comfort, and well-being. It is one of the sectors that crosscuts many of the UN sustainable development goals and can contribute significantly to safeguard the environment, advance welfare of humanity and support the growth of employment and economics worldwide. Women are highly under-represented in this sector as indicated by the fact that only 6% of the members of national refrigeration associations/organisations/institutions are women. In order to better understand the background, motivation, challenges, and opportunities faced by women working in RACHP a worldwide survey was undertaken by the International Institute of Refrigeration (IIR) and OzonAction of UN Environment Programme (UNEP) in cooperation with several partners. **Read/Download the Full Report**

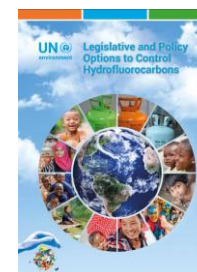


### [Sustainable Food Cold Chains: Opportunities, Challenges and the Way Forward](#)

This [UNEP-FAO] report explores how food cold chain development can become more sustainable and makes a series of important recommendations. These include governments and other cold chain stakeholders collaborating to adopt a systems approach and develop National Cooling Action Plans, backing plans with financing and targets, implementing, and enforcing ambitious minimum efficiency standards. At a time when the international community must act to meet the Sustainable Development Goals, sustainable food cold chains can make an important difference.



**Legislative and Policy Options to Control Hydrofluorocarbons** - In order to follow and facilitate the HFC phase-down schedules contained in the Kigali Amendment, the Parties, including both developed and developing countries, will have to implement certain measures. This booklet contains a recommended set of legislative and policy options which the developing (Article 5) countries may wish to consider for implementation. It is intended to be a guide/tool for countries. **Read/download**



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



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.

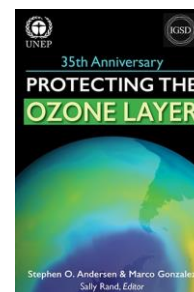
The e-book, titled "[7 Keys to a Compliant PSM Training Program for Ammonia Refrigeration](#)," outlines important questions a facility's program should address and questions that trained plant personnel should be able to answer. Topics covered include:

- 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 - 35<sup>th</sup> Anniversary Edition](#) - a new book celebrating the 35<sup>th</sup> 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<sub>2</sub>O), feedstock exemptions for plastics production, and dumping of obsolete cooling appliances.

[The book was released at 34<sup>th</sup> Meeting of the Parties to the Montreal Protocol on 31 October 2022.](#)



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