Volume XXIV | 30 January 2024

In this issue:

GLOBAL

1. Kigali Amendment latest ratifications

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

[Guatemala, 11 January 2024]
[Belize, 3 October 2023]

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

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

United Nations Treaty Collection
Image: UN Treaty Collection website

2. Decisions adopted by the Thirty-Fifth Meeting of the Parties to the Montreal Protocol - Letter from the Ozone Secretariat Executive Secretary

The Ozone Secretariat is pleased to transmit a letter from Ms. Megumi Seki Nakamura, Executive Secretary, on decisions adopted by the Thirty-Fifth Meeting of the Parties to the Montreal Protocol:

In total, the parties adopted 27 decisions, the final versions of which can be found in the [addendum to the meeting report], which is available on the Ozone Secretariat website.

Some of the decisions adopted at the meeting require specific action by all the parties or by groups of parties. This letter summarizes those actions for your kind consideration and follow-up.

Information on specific decisions or relevant parts of those decisions that require action by individual parties – for example, on Article 7 data reporting and the establishment of licensing systems under Article 4b, paragraph 2 bis – have been communicated in separate letters to the parties concerned.

The Secretariat has also communicated to the secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol, for the attention of the Executive Committee, and to the assessment panels, the respective decisions or paragraphs of the decisions that require their action or attention.

Read Download the full [letter]

[UNEP Ozone Secretariat, 24 January 2024]
Image: UNEP Ozone Secretariat website

3. COP28 Reflections - Cooling for Climate Action: Ministers' Cool Soundbites

As the planet continues to warm up, the need for more cooling will increase exponentially. But this additional cooling cannot come at the expense of the environment. Energy efficient and sustainable cooling is therefore critical to help keep the planet cool and avoid future emissions.

The **Montreal Protocol: Advancing Climate Action** in conjunction with the Cool Coalition and Climate Clean Air Coalition hosted a select group of country representatives at Ministerial and senior leadership level at a high-level event on 8 December 2023 and provide their "soundbites" on how their governments are taking action to phase down climate warming hydrofluorocarbons (HFCs) and increase the adoption of energy efficient cooling technologies under the Montreal Protocol's Kigali Amendment, and deliver on commitments under the Global Cooling Pledge.

Opening the session, **Ms. Inger Andersen, Executive Director of the United Nations Environment Programme (UNEP)**, called on countries to deliver on effective energy efficiency and cooling noting that doing so could **cut emissions by over 60% by 2050** according to UNEP's recently launched Global Cooling Watch Report.

In her keynote speech, **H.E. Mariam Almheiri, Minister of Climate Change and Environment, United Arab Emirates** emphasized the many opportunities for cooling, as the transition to cooling not only reduces emissions but also brings tremendous economic benefits. Highlighting the importance of global cooperation to addressing climate change and advancing sustainable cooling practices globally through **long-term low global warming impact energy efficiency improvement projects** she reconfirmed the UAE's intention to ratify the **Kigali Amendment**.

Mr. Adalberto Maluf, National Secretary for the Environment, Air and Environmental Quality of the Ministry of the Environment and Climate Change, Brazil: Having experienced significant impacts from extreme weather events, **Brazil is committed to taking action to reduce greenhouse gases**, implementing measures such as reforestation to meet this commitment. Moreover, the Brazilian government has outlined specific steps to phase down HFCs, pursuing mitigation and adaptation plans and has created the Green City Brazil programme.

H.E. Pheav Sovuthy, Environmental Ministry's Under Secretary of State, Cambodia: Cambodia's **National Cooling Action Plan plays a crucial role in identifying comprehensive measures to improve energy efficiency, meet regional energy demand and reduce emissions in the cooling sector.** It also supports Cambodia's long-term development by promoting a sustainable, clean, green and low-carbon society through the adoption of climate-friendly and energy-efficient technologies in the cooling system, reducing greenhouse gas emissions, improving living conditions, enhanced vaccine and food storage, and reduced energy costs.

H.E. Andrew Yatilman, Secretary, Department of Environment, Climate Chang and Emergency Management, Federated States of Micronesia: The Federated States of Micronesia was the **first to propose the phase-down of HFCs including corresponding regulations as well as regulation of HFC imports** and training of customs officials, training of technicians to promote correct equipment installation and engaging with the private sector.

H.E. Yutaka Matsuzawa, Vice Minister for Global Environmental Affairs, Japan: The Kigali Amendment has forged a connection between the climate community and the Montreal community. Since ratifying the Amendment five years ago, Japanese companies develop and supply natural refrigerants with the government introducing a subsidy system to promote refrigerators with natural refrigerants. Currently, **43% of refrigeration warehouses in Japan use natural refrigerants - a concrete outcome following the ratification of the Kigali Amendment**.

H.E. Thoriq Ibrahim, Minister of Climate Change, Environment and Energy, Maldives: The government of Maldives is applying the experiences gained from the process of phasing out ozone-depleting chlorofluorocarbons (CFCs) to the ongoing phase-down of HFCs while also conducting training for border officials to stop illegal trade of prohibited chemicals and technicians specializing in refrigeration and air-conditioning. Additionally, to enhance energy efficiency in cooling, the Government of Maldives is focusing on cold services for buildings and designing more buildings utilizing passive cooling methods.

H.R.H. Prince Jaime de Bourbon de Parme, Climate Envoy, Royal Kingdom of the Netherlands: the **cooling pledge is a marriage between Paris Agreement and the Montreal Protocol.** By addressing potent greenhouse gases and simultaneously focusing on energy efficiency, we could achieve a double gain in mitigating climate change. Moreover, it is important to encourage more countries to join the pledge. The Dutch government is committed to working together at the multilateral level and to helping other nations to adapt and implement similar initiatives.

Mr. Rick Duke, Deputy Special Envoy for Climate, United States of America: The US is actively collaborating with partners to facilitate the implementation of the Kigali Amendment, helping secure nearly a billion dollars in three-year funding to fully support governments in implementing the Amendment. Moreover, the **US is in favour of the potential inclusion of cooling efficiency in the allocation of the funding in tandem with HFC transitions.**

Key takeaways:

- Kigali Amendment links the Montreal Protocol to climate.

- Lessons learned from phasing out CFCs and HCFCs can be applied to the ongoing HFCs phase-down.
- An integrated approach should be deployed in addressing HFC phase down and implementation of the Kigali Amendment. Measures such as enacting phase-down regulations and monitoring the import of HFCs, training technicians specialized in the installation and maintenance of cooling equipment with HFCs alternatives, collaborating with Customs officers, and engaging with the private sector are important.
- The establishment of building codes and the design of new buildings with more passive cooling features will help to improve the energy efficiency of cooling in buildings.
- Need for market creation and subsidies for companies developing and applying natural refrigerants to increase awareness to promote the switch to new refrigerants.
- Provision of funding to support implementing the Kigali Amendment in full, i.e. HFC transition in tandem with adoption of cooling initiatives.
- The Global Cooling Pledge is a marriage between the Paris Agreement and the Montreal Protocol. By addressing potent greenhouse gases and focusing on energy efficiency at the same time, we could achieve double gains in climate change mitigation.
- The Global Cooling Pledge addresses both the adaptation and mitigation benefits of cooling. The priority for adaptation and mitigation is to provide affordable, climate-friendly cooling solutions on a broad scale. There is an urgent need to provide the necessary cooling solutions as well.
- Joining the Global Cooling Pledge will motivate countries to take further action in the cooling sector and support the work of the Montreal Protocol. It is also cost-effective and offers a range of benefits, including mitigation and adaptation, economic and health benefits.
- Mitigation plans, adaptation plans, and the National Cooling Action Plan are useful tools for countries to reduce greenhouse gas emissions, improve energy efficiency and climate-friendly approaches to cooling and significantly increase access to sustainable cooling.
- Inter-ministerial cooperation is necessary to promote low-carbon technologies in cities, buildings, and new construction in the country.
- International cooperation on climate change, energy efficiency and sustainable cooling is essential. More countries are expected to ratify the Kigali Amendment.

UN Environment Programme, Ozone Secretariat, 12 January 2024

Image: UNEP Ozone Secretariat

4. Energy transition in hot and arid countries

Countries in hot and arid regions face substantial and unique challenges from global warming. Most climate models predict that they will experience comparatively greater increases in average temperatures, increasing the need for cooling - an essential requirement even today in many of these countries in order to make human habitability possible during several months of the year. In parallel, hotter climates increase evaporation, which will in turn reduce water availability, a compounding challenge

considering that many arid coastal countries rely on desalination to meet their water needs.

The increased demand for cooling and desalination requires more energy, thus making energy transition in hot and arid countries a pressing matter if we are to keep to the Paris Agreement objectives, which aim to keep global temperature rise below 1.5 degrees Celsius this century. And the recent 'UAE Consensus' reached at COP28 reinforces the need for, and international commitment to, energy transition as a primary contributor to the fight against climate change.

The good news is that technologies exist today that can take advantage of the natural environment to increase energy production, reduce reliance on fossil fuels, and contribute to addressing these challenges.

Solar energy is the place to start. Because of the availability of solar radiation, the greatest photovoltaic potential globally exists in countries near the equator, which is precisely where average temperatures are highest, and sunlight is one of the most abundant resources. The price of photovoltaic electricity has come down by orders of magnitude in the last two decades, turning it into the cheapest form of energy under most circumstances. Therefore, rapidly deploying solar energy is the way to go for most hot and arid countries. Technologies and know-how already exist and thus, it is a matter of accelerating the policy frameworks conducive to increasing its adoption by lowering economic barriers and allowing the private sector to invest at scale. Smart grids are a complementary measure to boost energy efficiency, as they enable better management of energy resources, reduce transmission losses, and enhance the integration of renewable sources into existing electricity grids. They can also help manage the intermittency inherent to solar energy, as well as optimize the use of batteries for storage. On the downside, high temperatures affect the performance of traditional batteries, but thanks to advancements in energy storage technologies, including lithium-ion batteries and thermal energy storage, these challenges are being addressed successfully.

District cooling is another important approach to reduce energy use. District cooling is defined as a centralized cooling system that provides chilled water (and therefore air conditioning) to multiple buildings (referred to as "a district"). This system is a much more energy-efficient alternative to traditional individual air conditioning units. On average and depending upon specific circumstances, district cooling reduces energy use for cooling by about one third.

In addition to these technological fixes, community action is also critical. Policy incentives to enhance community involvement are usually based on proper energy pricing, so that individual decisions can make a difference in the aggregate. Some individual actions include simple things like turning lights off when not in use, and saving water by not letting it run unnecessarily, especially if it comes from desalination sources. Another measure is to avoid unnecessary cooling rooms in the home or workplace that are not in use.

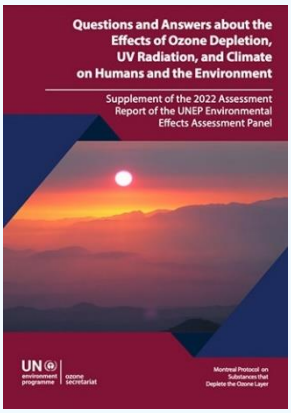
Not all solutions, however, rely on technology alone. There are numerous traditional approaches that have been used in the past and that are still applicable today. For example, planning the position of buildings to avoid direct sunlight at certain times of the day, maximizing the flow of wind to cool them down, and using appropriate materials and colors to reflect sunlight. Examples already exist that combine these approaches, like Msheireb ("a place to drink water" in Arabic), in central Doha. This is a relatively new re-development project where streets are oriented to capture cool breezes from the sea and shade pedestrian routes from the sun; buildings are positioned to shade one another and are light-colored to reduce the need for cooling; and eco-friendly building materials are used, as well as thicker walls and heat-insulating glass. In addition, solar energy is captured

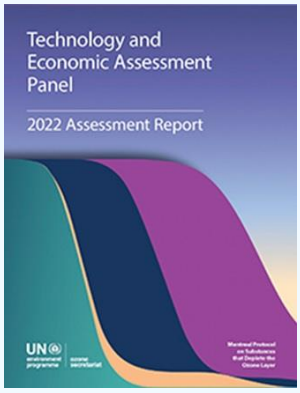
through photovoltaic panels and solar hot water panels to provide hot water. Cooling is provided by central district cooling, and the use of recycled water provides 70% of total consumption. Landscape makes use of native species, better adapted to the local environment, thus requiring less water. Finally, transport within the city can be achieved by walking or by the use of an electric tram.

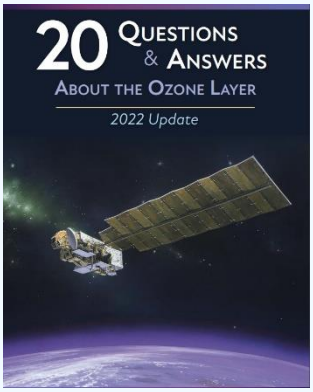
In conclusion, hot and arid countries face unique challenges because of global warming, but solutions exist today that can help them adapt and reduce greenhouse gas emissions, in the context of the required global energy transition to achieve the Paris Agreement goals.

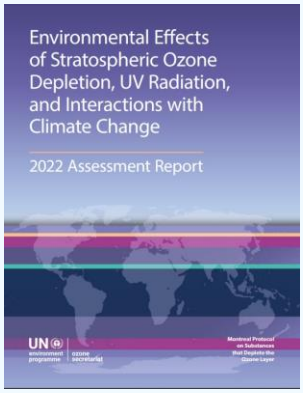
The Peninsula, 24 January 2024, Opinion by: Dr. Gonzalo Castro de la Mata, Executive Director of Earthna Center for a Sustainable Future

Image: The Peninsula website









[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 hydrochlorofluoro-carbons (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.

Click [here] for more information / submit a nomination >>>
Image: Sustainable cold chains website

AFRICA

5. Regional NOU Officers Negotiation Training held in Nairobi

The Green Cooling Initiative and the Ministry of Environment and Forestry of Kenya organized a two-day regional negotiation training on strengthening negotiation skills for the international context for the National Ozone Officers of GCI partner countries in October 2023 in Nairobi.

© GIZ, Juliet Cheruto Ngeiywa

The Green Cooling Initiative(opens in a new window) (GCI) of the GIZ, which is funded by the Federal Ministry of Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) and Internationale Klimaschutz Initiative(opens in a new window) (IKI) supports partner countries in implementing provisions from the Montreal Protocol (MP) including the Kigali Amendment and other international conventions such as the UNFCCC. In this context, GCI and Ministry of Environment and Forestry of Kenya organized a two-day regional negotiation training on strengthening negotiation skills for the international context for the National Ozone Officers of GCI partner countries. The training took place in October 2023 in Nairobi. 21 participants, mainly NOU officers from different African countries, participated and learned about different strategies, synergies, and alliances. The training took place immediately before the 35th Meeting of the Parties to the Montreal Protocol (MOP35) and prepared the participants for the upcoming negotiations. MOP35 is the event where Parties keep track of the activities regarding the implementation of the phase-down and phase-out of HCFCs and HFCs, substances that harm the ozone layer and contribute to global warming.

The training contributed to GCI's mandate to empower developing and emerging economies to actively participate in international negotiations and table their demands. To this end, the training's core objective was to strengthen the negotiation capacity of delegates from GCI partner countries to actively participate in negotiations held under the MP, both at individual level (skills) and at organizational level (team capacity of the delegation).

Therefore, the training agenda included theoretical and practical exercises to better incorporate the concepts studied. Topics overviewed included the psychology of negotiations, styles and strategies, engagement with multiple parties or interests, team organization, and effective negotiation planning. Participants were given the opportunity to reflect on their negotiation skills and strategies, while also fostering their knowledge in this topic. This approach resulted in an improved capacity of NOU officers, who are now capable of a better agency and the ability to put their interests forward. The participants expressed their appreciation for the activity organized, as it was regarded as a fruitful event.

The Green Cooling Initiative (GCI), 11 January 2024

Images: GCI

Vanuatu's Case Study on Integrating ODS/HFC Module into the National Single Window System - The National Single Window is a centralized system that links all relevant government approving authorities and acts as a 'one-stop-shop' where importers and exporters may submit applications electronically including information and all required paperwork to support the application and approval process. **Read/Download the Factsheet >>> UN Environment Programme, OzonAction, July 2023**

Recognition of Prior Learning Scheme for Refrigeration and Air-Conditioning Servicing Technicians in Mongolia - The Recognition of Prior Learning (RPL) process can help those in the industry acquire a formal qualification that matches their knowledge and skills and thereby contributes to improving their employability, mobility, and lifelong learning. RPL can make a significant contribution to providing the relevant learning framework necessary for the present and ongoing maintenance of a quality workforce, especially in the RAC servicing sector. In Mongolia, the RPL process has been rolled out in over 30 TVET trades in the construction, mining, and other sectors, including apparel and culinary etc. Mongolia initiated the RPL scheme for RAC servicing technicians as part of their implementation of the HPMP in cooperation with various national stakeholders. **Read/ Download the Factsheet >>> UN Environment Programme, OzonAction, July 2023**

ASIA AND THE PACIFIC

6. China's plan to address fluorochemical emissions might be promising

Man-made fluorochemicals include gases that deplete the ozone layer as well as some of the most potent greenhouse gases known to man. These chemicals are produced only in a handful of countries, with China and the United States making up the lion's share. China is the world's largest producer and exporter of hydrofluorocarbons (HFCs), accounting for more than 70 percent of all global HFC production, more than half of which is exported.

Earlier this month, a decree by China's State Council announced a revision to the rules governing China's management of ozone-depleting substances. Effective March 1, there will be new controls aimed at emissions from industrial facilities producing fluorochemicals, including both ozone-depleting substances and hydrofluorocarbons, which are potent greenhouse gases.

The rules mandate safe disposal of substances produced incidentally during manufacturing and require entities producing or using substantial amounts of such substances to install automatic monitoring equipment linked to the monitoring network of the environmental authority. These revised rules also introduce severe penalties for illegal acts related to these substances. Any facility found in violation of the rules would be subject to significant fines and confiscation of illegal materials and may have production suspended for failing to install and properly operate monitoring equipment.

These updates are in line with the Kigali Amendment to the Montreal Protocol, which China ratified in 2021, formally committing to a global effort on reducing production and use of HFCs. However, the requirements for automatic monitoring and broad emission controls

in production facilities are a significant step beyond what is required under the global treaty.

This action appears to be a response to recent findings that show such production facilities within China are the likely source of significant unexplained emissions that continue to plague the Montreal Protocol.

The Montreal Protocol, considered a successful international environmental treaty, has played a crucial role in environmental protection for over 35 years by phasing out over 99 percent of ozone-depleting substances, also slowing global warming as these gases also have high climate impact.

Despite this success, recent reports indicate unexpected and significant ongoing emissions linked to unregulated fluorochemical industrial processes. These unexpected emissions have included illegal production and use of a potent banned ozone-depleter, CFC-11, plus rising emissions of several other chlorofluorocarbons used only in production processes to make other fluorocarbon gases and record high emissions of a potent manufacturing byproduct HFC-23, among others. This raises significant concerns about the need to address gaps and loopholes to secure the ozone layer's recovery and enhance the treaty's contribution to addressing climate change.

In 2018, scientists reported unexpected CFC-11 emissions and EIA **investigations** traced the source to illegal production and use of CFC-11 in the polyurethane foam sector in China. A nationwide enforcement effort in China quickly followed, resulting in a sharp decrease in emissions, but not before causing five years of massive climate and ozone depletion.

However, recent atmospheric observations indicate broader unreported fluorochemical greenhouse gas emissions. Some of these emissions are from illegal production and use of CFC-11, but the primary ongoing sources appear to be emissions of feedstocks, byproducts and intermediates in fluorochemical production processes, which are not fully controlled by the Montreal Protocol.

EIA estimates that these avoidable fluorochemical GHG emissions from production processes are as high as about half a billion tons of carbon dioxide equivalent per year. The Kigali Amendment also required parties to destroy or otherwise eliminate all HFC-23 emissions, "to the extent practicable," but global studies show a continued mismatch between observed and reported HFC-23 emissions.

Last year, we used **cutting-edge infrared detection equipment to uncover fluorochemical companies in the U.S.** emitting unknown or unreported HFCs and other gases. This pointed to the urgent need for better monitoring, reporting, and enforcement to prevent these emissions.

Despite the success of the Montreal Protocol in phasing out ozone-depleting substances, emissions from fluorochemical production processes have been overlooked and unregulated for too long, presenting a significant and avoidable opportunity for cost-effective mitigation. After years of campaigning, the last meeting of parties to the Montreal Protocol made some crucial decisions that brought attention to this problem, which could potentially generate new data for re-evaluating exemptions from production and consumption controls.

The announcement by China for direct monitoring of emissions could be a significant step in that direction. Emissions reductions have yet to be reported from China, and it remains

to be seen if this regulatory revision leads to tangible results, especially in lowering emissions of HFC-23, whose climate impact is 12,000 times that of carbon dioxide.

But this new revision, along with additional atmospheric data, could help resolve some of the open questions on how much of the record global HFC-23 emissions are coming from Chinese facilities versus other sources. If the Chinese government decides to share this data with the global community, that would be a massive act of leadership by China toward improving transparency and enforcement of emissions controls globally.

The Hill, 28 January 2024, By Avipsa Mahapatra and Christina Starr

Image: The Hill / Getty Images

WEST ASIA

7. COP28 will be a turning point in the long journey of the climate work - An interview with UNEP's Montreal Protocol Regional Coordinator, West Asia

Eng. Khaled Klaly, Montreal Protocol Regional Coordinator, West Asia, UNEP, discusses the expectations for COP28, opportunities and challenges facing countries in the Middle East in the fight to limit global warming, and the critical role of the RAC sector.

What are your expectations from COP28?

The expectations are very high that COP 28 will be a turning point in the long journey of the climate work, and all are optimistic that the proactive diplomacy and weight of UAE will result in a historical breakthrough, including realising the desired required plans and funding to help achieve the global warming limit to 1.5 degrees C. The hope to see remarkable pledges to fill in the Loss and Damage Fund is very high, as is regarding the energy transition. Concerning the Montreal Protocol community, I'm hopeful to see wide interest from nations to join the Global Cooling Pledge.

How far are we in the fight to limit global warming to 1.5 or, at least, 2 degrees?

It is a very challenging target due to the tough decisions to be made in terms of the technology shift and funding required. Hence, it is not too late, and COP 28 is, maybe, the hope to win this fight.

What are the biggest challenges for the Middle East in this context?

It is mostly the socioeconomic challenges associated with the desired energy shifting. The region has some big economies and less fortunate ones, and therefore, the needs are different for meeting the target. Also, the required support for the mitigation and adaptation work varies from one country to another.

Which countries in this region have yet to ratify the Kigali Amendment, and what is the hold-up?

So far, only three countries have ratified the Kigali Amendment, and there is big hope that the rest will join in during this COP or, at the latest, in early 2024.

Rising temperatures will increase the need for cooling, which increases greenhouse gas emissions, a vicious cycle. Do you see any way to disrupt this cycle?

That's right. We have, as the Montreal Protocol community, realised that, and it is no secret that the Montreal Protocol's contribution towards climate protection during the past 3 decades is 5 to 6 times higher than the contribution of the Kyoto Protocol. This has been achieved through the shifting to long-term ozone-climate friendly alternatives in all sectors including the cooling sector which is the main using sector of controlled substances. The Kigali Amendment adopted in 2016 will add additional benefits mostly by making the shift in the cooling sector, not only by using long term alternative technologies but also through promoting better management of refrigerants as well as by supporting high energy efficiency systems. The cooling pledge and optimistic targets, therein, will add to the already expected contribution of the Kigali Amendment to reduce global warming by 0.5 degrees C by the end of the century.

Eurovent Middle East argues that we use more than double the electricity to cool buildings than necessary due to flawed designs, installation mistakes, and lack of operation protocols and maintenance. Yet, policymakers usually only look at products when regulating energy consumption. Are we missing the big picture, and what can we do to improve?

That's right to some extent. Hence, I wish to highlight that the Montreal Protocol has been giving due importance to improving the management of refrigerants by building the capacities of RAC technicians. There has also been work towards updating national policies, regulations and standards for better practices that minimise emissions of harmful substances to the atmosphere, developing and updating related training and education curricula, and, of course, converting the RAC manufacturing sector to use the most environmentally friendly alternative technologies which also resulted in some improvements in terms of energy efficiency. Now, the Kigali Amendment is giving higher importance to the energy efficiency program and the Multilateral Fund (MLF) started to support energy efficiency components of national plans. Hence, there is a need to work more on the building sector to address energy efficiency in a more holistic way.

Eurovent Middle East, 27 January 2024
Image: Eurovent Middle East

NORTH AMERICA

8. Energy Conservation Program: Energy Conservation Standards for Refrigerators, Refrigerator-Freezers, and Freezers - A Proposed Rule by the Energy Department


Proposed Rules

Summary

The Energy Policy and Conservation Act, as amended ("EPCA"), prescribes energy conservation standards for various consumer products and certain commercial and industrial equipment, including refrigerators, refrigerator-freezers, and freezers. In this notice of proposed rulemaking ("NOPR"), DOE proposes new energy conservation standards for refrigerators, refrigerator-freezers, and freezers identical to those set forth in a direct final rule published elsewhere in this issue of the **Federal Register**. If DOE receives adverse comment and determines that such comment may provide a reasonable basis for withdrawal of the direct final rule, DOE will publish a notice of withdrawal and will proceed with this proposed rule.

Dates

DOE will accept comments, data, and information regarding this NOPR no later than May 6, 2024. Comments regarding the likely competitive impact of the proposed standard should be sent to the Department of Justice contact listed in the **ADDRESSES** section on or before February 16, 2024.

[The US Office of Energy Efficiency and Renewable Energy, Department of Energy, 17 January 2024]

Image: US DoE

9. GreenChill Webinar: Managing Your Refrigerant Portfolio and Regulatory Compliance Through Data

Join GreenChill for a webinar on Wednesday, February 7 from 1 – 2 PM Eastern.

Prepare for upcoming changes to refrigerant management and compliance occurring under federal and state regulations as well as voluntary corporate initiatives at this GreenChill webinar.

Presenters: Glenn Barrett from DC Engineering and Leia Waln from Refrigerant Management Solutions (RMS) will discuss the impacts and changes end-users can expect during the transition to lower global warming potential (GWP) refrigerants and the importance of refrigerant tracking and leveraging their data to meet internal environmental and compliance requirements.

The webinar will help attendees understand how these changes affect their business and which systems and processes to have in place to navigate regulations and understand the "value" of their current refrigerant stocks.

Register Now!

USEPA-GreenChill, January 2024

Image: GreenChill

10. NASRC to Host Free Natural Refrigerants Training Summit in Pittsburgh

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

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

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

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

r744, 30 January 2024, By Christina Hayes

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

EUROPE & CENTRAL ASIA

11. The European Commission welcomes adoption of ambitious rules to limit fluorinated gases and ozone depleting substances

The European Commission welcomes today's adoption of strengthened rules on the use of fluorinated gases (F-gases) and ozone-depleting substances (ODS), which currently represent over 3 percent of the EU's total greenhouse gas (GHG) emissions. With the conclusion of the legislative process today, one more piece of the EU Green Deal has been completed. Today's endorsement marks an important step towards reaching the EU's 2030 climate goals and climate neutrality by 2050; it will **eliminate an additional 500 million tonnes of CO_2-equivalent emissions by 2050**, which is comparable to the combined annual emissions of France and Belgium.

The new rules will **eliminate the use of hydrofluorocarbons (HFCs)**, the most common F-gases, by 2050. Under the new regulations, the existing quota levels have been significantly reduced, further limiting imports and production of HFCs year-on-year. By 2030 HFCs placed on the market in the EU will be phased down by 95% below 2015 levels and will be completely phased out by mid-century. The rules will also **restrict the use of all F-gases** in equipment where climate-friendly alternatives are available, such as heat pumps, switchgear for energy transmission or products used in the health sector. New obligations will also reduce F-gas and ODS emissions from insulation foams in old buildings and those under renovation. These pioneering rules should serve as a positive example for our partners around the world and stimulate similar action on these gases in other countries.

Driving Green Investments

To stimulate exports of climate-friendly equipment and ensure harmful products are not put on the global market, the new measures on F-gases will ensure that obsolete equipment using refrigerants with a high global warming potential **may not be exported from the EU**.

Today's agreement sends a clear signal to manufacturers of products that traditionally use F-gases to steer their investments towards climate-friendly alternatives wherever feasible. This will **stimulate innovation and the development of clean technologies.** Prices are expected to go down as the market for climate-friendly equipment expands, and the new equipment will typically lead to more energy savings from higher energy efficiency over the products' lifetime.

New measures to better enforce these rules and monitor the market will facilitate customs and surveillance authorities to control imports and exports, and crack down on the illegal trade of gases and related equipment.

Background

F-gases and ODSs are highly potent, human-made greenhouse gases that contribute to global warming when released into the atmosphere, and often several thousand times stronger than carbon dioxide (CO_2). ODSs also damage the ozone layer that protects the Earth against dangerous ultraviolet radiation from the sun. Both substance groups have traditionally been used in everyday applications such as refrigeration, air conditioning, insulation, fire protection, power lines and as aerosol propellants.

The Commission **proposed two draft Regulations** in April 2022 revising the rules on F-gases and ODSs to align these policies with the EU's climate objectives and with international rules under the Montreal Protocol on Substances that Deplete the Ozone Layer. The Regulations were also adapted to improve implementation and enforcement of the rules. The EU co-legislators reached a **provisional agreement** on 5 October 2023. The European Parliament approved both Regulations on 16 January 2024, and today's Council vote completes the legislative process. The Regulations will enter into force 20 days after publication in the Official Journal of the Union.

The European Commission, 29 January 2024

Image: The European Commission

12. Virtual Training in Transcritical CO_2 Refrigeration Systems for Supermarkets

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

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

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

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

Learn more / Register >>>

The Green Cooling Initiative (GCI), January 2024

Image: GCI

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

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

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

The video must be posted privately on **AREA's Facebook page: "AREA"**

or sent to **info@area-eur.be**

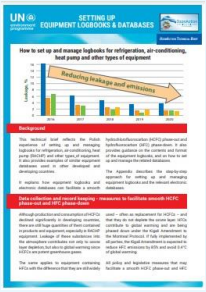
by **Sunday 7th of April 2024 at midnight**.

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

Learn more / Apply >>>

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

Image: AREA



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

FEATURED

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

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

The theme and other related materials available **here** in the six UN official languages.

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

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

Free teaching kits on ozone layer and environmental protection

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

Read/download >>> **Ozone Secretariat's education platform**

The UN Environment Assessment Panels

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

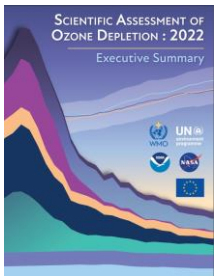
were first agreed in 1988 to assess various direct and indirect impacts on the ozone layer. The original three panels are:

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

In the past there were 4 main panels. The Panels for Technology and Economic Assessments were merged in 1990 into one Panel, now called the Technology and Economic Assessment Panel.
Why are the three current panels important to ozone layer protection? Each carries out assessment in its respective field. Every four years, the key findings of all panels are consolidated in a synthesis report. Learn more **>>>**

Scientific Assessment of Ozone Depletion: 2022 - Executive Summary

United Nations Environment Programme (UNEP), Ozone Secretariat



The Multilateral Fund for the Implementation of the Montreal Protocol

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

The Multilateral Fund is managed by an Executive Committee with equal membership from developed and developing countries. Since the inception of the Fund, the Executive Committee has held 91 meetings. The Fund Secretariat, located in Montreal, assists the Executive Committee in its tasks. Projects and activities supported by the Fund are implemented by four international implementing agencies and a few bilateral agencies.

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

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

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

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

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

All guides and submission forms are available here

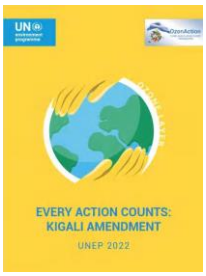
- Click **here** for the Executive Committee upcoming and past Meetings and related documents.

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

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

Images in this section are by OzonAction

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



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

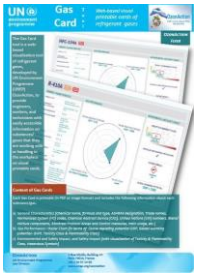
[Gender Mainstreaming in the Montreal Protocol: Experiences in Latin America and the Caribbean] -Taking into account that women and girls constitute half of the world's population and, therefore, represent half of the potential and innovation necessary to face the "triple planetary crisis" — climate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

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

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

Click HERE to access the OzonAction Knowledge Maps tool

Click HERE to download the OzonAction Knowledge Maps tool flyer

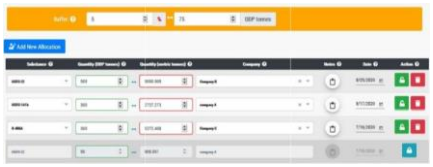


Gas Card Tool: Web-based Visual Printable Cards of Refrigerant Gases Content of Gas Cards - Each Gas Card is printable (in PDF or image format) and includes the following information about each substance/gas: a) General Characteristics (Chemical name, formula and type, ASHRAE designation, Trade names, Harmonized System (HS) codes, Chemical Abstract Service (CAS), United Nations (UN) numbers, Blend/ mixture components, Montreal Protocol Annex and Control measures, main usage, etc.) b) Gas Performance—Radar Chart (in terms of: Ozone depleting potential-ODP, Global warming potential-GWP, Toxicity Class & Flammability Class) c) Environmental and Safety Impact, and Safety Impact (with visualization of Toxicity & Flammability Class, Hazardous Symbols).
More Information - The Gas Card web-based tool is part of UNEP OzonAction's portfolio of activities and tools to assist various stakeholders in developing countries, including customs officers and technicians, to achieve and maintain compliance with the Montreal Protocol on Substances the Deplete the Ozone Layer. In the left navigation bar of the Gas Card tool web page, you will find a list of commonly used HFCs and HFC Blends in different sectors. *

Using the Gas Gard web-based tool

- The Gas Gard tool is available online on the **OzonAction website**
- Read the full **2021 annual iPIC report**
- See the **flyer** introducing the new iPIC platform

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



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

- **HCFC Quota tracker app**
- **Flyer for more information on the tracker**
- **Short video tutorial on the OzonAction YouTube Channel**

GWP-ODP Calculator Application - Updated- "Quickly, efficiently and accurately convert between values in metric tonnes, ODP tonnes and CO_2-equivalent tonnes"

Data are extremely important for the Montreal Protocol community, and the data reporting formats for both A7 and CP have changed recently, to a large degree triggered by the Kigali Amendment. HFCs, blends, CO_2-equivalent values, etc, now have to be addressed much more frequently by Ozone Officers during their daily work. Sometimes the terminology and values are complex and can be confusing, and it helps to have all the official facts and figures in one place. Conversion formulas need to be applied to calculate CO_2-eq values from both GWP and metric tonne values. This free app from OzonAction is a practical tool for Ozone Officers to help demystify some of this process and put frequently needed information at their fingertips.

What's new in the app:

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

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

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

Desktop Application: *GWP-ODP Calculator* is also available online on the OzonAction website

Watch the new short introductory tutorial **video** on the *GWP-ODP Calculator* - available now on YouTube

>>> Read/download the flyer

Updated OzonAction "WhatGas?" Mobile App

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

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

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

RAC Technician Videos - Full length films! Two 'full length' videos for refrigeration and air-conditioning (RAC) sector servicing technicians: on 1) Techniques, Safety and Best Practice and 2) Flammable Refrigerant Safety.
The OzonAction Refrigeration and Air-Conditioning Technician Video Series consists of instructional videos on techniques, security and best practice and flammable refrigerant safety. They are intended to serve as a complementary training tool RAC sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training. The videos are not intended to replace structured formal technician training, but to supplement and provide some revision of tips and skills and to build on training already undertaken.

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

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

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

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

You can watch these videos on the OzonAction YouTube Channel:

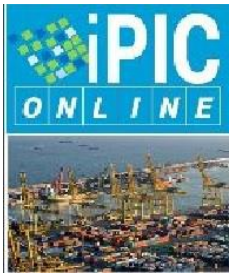
- **Techniques, Safety and Best Practice**
- **Flammable Refrigerant Safety**

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

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

The flyer is available from the **OzonAction website**.

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

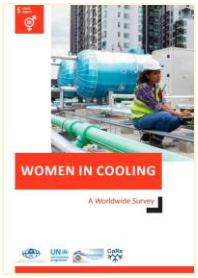


[Women in the refrigeration and air-conditioning industry: Personal experiences and achievements] The United Nations Environment Programme's (UNEP), OzonAction, in cooperation with UN Women, has compiled this booklet to raise awareness of the opportunities available to women and to highlight the particular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

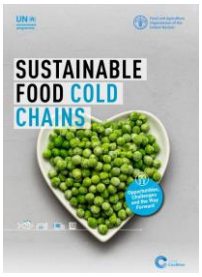
As part of IIR and UNEP OzonAction's partnership, a set of Cold Chain Technology Briefs was released over the past few years, which includes in-depth summaries about the cold chain in different key sectors. They include descriptions of technology, refrigerant options and trends and conclude with prospects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

PUBLICATIONS

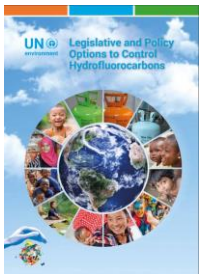
[Results of a Worldwide Survey about Women in Cooling Released by IIR and UNEP OzonAction] - Refrigeration, Air-Conditioning, and Heat-pumps (RACHP) are crucial for our health, nutrition, comfort, and well-being. It is one of the sectors that crosscuts many of the UN sustainable development goals and can contribute significantly to safeguard the environment, advance welfare of humanity and support the growth of employment and economics worldwide. Women are highly under-represented in this sector as indicated by the fact that only 6% of the members of national refrigeration associations/organisations/institutions are women. 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]



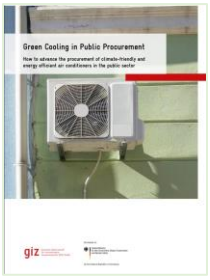
Sustainable Food Cold Chains: Opportunities, Challenges and the Way Forward-This [UNEP-FAO] report explores how food cold chain development can become more sustainable and makes a series of important recommendations. These include governments and other cold chain stakeholders collaborating to adopt a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

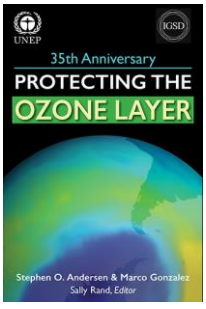


E-Book on Process Safety Management (PSM) Training for Ammonia Refrigeration - a new e-book about the critical elements of a process safety management (PSM) training program for facilities operating an ammonia refrigeration system. The e-book, titled "**7 Keys to a Compliant PSM Training Program for 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 - 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.

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