

# OzoNews

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

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

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

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



WORLD COLD CHAIN SYMPOSIUM

SAVE THE DATE • OCT. 21 • NAIROBI, KENYA

It takes more than one company, industry or country working on its own to succeed in expanding a sustainable cold chain and reducing food loss and waste. Success stories arise from solid collaborations and the development of sustainable business models. As a logical step building on previous World Cold Chain Symposiums, the theme for this year's event is Sustainable Growth: Building Business Models for Cold Chain Development.

Join the Global Food Cold Chain Council, the United Nations Environment Programme's OzonAction, the Cool Coalition, Carrier and experts from around the world as we come together for an in-person and virtual event focused on the benefits of funding efficient and sustainable cold chain development programs and successes to date.

GLOBAL FOOD COLD CHAIN COUNCIL

IN COOPERATION WITH

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foodcoldchain.org | www.unep.org/ozonaction | coolcoalition.org | corporate.carrier.com

private sector, government, international organizations, academia, and non-profit organizations. A recording of the session will be available after the event.

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

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

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

For event information, including registration for program and reception, please email [dobson@foodcoldchain.org](mailto:dobson@foodcoldchain.org)

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

GFCCC is an independent not-for-profit industry organization that seeks to simultaneously reduce food waste, and related greenhouse gas emissions in the processing, transportation, storage, and retail display of cold food by expanding and improving access to energy efficient low-global warming potential technology.

[WCCS Press Release – 2023 Announcement](#) | [SAVE THE DATE WCCS 2023](#)

For event information, including registration for program and reception, please email [dobson@foodcoldchain.org](mailto:dobson@foodcoldchain.org)

*Image: WCCS*

**GLOBAL**

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## 1. Kigali Amendment latest ratifications

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

**Georgia, 11 July 2023**  
**Spain, 9 June 2023**  
**Bahamas, 30 May 2023**



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

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

### United Nations Treaty Collection

*Image: UN Treaty Collection website*

## 2. New and updated guides and submission forms for the preparation of project proposals



New and updated guides and submission forms for the preparation of project proposals are now available on the MLF website. These include:

- 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](#)

### The Multilateral Fund Secretariat, July 2023

*Image: UN MLF*

## 3. Fears over Antarctic sea ice as yearly ozone layer hole forms 'very early'

Experts say larger-than-normal hole could cause further warming of Southern Ocean and heighten damaging effects of 2022 Tonga volcano eruption.



❏ Melting icebergs on Horseshoe Island, Antarctic. Scientists say a larger ozone hole than normal above the continent may further reduce levels of sea ice. Photograph: Anadolu Agency/Getty Images

The hole in the ozone layer has begun to form early this year, prompting warnings that a larger-than-average hole may further warm the Southern Ocean while the level of Antarctic sea ice is at a record low.

Satellite data from the European Centre for Medium-Range Weather Forecasts suggests the hole has already begun to form over [Antarctica](#).

Dr Martin Jucker, a lecturer at the Climate Change Research Centre at the University of New South Wales, said the hole usually began forming at the end of September, peaking in October before closing in November or December.

“Starting in August is certainly very early,” he said. “We don’t usually expect that.”

The Antarctic ozone hole is an annual thinning of the stratosphere’s ozone layer, which has a high concentration of ozone molecules that absorb ultraviolet radiation from the sun. The hole has been “healing” over time, following the 1989 Montreal protocol which eliminated 99% of ozone-depleting chemicals, such as chlorofluorocarbons. Ozone levels over the Antarctic are expected to bounce back to 1980 levels by 2066.

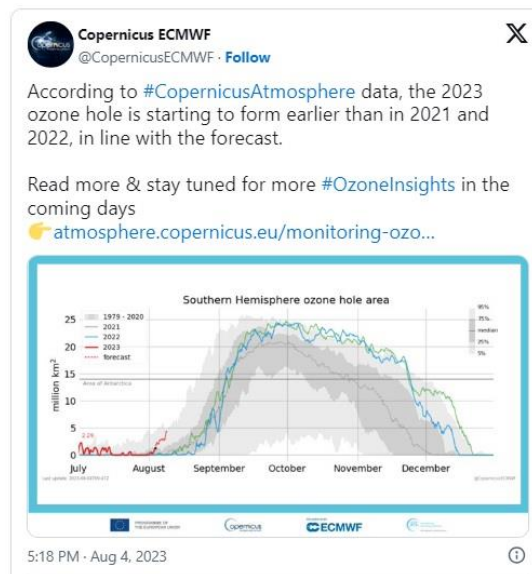
The ozone hole is usually smaller during El Niño years, but modelling by Jucker and collaborators, including Chris Lucas of the Australian Bureau of Meteorology, has suggested it will be larger than usual in 2023, due to long-lasting atmospheric changes after the undersea Tonga volcano explosion in January last year. The modelling has not yet been peer-reviewed.

Lucas, a senior research scientist at the BoM, said early indications showed the Antarctic ozone hole was beginning to form.

“As of 4 August, the [NASA ozone hole webpage](#) suggests the formation is currently about ‘average’ for the day of the year,” he said. “Some forecasts expect this to increase rapidly, in the next few days, producing one of the largest (for the time of year) observed ozone holes.”

“The most rapid growth of the ozone hole occurred in the year 2000. The event developing appears comparable to this right now.”

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The eruption of the Hunga Tonga-Hunga Ha’apai volcano injected “an unprecedented amount” of water vapour into the stratosphere, Jucker said – about 150 megatonnes.

“It’s a factor of about three times more water vapour than we usually have.”

Ice clouds form in the stratosphere when there is more water vapour than usual, allowing ozone-destroying molecules to gather on ice particles.

Jucker said he was concerned about the impact of the hole on Antarctic sea ice, which has hit record lows over the past two years.

“The more UV radiation that reaches Antarctica [and] the Southern Ocean means that there is more energy available to melt ice,” Jucker said. “Now that we have so little sea ice, instead of [reflective] white ice there is very dark blue ocean.

“There is a risk that the Southern Ocean would then heat up even more and then indirectly melt more ice because the water next to the ice is warmer.”

A larger ozone hole may also lead to a positive phase of a climate driver called the southern annular mode (Sam). “A positive Sam would shift ... winds further poleward,” Jucker said. “Stronger winds come further to[wards] the pole and they can push away more ice.”

Eun-Pa Lim, a senior research scientist at the BoM, said there was “large uncertainty in which direction the Sam will swing in spring and summer at this stage”, because an El Niño could push the Sam towards a negative phase.

“It is also uncertain how the current early development of the Antarctic ozone hole will impact the Antarctic sea ice via a change in Sam.”

Other impacts from the Tonga volcano eruption – such as higher-than-usual surface temperatures over large regions of the world – are expected to continue until the end of the decade.

The eruption would temporarily compound the impacts of greenhouse gas emissions on global heating, Jucker said.

“At least that effect will go away – it’s not like climate change which will stick around for centuries, but it’s an additional thing.”

**The Guardian, 8 August 2023, By Donna Lu**

*Image: The Guardian website | Photograph: Anadolu Agency/Getty Images*

#### **4. Promoting circularity in refrigerant gases: a climate-friendly cooling solution**

There are an estimated 3.6 billion cooling appliances in use today across the world and this number is projected to increase to 9.5 billion by 2050, according to a United Nations Environment Programme [report](#).



At the inauguration of the refrigerant reclamation centre at the Escuela Politécnica del Litoral (ESPOL) in Guayaquil, Ecuador, June 2023.

Providing cooling for all who will need it in a warming world - and not just those who can afford it - could require 14 billion cooling appliances by 2050!

From their use in houses to grocery stores, from food supply chain systems to automobiles, refrigeration and cooling devices affect all aspects of modern life. Built into most of these devices is a fluorinated gas, either hydrochlorofluorocarbon (HCFCs) or hydrofluorocarbon (HFCs), which are used as a refrigerant.

When these HCFCs are released into the atmosphere, normally at the end of the life cycle of the device, or due to a leakage, they cause great damage to the environment, leading to the depletion of earth’s ozone layer. If released, both HCFCs and HFCs are also extremely potent climate warmers. They absorb infrared radiation, trapping heat inside the atmosphere rather than allowing it to escape back into space, creating a greenhouse effect that warms the planet.

Globally, the installed base of HCFCs and HFCs is today something to the tune of 24 billion CO<sub>2</sub> equivalent metric tons, mostly in use as refrigerants according to a [report by the Environmental Investigation Agency](#). The report also highlights that, with the correct handling of the refrigerants, their recovery and reclamation could help avoid fluorocarbon emissions equivalent to 90 billion metric tons of CO<sub>2</sub> by the end of this century.

Recovering these gases and reclaiming them is an important way to fight the climate challenge. The United Nations Industrial Development Organization (UNIDO) Montreal Protocol Division, in collaboration with various member states and partners, has helped set up centres to do just that, most recently in Chile and Ecuador.

“Reclamation is the process of converting the recovered refrigerant into a new product, as per specifications, either by distillation or electrostatic methods, and thus differs from recycling, which removes only a certain level of impurities from the recovered gases,” says Ronald Viskil, an expert working in the field with experience of numerous UNIDO projects.

“The reclaimed product is as good as new, leading to a reduction in costs compared to the purchase of expensive new refrigerant refills. But key to the success of the reclamation centres is having proper legislation and strict implementation in place, and creating awareness of the advantages,” Viskil explains.

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Often refrigerants are handled in an unsafe manner leading to their release into the atmosphere, and sometimes banned and counterfeit refrigerants also enter the market, all underscoring the necessity for effective implementation of regulations and law.

Financial and technical support for countries to implement the Montreal Protocol and the subsequent **Kigali Amendment** requirements is being provided by international agencies like UNIDO. This is leading to the transfer of advanced technologies related to the recovery and reclamation of refrigerants in these countries.

The private sector also plays a key role in setting up the necessary infrastructure for the recovery and reclamation process. Only through joint climate action from all - from multilateral agencies, national governments, financial institutions, private sector and the civil society - can the challenges of climate change be addressed.

**UNIDO's Montreal Protocol News, 20 July 2023, By Jayaraj Manepalli**

Image: UNIDO



**Watch out for Illegal Trade of HCFCs and HFCs:** Lessons learnt from the Global Montreal Protocol Award for Customs and Enforcement Officers. This publication provides an analysis of the cases submitted in the context of the **Global Montreal Protocol Award for Customs and Enforcement Officers**. The Global Award was launched in 2018 by UNEP OzonAction. This Global Award is intended to raise awareness about the Montreal Protocol and to recognise customs and enforcement officials for their efforts in preventing and combating illicit traffic in Montreal Protocol and Kigali Amendment-regulated substances. Ozone-depleting substances (ODS) include hydrochlorofluorocarbons (HCFCs) and other compounds with a high Global Warming Potential (GWP), particularly hydrofluorocarbons (HFCs).



**UNEP OzonAction, ASHRAE, April 2023 Fact sheet: Update on New Refrigerants Designations and Safety Classifications.** The purpose of this fact sheet is to provide an update on ASHRAE standards for refrigerants and to introduce the new refrigerants that have been awarded an «R» number over the last few years and introduced into the international market.



**Sustainable cold chains: Virtual Exhibition - The virtual exhibition for sustainable cold chains aims to highlight the critical role of cold chains in ensuring food safety and security, access to vaccines, reducing global warming and preventing ozone layer depletion.**

The exhibition showcases commercially available cold chain technologies for food and vaccines, mainly targeting applications and equipment with refrigeration and cooling cycles that use ozone and climate-friendly refrigerants and have enhanced energy efficiency characteristics. It also aims to promote game-changing and systemic approaches, relevant initiatives, and not-in-kind solutions to cold chains. These technologies and approaches directly contribute to meeting national obligations under the Montreal Protocol on Substances that Deplete the Ozone Layer including its Kigali Amendment and the Paris Agreement on Climate Change. Sustainable cold chain contributes to the achievement of many **Sustainable Development Goals**.



The exhibition is ongoing and continuously updated with submissions accepted on a rolling basis. The partners of the exhibition will continue promoting the exhibition at all relevant events 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



8 exhibits

Storage of product, e.g. large warehouses / Distribution centers



3 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

**“Towards efficient, controlled and smart Refrigeration” - 26<sup>th</sup> International Congress of Refrigeration, 21-25 August 2023, Paris Congress Center | Paris, France.**

Refrigeration is both ubiquitous in our world and indispensable to our society. The Covid-19 pandemic that we have been experiencing since the beginning of 2020 has clearly shown this. But this very useful refrigeration is also a major energy consumer and contributes significantly to the greenhouse effect. In the 21<sup>st</sup> century, refrigeration will either be sustainable, or it won't be!



26<sup>TH</sup> INTERNATIONAL  
CONGRESS OF  
REFRIGERATION

21<sup>ST</sup> TO 25<sup>TH</sup> AUGUST 2023

PARIS CONGRESS CENTER

Towards efficient, controlled and smart  
Refrigeration

This is why the organizing committee has decided to organize this congress under the theme **“Towards efficient, controlled and smart Refrigeration”**

We believe that today we can reverse the trend and make the benefits of refrigeration more important for the environment than its harms. By reducing food waste, ensuring the safety of perishable food and health products, enabling superconductivity and energy storage, improving living conditions, ... refrigeration will enable our society to be sustainable. We believe that we can build refrigeration with a positive impact. The International Congress of Refrigeration 2023 is the world's largest gathering of scientists, experts, technicians and professionals in the field of refrigeration and air conditioning. It provides a unique forum to present and disseminate the results of research, development and innovation.

The 2023 edition of the IIR International Congress of Refrigeration is set to be a meeting ground for policymakers, engineers, and researchers active in the field. The IIR congress 2023 will cover:

- Cryogenics and liquefied gases
- Thermodynamics, equipment and systems
- Biology and food technology
- Storage and transport
- Air conditioning, heat pumps and energy recovery

## AFRICA

### 5. EPA to phaseout HCFCs in the Air-conditioning market (Ghana)

The Environmental Protection Agency (EPA) has engaged key players in the Air-conditioning market to help phaseout Hydrochlorofluorocarbons (HCFC) by 2030.



HCFCs are chemicals used in refrigerants, particularly air conditioners, that deplete the planet's protective ozone layer, which causes irreversible environmental damage and global warming.

The decision forms part of Ghana's mandate to meet the obligations of international treaties on substances that destroy the ozone layer.

Mr. Emmanuel Osae Quansah, Head of Climate Change and the Ozone Department of EPA speaking in an interview with GNA said "We have travelled far, we phased out Chlorofluorocarbon in 2010 and we are now controlling the volume of HCFCs that come into the country because we have to phase them out by 2030."

He said to eliminate these chemicals, there was a need to control the amount of HCFC refrigerants imported to hit their target.

As part of controlling HCFCs in the country, the EPA has also issued quotas to eligible importers not to breach the international community rules which could eventually attract sanctions.

Mr. Quansah said the issuance of quotas had made it easier for the Agency to make progress in the fight against these chemicals.

“With the rolling over of the Kigali amendment which controls 19 hydrofluorocarbons, they came to replace HCFCs and HFCs but because of their high global warming potential, the protocol has agreed that we phase them down to 80 per cent with 20 per cent residual quantities. When matured green technologies are found, the residual 20 per cent will be phased out,” he said.

He urged stakeholders to comply with the protocols and form member associations to make it easier for EPA to strengthen their bond with them.

Dr. Ing Dr. Kwame Owusu-Achaw, a renowned engineering consultant said there were global concerns in environmental issues which was because of several sectors of human activities.

“Following global warming and energy efficiency issues, we are going away from the old gases we are using. The CFC gas has already been phased out and the other registrants which came as replacements have also been phased out, so the trust of our profession is to educate,” he said.

He urged stakeholders to transform their activities to environmentally friendly and energy efficient technologies to get rid of HCFCs.

[The Ghana news Agency \(GNA\), 9 August 2023](#)

*Image: GNA website*

## **6. Green Cooling Initiative Donates R290 Air Conditioners to Ugandan Institutions**

The Green Cooling Initiative (GCI) has donated a total of nine propane (R290)-based split air-conditioning units to Uganda’s Kyambogo University and the Uganda National Association of Refrigeration and Air Conditioning (UNARA).



According to representatives of GCI, the new Midea units will be used to train around 50 students and lecturers at the university’s Faculty of Engineering and up to 200 refrigeration and air-conditioning (RAC) technicians via UNARA each year.

Through the training, the students and technicians will learn more about the safe handling and installation of flammable refrigerants like propane, which is not yet commonly used in Uganda.

GCI is a global initiative that focuses on the promotion of sustainable cooling globally, particularly in the Global South. It is seeking new manufacturer members for its Green Cooling Network, an alliance of key players in the RAC sector.

The Midea units have a cooling capacity of 3.5kW (0.3TR), a seasonal energy efficiency ratio (SEER) of 8.5 and an EU efficiency rating of A+++.

The product is also included in the Cool Technologies database, which is an initiative of the Environmental Investigation Agency (EIA) and Greenpeace. The aim of the database is to provide policymakers and end users with references to energy-efficient HVAC&R equipment that does not rely on f-gases.

### **Next-generation cooling**

UNARA was established in 1999 as a governmental compliance requirement for the Montreal Protocol. According to the association's website, its main focus is facilitating technology transfer within the country's HVAC&R sector to minimize the economic disruption of the reduction of ODS and high-GWP refrigerants.

The four energy-efficient R290 air conditioners donated by the GCI are enabling the UNARA to offer training for the "next generation [of] cooling," said the association on LinkedIn. [...]

Kyambogo University's five air conditioners from the GCI will help with the training of the students enrolled in its refrigeration and air-conditioning course. [...]

The air conditioners were supplied as part of GIZ Proklima's GCI III project under the guidance of Uganda's National Environment Management Authority (NEMA) and with support from the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV).

The project, which runs until the end of July 2024, aims to strengthen key stakeholders' efforts to transition to a more climate-friendly RAC sector in Uganda. The work focuses on policy advice, technology transfer and capacity building.

"The GCI III [project] supports specialized trainings for handling and installation of energy-efficient, climate-friendly R290 air conditioners in selected institutions," explained Anthony Orit, Energy Advisor for GCI III.

It is also supporting the adoption and review of national safety standards and updating national minimum energy performance standards (MEPS) and labelling schemes for refrigeration and cooling appliances, he added.[...]

Uganda has committed to improving the energy efficiency of its refrigeration and air-conditioning sector in its Nationally Determined Contributions (NDCs).

To support the ongoing adoption of green cooling technologies in Uganda, the GCI III team in discussions with the government about possibly developing a National Cooling Action Plan in the future.

**[hydrocarbons21](#), 28 July 2023, By Christina Hayes**

*Image: hydrocarbons21 website | Photo: Pia Hopfenwieser, GIZ Uganda (right), presenting Dr. Anne Nakagiri, Kyambogo University, with one of the donated R290 air-conditioning units. (Source: GIZ Uganda)*

**ASIA AND THE PACIFIC**

## 7. China's MEPS Lead to Major AC Market Transformation

CLASP's\* analysis of China's evolving room air conditioner standards shows strong evidence for policy's role in swift market transformation.

As climate change continues to heat the earth to unprecedented temperatures, billions of people will rely on air conditioners to accomplish everyday tasks. However, air conditioners and electric fans already account for about 20% of global building electricity use, much of which is generated by fossil fuels. In China, highly polluting coal is the largest source of energy.



China is also the world's largest manufacturer, exporter, and consumer of room air conditioners (RACs). In the past two decades, minimum energy performance standards (MEPS) have been enacted and revised to encourage more-efficient technologies, slashing energy costs, consumption, and CO<sub>2</sub> emissions. The most recent air-conditioning energy efficiency standard, GB 21455-2019, made significant changes that promote highly efficient technologies and fast-tracked China's RAC market toward climate-friendly cooling.

### Key findings:

- Room AC penetration has steadily increased since 2013, and in 2020 was at 117.7%, meaning there are 117.7 units for every 100 households.
- The new, more stringent MEPS precipitated the domination of the most efficient (grade 1) RACs in just two years, growing from 19% of the market share to 56%.
- Variable-speed ACs, which are technically much more efficient than their fixed-speed counterparts, completely overtook the market, quickly rising from 60% to 98% since implementation of the new MEPS.
- Mepsy analysis shows that without the revised 2019 standard, fixed-speed ACs would still hold a 30% market share in 2030.
- These long-term shifts brought on by China's updated RAC MEPS are projected to prevent at least 470 Mt of CO<sub>2</sub> emissions between 2020 and 2030. Even more reductions could be realized with full adoption of the Best Available Technology (BAT).
- The Chinese MEPS also increased the average efficiency of export markets and increased the market share of more sustainable refrigerants.

As RACs are widely traded internationally and have cross-border supply chains originating in China, this report serves as evidence to encourage countries with similar market conditions as China to use their policy as a reference.

**Read/Download the report [here](#)**

\* CLASP (the Collaborative Labeling and Appliance Standards Program)

**[Refrigeration World, 2 August 2023](#)**

*Image: Refrigeration World Website*

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**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](#)

## EUROPE & CENTRAL ASIA

### 8. No agreement on F-gas revision

At around 23.30 tonight [19 JUL 2023], local time, EU environment committee rapporteur Bas Eickhout, who was in charge of drafting the European Parliament's position on the F-gas regulation tweeted: "Unfortunately no deal tonight on the revision of the F-gas regulation. We tried and also the Council gave it all. It was just not enough to get to a final agreement. We will try again soon after the summer break."



With the EU Parliament due to shut down for most of August, no new agreement can now be put before parliament until September – close to the generally accepted deadline if the new regulation is to enter into force on 1 January 2024.

Eickhout is due to report back to the next EU environment committee on the negotiations on August 29. A vote was scheduled but that will not now take place.

The trilogues are negotiations between European Parliament, the Council of the European Union and the European Commission, who each have their own revision proposals, with the aim of reaching a provisional agreement that is acceptable to both the EU Parliament and the Council, the co-legislators. The Commission's role is to mediate between the parties. Any provisional agreement must then be adopted by each of the institutions' formal procedures.

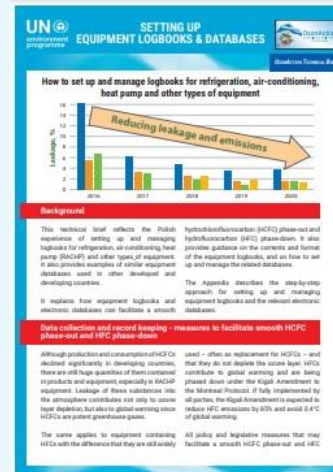
**CoolingPost, 19 July 2023**

Image: CoolingPost

## How to set up and manage logbooks for refrigeration, air-conditioning, heat pump and other types of equipment - Background:

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

This factsheet is available in [English](#) and [Russian](#)  
**UN Environment, OzonAction, August 2023**



**Heat pumps - action plan to accelerate roll-out across the EU**-The use of efficient heat pumps in buildings, industry & local heat networks is key for cutting greenhouse gases and achieving the Green Deal & REPowerEU targets. The action plan on accelerating the heat pump market and deployment sets out 4 strands of action:

- partnership between the Commission, EU countries and the sector (including R&I)
- communication to all interest groups & a skills partnership for rolling out heat pumps
- legislation (ecodesign & energy labelling)
- accessible financing.



**Consultation period 07 June 2023 - 30 August 2023 (midnight Brussels time) [Go to consultation >>>](#)**

**The Commission would like to hear your views.** This public consultation is open. Your input will be taken into account as we further develop and fine-tune this initiative. We will summarise the input we receive in a synopsis report, explaining how we have taken it into account. Feedback received will be published on this site and therefore must adhere to the [feedback rules](#).

## FEATURED



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

See also >>>

- [IISD daily reporting/highlights](#)

- [UNEP Ozone Secretariat/OEWG-45](#)

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

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



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

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



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



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

### Free teaching kits on ozone layer and environmental protection

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



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

### **The UN Environment Assessment Panels**

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

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

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

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

**Scientific Assessment of Ozone Depletion: 2022 - Executive Summary**

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



### **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

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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.

**Upcoming events:**

- The 93<sup>rd</sup> meeting is scheduled for 11 to 15 December 2023, in Montreal, Canada  
>>> 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)



Substances	Quantity	Licence
HCFC-22	100,000	100,000
HCFC-123	50,000	50,000
HCFC-141b	20,000	20,000
HCFC-142b	10,000	10,000

**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 the OzonAction [website](#)



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

**>>> Read/download the flyer**

### Updated OzonAction "WhatGas?" Mobile App

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

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



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

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

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




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


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

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

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

 You can watch these videos on the OzonAction YouTube Channel:

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

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

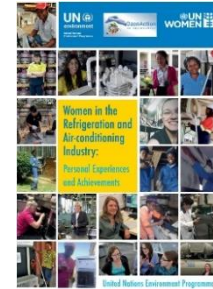
The flyer is available from the [OzonAction website](#).

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**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 field and follow in their footsteps. **Read/download the publication**

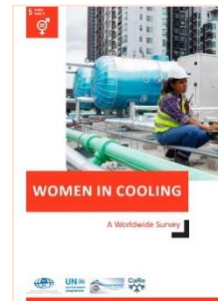


As part of IIR and UNEP OzonAction's partnership, a set of Cold Chain Technology Briefs was released over the past few years, which includes in-depth summaries about the cold chain in different key sectors. They include descriptions of technology, refrigerant options and trends and conclude with prospects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



## PUBLICATIONS

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

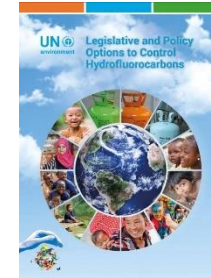




**Sustainable Food Cold Chains: Opportunities, Challenges and the Way Forward**-This [UNEP-FAO] report explores how food cold chain development can become more sustainable and makes a series of important recommendations. These include governments and other cold chain stakeholders collaborating to adopt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



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



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



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



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

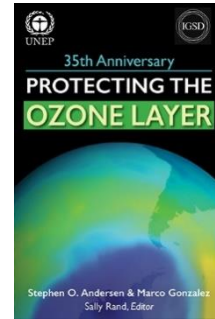


The e-book, titled "**7 Keys to a Compliant PSM Training Program for Ammonia Refrigeration**," outlines important questions a facility's program should address and questions that trained plant personnel should be able to answer. Topics covered include:

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

**Request free Download [here](#)**

**Protecting the Ozone Layer - 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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