Volume XX | 15 November 2020

In this issue:

GLOBAL

1. Kigali Amendment latest ratifications

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

Cabo Verde, 28 October 2020
Malaysia, 21 October 2020
San Marino, 20 October 2020
Bolivia (Plurinational State of), 9 October 2020
Russian Federation, 3 October 2020

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

---

2. OzonAction Virtual Side Events at MOP 32

OzonAction is pleased to announce two exciting side events which will be held as part of the 32nd Meeting of the Parties to the Montreal Protocol. Due to the constraints on holding large meetings and travel restrictions resulting from the COVID-19 pandemic, these side events will be held online. Despite these limitations we have a number of excellent speakers who will ensure the highest quality of these events.

The side events cover two very relevant and timely issues:

Installing, operating and servicing A/C systems in the times of COVID-19
Monday 23 November, 11:30 - 13:00 Nairobi time (EAT) **- Link to the event >>>**

With the COVID-19 pandemic the Air-conditioning comes to the forefront as a key player that can contribute significantly to minimising the likelihood of spreading such airborne viruses.

Additional considerations concerning field practices of air-conditioning systems should be considered from a safety context either for new systems or existing systems.

This side event will provide examples of the best guidelines and references offered by key international industry associations that should be considered when installing, servicing and operating air-conditioning systems in the context of the COVID-19.
Download the Flyer

Harmonised system codes for hydrofluorocarbons: What are the challenges and what can be done now?
Tuesday 24 November, 12:00 – 13:00 Nairobi time (EAT) **- Link to the event >>>**

One of the important requirements of the Kigali Amendment is that an import and export licencing system for HFCs needs to be in place in each country that is Party to the Amendment (by 2021-extended deadline).

To enable a licencing system to function effectively it is important that the government is able to monitor and record imports and exports of each specific HFC individually.

Import and export statistics are normally collected by customs officers using the international product nomenclature system - Harmonized System (HS). However, until the HS is revised in 2022, all HFCs are contained in a single HS code which does not allow differentiation of the individual chemicals or of mixtures.

This side event will provide an overview of the issue and explain a proactive interim approach, recommended by the World Customs Organization (WCO), to establish additional digits in the existing national HS codes to identify specific HFCs. It will also provide a examples of interim approaches to address this serious challenge.
Download the Flyer

The United Nations Environment Programme (UNEP), OzonAction, November 2020

3. Contingency meeting plans for 2020-2021: update

As we continue to live and work under the shadow of the COVID-19 pandemic, restrictions on travel and the convening of large meetings remain in place. The Ozone Secretariat, after consulting the bureaux of the eleventh meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and the Thirty-First Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, the co-chairs of the forty-second meeting of the Open-ended Working Group (OEWG42), as well as many parties, suggests to conduct the combined twelfth meeting of the Conference of Parties to the Vienna Convention and the Thirty-Second Meeting of Parties to the Montreal Protocol (COP12/MOP32) online.

Meetings in 2020

Proposed arrangements for COP12(I)/MOP32 in November 2020

The combined twelfth meeting of the Conference of the Parties to the Vienna Convention, part I, and the Thirty-Second Meeting of the Parties to the Montreal Protocol (COP12(I)/MOP32) will be convened as an online meeting with a reduced agenda. **The preparatory segment will take place from Monday, 23 November 2020 to Thursday, 26 November 2020, and the high-level segment will take place on Friday, 27 November 2020 from 2 - 4 p.m. EAT each day with possibility of an additional extra hour should parties decide to have additional time.**

COP12 will be held in two parts. Part I will be convened this year to decide on the budget of the Vienna Convention Trust Fund for **2020 (revised)** and 2021 only. All the other agenda items that refer to the Convention will be addressed in COP12 part II in 2021.

- MOP32 will address few issues as found in **the agenda of the meeting**

Preparatory work will be needed in order to better prepare parties and facilitate their discussions during the online **meeting**. The **online forum** will be the forum used for the preparatory work on the specific agenda items of COP12(I)/MOP32 and will be open from 1 October 2020.

The related meetings that will take place immediately prior to COP12(I)/MOP32 are:

- the sixty-fifth meeting of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol, online, 16-18 November 2020;
- the joint meeting of the bureaux of the eleventh meeting of the Conference of the Parties to the Vienna Convention and the Thirty-First Meeting of Parties to the Montreal Protocol, online, 21 November 2020.

Meetings in 2021

OEWG42 part II, on replenishment of the Multilateral Fund for 2021-2023

A second part of OEWG42 focusing on the issue of replenishment may be convened as a face-to-face meeting in March 2021 to discuss the need for and content of a supplementary

report. The Secretariat has made a tentative booking for the OEWG42 part II on replenishment to be held on 15 and 16 March 2021 in Montreal, Canada.

The parties may task the Technology and Economic Assessment Panel to prepare a supplementary report in time for consideration by the parties at the forty-third meeting of the Open-ended Working Group (OEWG43) in July 2021.

If a face-to-face meeting in the first quarter of 2021 is not possible due to the pandemic, then the suggested timeline will be adjusted accordingly.

OEWG43: Bangkok, 12-16 July 2021

The forty-third meeting of the Open-ended Working Group (OEWG43) is scheduled to be held from 12-16 July 2021 in Bangkok. All the agenda items that were deferred from the OEWG42 would be included in the agenda of OEWG43. In addition, any other issue that the parties may wish to discuss in 2021 can also be included.

The sixty-sixth meeting of the Implementation Committee will be held on 11 July 2021.

COP12(II)/MOP33: Nairobi (tentative), 25-29 October 2021 (tentative)

Part II of COP12 will address all issues including the recommendations of the eleventh meeting of the Ozone Research Managers (ORM11), which is now rescheduled to be convened in April 2021, matters related to the trust fund for monitoring and research and the budget of the Vienna Convention Trust Fund for the triennium 2022-2024. The Thirty-Third Meeting of the Parties (MOP33) will address all issues that MOP32 would have addressed in 2020 if a full-scale, physical meeting had been held, plus any new issues that may arise.

Other related meetings to be convened immediately prior to COP12(II)/MOP33 are:

- the sixty-seventh meeting of the Implementation Committee, 23 October 2021
- the joint meeting of the bureaux of the twelfth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Second Meeting of the Parties, 24 October 2021

Eleventh Meeting of the Ozone Research Managers (ORM11)

The **ORM11, part I, will be held online on 7-8 October 2020** to discuss only the issue of international monitoring programmes, namely the gaps in the global coverage of atmospheric monitoring of substances controlled by the Montreal Protocol.

ORM11, part II, will be held from on 14 to 16 April 2021 in Geneva to discuss all remaining issues set out in the agenda of the meeting taking also stock of the discussion on the gaps in monitoring of controlled substances discussed in ORM11(I). The recommendations will be passed on for the consideration of COP12(II).

The United Nations Environment Programme (UNEP), Ozone Secretariat, 21 September 2020

---

4. The seasonal ozone hole over Antarctica will remain active well into November

The seasonal ozone hole over Antarctica will persist well into November, according to satellite and weather balloon observations from NASA and the National Oceanic and Atmospheric Administration (NOAA).

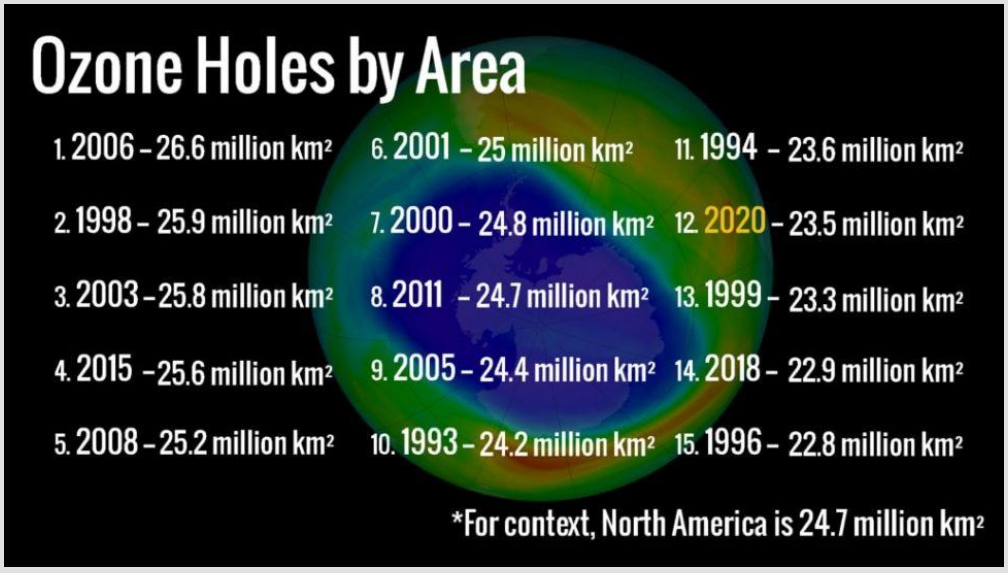
Ozone is a gas that in its natural zone in the stratosphere, acts like a "sunscreen" to life on Earth. In that region, ozone protects our planet from cancer-inducing ultraviolet radiation that also can damage plants and plankton. (Ozone also forms much closer to the ground as smog, when the sun's rays generate photochemical reactions with pollution from vehicle and industrial emissions.)

The natural stratospheric ozone depletes when chlorine and bromine from human activities latch on to the ozone atoms. Every winter in the Southern Hemisphere, the returning sun's rays cause the interactions that erode the ozone. The erosion will continue in the cold temperatures until the approach of spring, according to NASA.

"Persistent cold temperatures and strong circumpolar winds, also known as the polar vortex, supported the formation of a large and deep Antarctic ozone hole that should persist into November," NASA **said in a statement Oct. 30**.

"The annual Antarctic ozone hole reached its peak size at about 9.6 million square miles (24.8 million square kilometers), or roughly three times the area of the continental United States, on Sept. 20. Observations revealed the nearly complete elimination of ozone in a 4-mile-high [6.5 km] column of the stratosphere over the south pole," the agency added.

The 2020 ozone hole is the 12th largest by area in 40 years of satellite records and has the 14th lowest amount of ozone as measured by balloon instruments, NASA said. The production of ozone, however, is much better than it was in the year 2000, when the size of the hole peaked. The hole has been diminishing ever since due to declines in ozone-depleting chemicals regulated by the 1987 Montreal Protocol, NASA added.



"From the year 2000 peak, Antarctic stratosphere chlorine and bromine levels have fallen

about 16 percent towards the natural level," Paul A. Newman, chief scientist for Earth sciences at NASA's Goddard Space Flight Center in Maryland, said in the same statement.

"We have a long way to go, but that improvement made a big difference this year. The hole would have been about a million square miles [2.6 million square km] larger if there was still as much chlorine in the stratosphere as there was in 2000."

Satellite instruments that measure the ozone include the Dutch-Finnish Ozone Monitoring Instrument on NASA's Aura satellite, the Microwave Limb Sounder on Aura, the Ozone Mapping Profiler Suite on the NASA-NOAA Suomi National Polar-orbiting Partnership (NPP) satellite, and another Ozone Mapping Profiler Suite on the NOAA-20 polar satellite, NASA said.

Watch related Video: **Antarctic ozone hole was the 12th largest on record in 2020**

Space.com, 12 November 2020, By Elizabeth Howell

5. Survey Seeks Feedback on NatRef Trends in 2021

shecco is conducting a global, industrywide survey of HVAC&R stakeholders to collect predictions of trends for the natural refrigerant and sustainable cooling marketplace in 2021.

Stakeholders will be asked to comment briefly on expected market trends in installations, costs, efficiency, training, challenges, and opportunities as well as the expected impact of the COVID-19 pandemic on their organization.

The survey can be accessed **here**. Deadline for responding is November 23, close of business.

Results of the survey will be published in a Special Issue of *Accelerate* (#112) that will be available online at accelerate24.news on December 8.

The issue will also feature feedback on specific plans for 2021 from a wide variety of industry stakeholders. Areas covered will include refrigeration, air conditioning, heat pumps, mobile air conditioning, training, policy/standards, digitalization, servitization, HFO concerns, alternative technologies, and Clean Cooling.

“Following the massive disruption caused by the global pandemic and subsequent recession in 2020, [shecco is] speaking to stakeholders from around the world to try and get a sense of what to expect next year,” said Marc Chasserot, CEO of shecco. “With feedback from end users and contractors, to industry associations, manufacturers, NGOs, academics, policy makers and more, we will paint a picture of what 2021 could look like.”

r744, 9 November 2020, By Michael Garry

6. Call for Green Cooling Project Ideas

You would like to take your product to a new market, pilot an innovative technology or train suppliers to improve the quality of your products and services?

Take part in the ideas competition until December 31!

The Green Cooling Initiative (as part of GIZ Proklima) wants to specifically encourage actors in the cooling sector, such as manufacturers and end users of cooling equipment, to submit their project ideas.

Find more useful information on the process, application criteria and an info booklet **here**

7. The Montreal Protocol an exemplary success

[...] To get a fix on what an experimentalist approach to governance might mean, concretely, for limiting global warming, consider again the Montreal Protocol, by many measures the single most effective agreement on international environmental protection. It demonstrates that it is possible to catalyze and then speed the broad diffusion of the kinds of innovation in products and production processes needed to alter industries, albeit at a scale much more modest than the disruption implicated with deep decarbonization.

Crafted in the late 1980s, the protocol was ahead of its time. Then and now, everyone agreed that Montreal was effective in protecting the ozone layer, but the reasons for its success were misunderstood by those who immediately used Montreal as the model for climate change diplomacy in the 1990s. The UNFCCC was created in its image without adopting any of the machinery—especially the sector-based systems for advancing innovation—that explain why Montreal worked. Montreal's central place in both the old, ineffective world of climate change diplomacy and its exemplary role in the emerging one of experimentalist governance makes it a good vantage point from which to look ahead to an institutional architecture that takes uncertainty for granted—making it a spur to innovation rather than a cause of gridlock.

Beginning in the 1970s, scientists detected chemical reactions thinning the atmospheric ozone layer that protects most life on earth from ultraviolet radiation. The cause was traced to emissions of chlorofluorocarbons (and later other chemicals, including halons) that were then widely contained or used in the manufacture of many products, from aerosol sprays to fire extinguishers, styrofoam, refrigeration and industrial lubricants, and cleaning solvents. After more than a decade of contentious debate two linked treaties, the Vienna Convention (1985) and the Montreal Protocol (1987) created the framework for a global regime whose governance procedures were elaborated in the following years.

The core of this vision is a schedule to control and eventually eliminate nearly all ozone-depleting substances (ODS). The measures are reassessed every few years in light of current scientific, environmental, technical and economic information, and the schedule was adapted as necessary. The periodic meeting of the parties has broad authority to review implementation of the overall agreement, and to make formal decisions to add controlled substances or adjust schedules.

Problem solving in the regime is broken down into sectors that implicate similar technologies—solvents, plastic foams, refrigerants, halon fire-extinguishing agents, crop fumigants—and guided by committees representing industry, academia, and government regulators. The committees organize working groups of ODS users and producers to review and assess efforts, mainly in industry, to find acceptable alternatives. The reviews look at key individual components as well as whole systems—for example, assessing whether a refrigerant that depletes the ozone layer can be replaced by an analogous and more benign alternative, as well as whether refrigeration systems that utilize these new chemicals can work reliably and at acceptable cost. Pilot projects yield promising leads that attract further experimentation at larger scale, allowing the committees to judge if the nascent solution is robust enough for general use.

If this search comes up short, the committees and their oversight bodies authorize exemptions for “essential” and “critical” uses or extend timetables for phase-out. When the use of ODS was phased out in the metered dose inhalers (MDIs) that propel medication into the lungs of asthmatics, for example, the sectoral committee consulted doctors, pharmaceutical companies, and device manufactures country by country to determine substitutes and transition schedules that met the safety and efficacy requirements of patients. When firms invented an array of alternative MDIs using benign propellants, the committees put the industry on notice that the old methods would be banned. Innovative firms had a strong incentive not to be left out and persistent laggards faced exclusion from the market.

Over time, an amendment procedure allowed additions within the existing categories of coverage and also brought new categories of emissions under control. The boundaries around “sector” were adjusted as the properties of each class of ODS was understood and as new sectors were implicated.

Membership in the Montreal Protocol expanded sharply as well. Initially the Protocol focused on industrialized countries, as they had the highest consumption of ODS and were most compelled politically to stop ozone thinning. But use increased rapidly among developing countries, and to encourage their participation in the Protocol they were allowed to extend their compliance schedules. As a further incentive, essentially all costs of compliance for developing countries were paid by a “Multilateral Fund” financed by the rich countries—costs that included not just the new technologies but also the local administrative capacity needed to oversee preparation and execution of comprehensive regulatory plans for phasing out production and use of ozone-destroying chemicals sector by sector. Simply making new technology available would not will these benign alternatives into use—local contextualization was essential, and the fund helped build that capacity. Administratively, the fund is probably the best managed funding mechanism in the history of international environmental governance. Politically, it helped transform the ozone problem from one with guaranteed deadlock—developing countries did not want to bear all these costs themselves—into one that was more practical politically.

The Montreal regime operates against the backdrop of vague but potentially draconian penalties for governments and firms that drag their feet. For the western governments that initiated the regime, such as the United States, those penalties were electoral. (Those were the bygone days when the United States was a reliable leader on global environmental topics.) For the industrial firms that made the noxious substances, the penalties were about brand value and license to operate. DuPont, the most visible of these firms, broke ranks with the rest of industry to demand a phaseout; destroying the ozone layer was a big liability for a firm that made most of its money in other kinds of chemicals. (It helped that the alternatives might prove more profitable.) Once there was one innovator, it was too costly for others to lag behind. And in countries that actively undermine the Montreal Protocol—Russia at first but others later on, including India and China—the penalties were threats such as trade sanctions that came from other powerful governments, mainly in the industrialized world, that wanted Montreal to work and also wanted to make sure their home industries would not be undercut by violators overseas. [...]

Boston Review, 12 November 2020, By: Charles Sabel, David G. Victor

AFRICA

8. Algeria on the way to achieve its commitments under the Montreal Protocol

On 28th October over 50 representatives from the Algerian Government, universities, manufacturing and servicing sectors, training centers, as well as national environment specialists took part in a workshop organized by UNIDO in collaboration with the Algerian Ministry of Environment.

The objective of the workshop- where UNIDO participated interactively- was to develop an action plan and explore opportunities for collaboration under Preparation of the HPMP Stage II and Enabling Activities for the Kigali Amendment projects.

The success of the workshop will undoubtedly contribute significantly to Algeria's achievement of its commitments under the Montreal Protocol.

The United Nations Industrial Development Organization (UNIDO), 28 October 2020

EUROPE & CENTRAL ASIA

9. UNDP Moldova pledges for the use of environmentally friendly refrigerants, that do not deplete the ozone layer

Gases used in manufacturing sprays, refrigeration equipment, foam extinguishers as well as pesticides destroy the ozone layer. The negative effect is caused by the atoms of carbon, chlorine and fluoride, named Chlorofluorocarbons and Hydrochlorofluorocarbons that have a lifetime over a century and a significant ecological footprint on global warming.

The effect on the planet's protective shield of one unit of trifluoromethane is thousands of times bigger than of carbon dioxide: a tonne of trifluoromethane has a greenhouse effect equivalent to 14,800 tons of carbon dioxide. For comparison, to absorb one ton of CO_2, 46 trees are needed.

Also called the Earth's shield, the ozone layer protects the Earth from ultraviolet radiations that, in fact, are the main cause of many types of skin cancer or blindness. At the same time, reduced ozone layer leads to declining in crops variety and consequently the amount of feeding, and as a result plants' leaves shrink, marine life including plankton is destroyed. An economic effect that is easy to detect at the first glance is the degradation of an imposing number of plastics used in construction, paints, packaging, etc.

The solution is to give up to as many as possible hazardous substances. This will help to protect the Earth's ozone layer, as well as to fight against global warming on the planet.

"The Government of the Republic of Moldova, together with the United Nations Development Programme, takes measures to protect the ozone layer. In this regard, the Republic of Moldova has committed to phase-out hydrochlorofluorocarbons until their complete elimination by 2040," stated Victoria Jacot, Senior Consultant, Air Policy and Climate Change Section, Ministry of Agriculture, Regional Development and Environment.

The second stage of the UNDP project supported by the Multilateral Fund for the Implementation of the Montreal Protocol started in our country in 2010, aiming to promote ozone and climate friendly technologies as well as provide technological support to the refrigeration and air conditioning sector.

With UNDP support, two Moldovan companies have benefited from financial support and installed modern equipment that works on natural refrigerant such as carbon dioxide.

CO_2 is a very attractive refrigerant from an environmental perspective. It is a natural

substance and is used in several refrigeration cycles. As a refrigerant, it is more efficient at low temperatures. It has excellent thermal conductive properties and high volumetric efficiency. Thus, many products can be frozen, with low carbon footprints.

Carbon dioxide technology is more expensive comparing to the technology based on synthetic refrigerants, but at the same time it is more efficient and cost-effective.

The advantages of this technology are energy efficiency of up to 40% and low-cost of refrigerants. Another important aspect is smaller amount of refrigerant to be replaced in the installations, thus considerably reducing the maintenance costs. [...]

Using ecological refrigerants is becoming a trend, says engineer Constantin Postu: "Everybody has already switched to environmentally friendly refrigerants based on CO_2 and ammonia. Therefore, we propose to our clients and sometimes insist to shift to this type of equipment because there are so many advantages. What today is a choice, in the future will be a necessity and an obligation to use equipment based on ecological refrigerants".

UNDP has been supporting the Republic of Moldova since 2010 in its efforts to phase out ozone-depleting substances, by developing policies in this area and implementing pilot projects on alternative technologies and refrigerants.

"Due to the global effort, that also involves the United Nations Development Programme, a large share of these substances has been eliminated from sectors such as refrigeration, air conditioning, sprays and others. It is a positive trend, which will culminate in the development and use of alternative, environmentally friendly and natural refrigeration substances," said Silvia Pana-Carp, Programme Analyst, UNDP Moldova.

The Republic of Moldova became a party to the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol in 1996. The Montreal Protocol aims for gradual phase out of ozone-depleting substances.

So far, 99% of chlorofluorocarbons, which have a high potential for ozone destruction, have been taken out from production and use worldwide, and alternatives have been developed.

The results were not long in coming. According to a study presented by the UN in November 2018, the ozone layer is recovering at a rate of between 1% and 3% per decade, thus reversing the dangerous trend observed for many years that signaled gradual depletion of this gas from the Earth's atmosphere due to harmful emissions.

The United Nations Development Programme (UNDP), 3 November 2020

10. EU seeks to phase out planet-warming refrigerants

F-gases are used mainly as coolants in air conditioning and in domestic, supermarket and industrial refrigeration, which altogether represent an outstanding 90% of total emissions. [bodnar.photo / Shutterstock]

The EU's legislation on fluorinated gases, adopted in 2014, needs an overhaul "to increase ambition in line with the European Green Deal" and "better prevent" an ongoing surge of illegal imports coming from China, an EU official told EURACTIV.

Demand for F-gases, a family of chemicals used as a refrigerant, has increased steadily since they were introduced in the early 1990s to replace the ozone-depleting chlorofluorocarbons (CFCs).

But F-gases are also among the most potent greenhouse gases and are now also being phased out as a result.

Emissions of F-gases soared about 70% between 1990 and 2014, and peaked globally in 2015. They currently amount to 2.5% of total EU greenhouse gas emissions, according to the European Environment Agency.

Their impact on the earth's climate is considerable. Fluorinated gases have a global warming potential (GWP) up to 23,000 times greater than carbon dioxide. Moreover, they can linger in the atmosphere up to 270 years in the case of HFCs, while sulphur hexafluoride (SF6) and perfluorocarbons (PFCs) can stay for millennia.

The culprits are well identified. F-gases are used mainly as coolants in air conditioning and in domestic, supermarket and industrial refrigeration, which altogether represent an outstanding 90% of total emissions.

Potential leakages in all these areas spring from production plants and the manipulation of pre-charged equipment.

A global affair

Worldwide, demand for HFCs is on the rise due to the mass adoption of Western lifestyles, which rely heavily on food preservation and air-conditioning in cars and buildings.

The impact of F-gases is global since they blend with other gases in the atmosphere.

The EU is thus considering a legislative revision in line with its "international obligations on hydrofluorocarbons," an EU official told EURACTIV.

Effective in 2019, the Kigali amendment to the Montreal Protocol – which successfully phased out the ozone-depleting CFCs – "is expected to prevent a temperature increase of 0.4 degrees Celsius by 2100 and is essential for achieving the Paris Agreement objective," the official said.

Italy, Malta and Spain, however, are amongst the EU member states that still need to ratify the Kigali amendment. ECODES, a Spanish NGO, has called on the Spanish government to "lead the market transformation" and shift to "natural refrigerants in all public buildings by 2030".

Current EU framework

As part of its commitments under the Kyoto Protocol, the EU passed the first F-gas regulation in 2006, introducing containment and reporting obligations on producers. The **Mobile Air Conditioning Directive**, adopted the same year, introduces a gradual ban on F-gases in passenger cars.

The European Commission's assessment of those laws came to the conclusion that the regulation has been successful as the total supply of F-gases in the EU has decreased since 2015. In 2018, their warming effect decreased by 30%, the EU executive said.

The 2014 F-gas regulation, a worldwide pioneer, established a quota system for the volume of HFCs that can be placed on the EU market annually, and a timeline for progressively phasing them down.

The regulation introduced a cap to achieve a 79% reduction in F-gases by 2030 compared to 2014 levels while mandating companies to report their annual production, imports, and export activities involving HFCs.

Pre-charged equipment, where greener alternatives are widely available, and new HFC equipment will be banned by 2022 in specific sectors.

A green review

The EU's F-gas review is expected to see the light in late 2021 when the European Commission tables a legislative proposal. A **public consultation** is running until 29 December 2020 to explore whether more climate-friendly alternatives are available.

The Commission will also consider introducing harmonised sanctions, although it is currently up to the member states to interpret what constitutes a dissuasive penalty against environmental crimes.

But even the Commission doubts emissions can be stopped entirely. "At this stage, we cannot say if it will be feasible to fully avoid F-gas emissions by 2050, not least because in some cases F-gases may still be emitted by old equipment and products, e.g. in landfills," the official said.

Rita Tedesco from ECOS, a green pressure group, said the new regulation should introduce "minimum requirements on the collection, reclamation, recycling, and disposal" of F-gases, and require industry to finance these activities.

Aiming for a total ban, Tedesco said there is "no room for F-gases if we truly want the EU to be carbon neutral by 2050".

Lack of enforcement

However, the EU's crackdown on F-gases has also had unintended consequences. The mid-2018 HFC quota, which was initially established with the intention of provoking a price hike and force a shift towards less polluting alternatives, has instead attracted smuggling networks bringing cheap HFCs from China to the EU through neighbouring countries.

The industry is particularly unhappy about the EU's failure to implement the existing rules and demands new measures, including better monitoring systems and the empowerment of customs and surveillance authorities.

“Enforcement is left to member states and they have not been provided with the appropriate tools, where countries like Italy have not enacted the legislation until last year,” said Sameer Bharadwaj, president of Koura, a manufacturer of HFCs.

In 2021, the Commission will put forward a proposal for a Single Customs IT system, replacing manual checks by a real-time tracking system, which is expected to become mandatory across all EU member states in 2024.

EUACTIV, 9 November 2020, By Raquel Guerra

11. National produces short guides to new refrigerants

UK: With the number of new, lower GWP replacement and alternative refrigerants growing ever wide and more complex, National Refrigerants has published a series of videos on the subject.

These brief, easy to understand, two- and three-minute guides on many of the new refrigerants have been published on the refrigerant supplier’s YouTube channel in the form of Powerpoint presentations.

In addition, there is a more lengthy, eight-minute guide to the F-gas regulations, as well as a guide to recovery cylinders and their use.

Simon Ravenscroft, National’s northern regional sales manager, who produced the series, explained: “We set up a National Youtube channel to clarify some of the confusion around the new/replacement/alternative refrigerants. Around 20 guides have been uploaded so far, and we will keep adding to them.”

National Refrigerant’s Youtube channel can be accessed **here**

CoolingPost, 10 November 2020

5th Edition of Europe and Central Asia (ECA) Montreal Protocol Award for Customs and Enforcement Officers for 2019-2020

The United Nations Environment Programme, OzonAction, in cooperation with the World Customs Organization and the Ozone Secretariat, has launched the fifth edition of the ECA Montreal Protocol Award for Customs and Enforcement Officers for the period 2019-2020. Nominations forms are available in English and Russian and the award ceremony is scheduled for 2021. The award is part of the work programme of OzonAction’s Regional Montreal Protocol Network for Europe and Central Asia (ECA network).

The award recognizes the crucial role of customs & enforcement officers in implementing trade restrictions and bans for hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs). Both groups of chemicals, which are controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer, are widely used as refrigerants and foam blowing agents in the refrigeration, air conditioning and foam blowing sectors.

The informal Prior Informed Consent (iPIC) system allows trade partners to confirm the legitimacy of an intended trade in controlled substances prior to issuing import / export licenses. More information on iPIC is available **here**

The award aims to recognize and offer encouragement to customs and enforcement officers and their respective organizations for successful prevention of illegal or unwanted trade in HCFCs / HFCs. This also includes equipment or products containing or relying on the use of HCFCs / HFCs.

Eligible nominees include customs and enforcement officers and / or their respective organizations who have been directly involved or instrumental in preventing illegal or unwanted trade in HCFCs / HFCs as well as equipment or products containing or relying on the use of HCFCs / HFCs.

Eligible enforcement actions include the detection of an illegal shipment and the subsequent seizure, detention or sending back of the disallowed goods, as well as successful iPIC consultation preventing the issuance of export / import licenses for illegal or unwanted shipments.
Enforcement actions are eligible if they have not been submitted to any other award schemes.

Geographical scope and time period
Eligible countries include those in the Europe and Central Asia (ECA) region including countries with economies in transition (CEIT countries) and Western European countries as well as their trading partners.

Eligible enforcement actions must have taken place during the period: 1 January 2019 – 31 December 2020.

Completed nomination forms with detailed and comprehensive case descriptions and supporting photos and documents should be received by the United Nations Environment Programme as soon as possible but **at the latest by: 31 January 2021**.

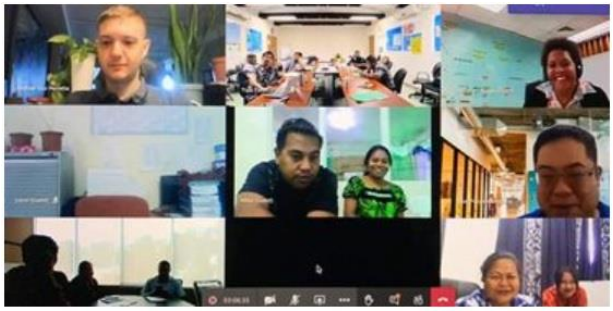
Learn more >>>

ASIA & THE PACIFIC

12. Pacific Island Countries Gearing up to Enact HFC Licensing Systems

Bangkok, 22 October 2020 – The Pacific region is renowned for its serene and prestigious islands, including its diverse and rich ecosystems, but that natural and human wealth continues to face the major threat of climate change. Furthermore, with the current travel restrictions due to the COVID-19 pandemic, the region faces additional challenges on how to implement activities under the 'new normal.' Nevertheless, in spite of these obstacles, the Pacific Island Countries (PICs) have continued to keep their work on the Montreal Protocol on Substances that Deplete the Ozone Layer sailing steadily ahead, through a combination of great determination, mutual support and online meetings.

On 16 October 2020, 50 National Ozone Officers and Customs Authorities from 14 PICs – Cook Islands, Kiribati, Fiji, Marshall Islands, Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu – as well as representatives from Australia, the Oceania Customs Organisation (OCO), and UNEP OzonAction, rallied together virtually to review the status of the development and the enactment of national licensing systems to control the trade of hydrofluorocarbons (HFCs). Such trade controls are required under the Montreal Protocol for countries that are Party to the Kigali Amendment, which require Parties to establish their HFC licensing system by 1 January 2021.



Notably, 11 out of the 14 countries in the Pacific region have already ratified the Kigali Amendment, and two of them have already put in place their HFC licensing systems. The rest are now gearing up to meet the initial obligations. The meeting provided a forum for the National Ozone Officers to discuss progress and challenges in the amendment of the existing regulation, and to identify the support needed from UNEP's Compliance Assistance Programme (CAP). The PICs that are Party to the Kigali Amendment agreed to expedite the internal process for enacting the HFC licensing system by 1 January 2021.

The National Ozone Officers, Ms. Francesca Sungino from Palau and Ms. Roselyn Bue from Vanuatu shared their experiences and advised that the establishment/amendment of regulations for HFC trade control is a lengthy process and there is a need to revisit and revise the draft before final approval, therefore earlier action is required.

Customs codes are vital for controlling and monitoring the trade of the controlled substances across borders. The meeting further updated and discussed challenges in the implementation of the regional harmonized system (HS) code for HFCs under the Pacific Harmonized Commodity Description and Coding System 2017 (PACHS17) at the national level and further discussed the preparation of the HS code for HFCs under the PACHS22. Ms. Laisiana Tugaga of OCO said that the implementation of the PACHS17 requires a holistic approach for effective implementation. Based on the lessons learned from the PACHS17, the OCO is working on the draft PACHS22 in advance to allow sufficient time for the members to adopt and follow internal procedures for implementation of PACHS22 from 1 January 2022. OCO welcomed collaboration from UNEP to assign the HS code for commonly used HFCs under the PACHS22.

The meeting further discussed other feasible approaches to assist the countries in tracking HFC imports to support the HS code implementation.

Mr. Shaofeng Hu, Senior Montreal Protocol Regional Coordinator, UNEP OzonAction, Asia and the Pacific Office stated, “We all agree that the next two months are very critical for Parties to the Kigali Amendment and to work with the national stakeholders to get close follow up on the HFC licensing system and to make sure that countries put that in place by January 2021. After the establishment of the licensing system, there is need to strengthen the monitoring, reporting, verification and enforcement (MRVE) and most importantly the need to strengthen collaboration between the National Ozone Units and Customs Authorities,” said

The virtual meeting was organized as part of the UNEP’s OzonAction Regional CAP work plan for 2020 to support countries in meeting and sustaining their Montreal Protocol commitments.

Contact: Shaofeng Hu, Senior Montreal Protocol Regional Coordinator, UNEP Asia and Pacific Office

The United Nations Environment Programme, OzonAction, October 2020

13. Workshop on good servicing practices for flammable refrigerants at Vava'u

A joint team from the Ministry of MEIDECC and Tonga Refrigeration Engineering Association (TREA) has conducted two days (9 - 10/November)of workshop on good servicing practices for flammable refrigerants for the RAC (refrigeration & air condition) technicians at the Fakamelino Hall, Neiafu, Vava’u.

In the opening session of the workshop, the officer in charge of the Ministry of MEIDECC -Vavaú branch, Ms. Lucy Faánunu during her welcoming remarks, highlighted the significance of this training in relation to climate change as well as the safety of the technicians and the other innocent souls within the work compound.

Ms. Faánunu had also highly acknowledged the presence of female participants in the program due to her comparison with the past year trainings and its popularity to female technicians in the field.

She ended her remarks by wishing all the partakers of the program the best of luck and also urged them to take solemn involvement, for this workshop will enhance their knowledge and skills in the RAC sector.

Mr. 'Aloisio Fifita a member from the Department of Climate Change – Ministry of MEIDECC main office in Nuku'alofa, started the workshop with a presentation on the Science of Ozone Layer and its health and environmental impacts when depleted by human activities from the RAC environment.

"The refrigerants that we will be discussing during this workshop are capable of deteriorating the ozone layer and must be cautiously kept from escaping into the atmosphere whilst installing or servicing any HCFC or HFC based equipment," said Mr. Fifita.

At the end of his presentation, he voiced out the importance of keeping our compliance with the Montreal Protocol on substances that deplete the Ozone Layer.

The workshop proceeded to the theoretical sessions on the properties and types of flammable refrigerants, calculating charge size limits and ended up on the second day with the practical sessions on the best practice procedures.

These sessions were conducted by Mr. Fatafehi Fakatava from the Tonga Refrigeration Engineering Association (TREA).

In conclusion, the workshop ended by awarding certificates to the participants from RAC sectors, teachers and students from vocational and training departments of various secondary schools.

This workshop started in Tonga with the same objectives on 3 – 5 of November and has now successfully end in Neiafu, Vava'u.

Tonga Online News, 11 November 2020

WEST ASIA

14. UNEP Partners with ASHRAE and AUB on Policies and Codes in the Building Sector from the Montreal Protocol Perspective

10 November 2020, Beirut, Lebanon – As part of the 4th International ASHRAE Conference on Efficient Building Designs that took place from 5-6 November 2020 in Beirut, Lebanon, organized jointly by ASHRAE and the American University in Beirut (AUB), UN Environment Programme (UNEP) OzonAction organized a special live session on "Policies and Codes to Enable Compliance with the Montreal Protocol."

UNEP's Regional Director delivering opening remarks at the Conference

With the participation of international associations and support from UNEP, the conference attracted more than 350 participants. It was conducted virtually with 35 pre-recorded presentations by local and international speakers, four live keynote presentations and a special session titled "Rebuilding Beirut" dedicated to the reconstruction of Beirut as an efficient, safe, and resilient city.

Mr. Sami Demassi, UNEP's Regional Director for West Asia, in his opening remarks highlighted the achievements of the Montreal Protocol on Substances that Deplete the Ozone Layer and said, "The Ozone Layer protection treaties, over the last 35 years, demonstrated that the incorporation of environmental commitments within fast growing sectors, like buildings, is doable and can be profitable as well."

The UNEP live session shed light on key codes and policies recommended for the efficient implementation of the Montreal Protocol with focus on the elements and components that are most relevant to the building sectors. The session speakers were Mr. Essam E. Khalil, Professor and Chairman of the Arab HVAC Code Committee; Mr. Wael Nasrullah, Coordinator of Jordanian and Arab Thermal Insulation Code; Mr. Khaled Klaly, UNEP Montreal Protocol Regional Coordinator in West Asia; and Mr. Ayman Eltalouny, UNEP OzonAction International Partnerships Coordinator.

The building sector is one of the many sectors that was targeted by the Montreal Protocol and its amendments, where the building envelope along with the mechanical refrigeration and air-conditioning components witnessed rapid technological advancement over the last two decades. With such advancement, policies and standards and codes related to building insulation as well as the air-conditioning equipment installation, operation, servicing and end-of-life practices were also introduced to allow and facilitate the shifting from dependence on ozone depleting and high-global warming potential (GWP) substances to deploy ozone-friendly and lower-GWP solutions and avoid deployment of obsolete technologies that are harmful to the environment.

Please find here the link to UNEP live session and the link to UNEP's Regional Director opening remarks.

Contact:
- Khaled Klaly, UNEP Montreal Protocol Regional Coordinator in West Asia
- Ayman Eltalouny, UNEP OzonAction International Partnerships Coordinator

[The United Nations Environment Programme (UNEP), OzonAction, November 2020]

NORTH AMERICA

15. US EPA to regulate most uses of carbon tetrachloride


c&en
CHEMICAL & ENGINEERING NEWS
CHEMICAL REGULATION
US EPA to regulate most uses of carbon tetrachloride
Agency finds more than a dozen applications pose unreasonable risks to workers
by Britt E. Erickson
NOVEMBER 4, 2020 | APPEARED IN VOLUME 98, ISSUE 43

The use of carbon tetrachloride as an intermediate in chemical manufacturing and in many other commercial and industrial applications presents unreasonable risks to worker health, the US Environmental Protection Agency concludes in a final **risk assessment** released Nov. 3. The agency plans to issue measures to mitigate the risks within the next 2 years.

The EPA found risks to workers associated with inhalation and dermal exposure for 13 industrial uses of carbon tetrachloride. However, the agency found no unreasonable risks to workers in the semiconductor industry who use carbon tetrachloride as a reactant in reactive ion etching and to people who distribute the chemical. The EPA also found no unreasonable risks to the environment or to consumers.

As it has done with other recent assessments under the Toxic Substances Control Act (TSCA), the EPA did not evaluate the risks of carbon tetrachloride on the general population from sources such as industrial emissions to air or water. Instead, the agency punted those evaluations to other EPA programs.

Carbon tetrachloride is commonly used as a feedstock to manufacture refrigerants, agricultural chemicals, chlorinated solvents, and other chemicals. The EPA considers carbon tetrachloride “likely to be carcinogenic to humans.” The substance can also have adverse effects on the central nervous system, liver, and kidneys, and irritate skin.

Most nonfeedstock uses of carbon tetrachloride were phased out under the Montreal Protocol, an international treaty that aims to protect the Earth’s stratospheric ozone layer. Carbon tetrachloride is an ozone-depleting substance. Currently there are no consumer uses of carbon tetrachloride, according to the EPA.

Carbon tetrachloride is one of the first 10 chemicals that the EPA is evaluating for risks to human health and the environment under 2016 revisions to TSCA. The agency plans to finalize all 10 assessments by the end of this year.

Chemical and Engineering News, 4 November 2020, Volume 98, Issue 43, by Britt E. Erickson

16. Safety Alert: Online sales of Cool Penguin F-12

The United States Environmental Protection Agency (EPA) recently identified online sales of a product marketed as “Cool Penguin F-12” for use in motor vehicle air conditioners (MVACs). While the product appears to be marketed as CFC-12, some of the cans contain a mixture of ozone-depleting substances (ODS), such as CFC-12, CFC-114, HCFC-142b, and HCFC-22, along with non-ozone depleting components, including HFC134a and R-40. Different cans tested by the EPA contained varying amounts of some or all these substances.

Under current Clean Air Act regulations, the import of cans containing any percent of the ODS listed above into the United States is illegal.

In addition, no person may sell, distribute or offer for sale or distribution any regulated ODS that they know, or have reason to know, was imported illegally. No version of Cool Penguin F-12 has been submitted for evaluation as an alternative under the EPA’s Significant New Alternatives Policy (SNAP) program; thus, Cool Penguin F-12 has not been listed as acceptable for use in MVACs.

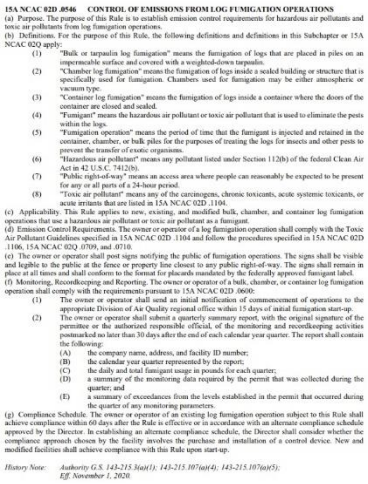
If you use Cool Penguin F-12 in your MVAC system, it may pose a safety risk to you and your vehicle. In particular, R-40 (chloromethane) is toxic and has the potential to explode under certain conditions. Combinations of other constituents of Cool Penguin F-12 may pose additional safety risks, and due to the varying makeup of individual cans, each could affect your system differently and could even harm your system. The unpredictable makeup could also pose a problem during the refrigerant recovery process.

Whenever you purchase a refrigerant, make sure you know what it contains, whether it is approved by the EPA for use in MVACs, and whether using it will void your car’s warranty. If you see any refrigerants for sale that violate the Clean Air Act or other regulations, please report the products to the EPA at **www.EPA.gov/tips**

For more information on MVAC servicing, please visit **www.epa.gov/mvac**

MACSW, ACTION • November/December 2020 issue, page 28

17. New state rules regulating methyl bromide use in log fumigation take effect



15A NCAC 02D .0546 CONTROL OF EMISSIONS FROM LOG FUMIGATION OPERATIONS

(a) Purpose. The purpose of this Rule is to establish emission control requirements for hazardous air pollutants and toxic air pollutants from log fumigation operations.

(b) Definitions. For the purpose of this Rule, the following definitions and definitions in this Subchapter or 15A NCAC 02Q apply:

(1) "Bulk or tarpaulin log fumigation" means the fumigation of logs that are placed in piles on an impermeable surface and covered with a weighted-down tarpaulin.

(2) "Chamber log fumigation" means the fumigation of logs inside a sealed building or structure that is specifically used for fumigation. Chambers used for fumigation may be either atmospheric or vacuum type.

(3) "Container log fumigation" means the fumigation of logs inside a container where the doors of the container are closed and sealed.

(4) "Fumigant" means the hazardous air pollutant or toxic air pollutant that is used to eliminate the pests within the logs.

(5) "Fumigation operation" means the period of time that the fumigant is injected and retained in the container, chamber, or bulk piles for the purposes of treating the logs for insects and other pests to prevent the transfer of exotic organisms.

(6) "Hazardous air pollutant" means any pollutant listed under Section 112(b) of the federal Clean Air Act in 42 U.S.C. 7412(b).

(7) "Public right-of-way" means an access area where people can reasonably be expected to be present for any or all parts of a 24-hour period.

(8) "Toxic air pollutant" means any of the carcinogens, chronic toxicants, acute systemic toxicants, or acute irritants that are listed in 15A NCAC 02D .1104.

(c) Applicability. This Rule applies to new, existing, and modified bulk, chamber, and container log fumigation operations that use a hazardous air pollutant or toxic air pollutant as a fumigant.

(d) Emission Control Requirements. The owner or operator of a log fumigation operation shall comply with the Toxic Air Pollutant Guidelines specified in 15A NCAC 02D .1104 and follow the procedures specified in 15A NCAC 02D .1106, 15A NCAC 02Q .0709, and .0710.

(e) The owner or operator shall post signs notifying the public of fumigation operations. The signs shall be visible and legible to the public at the fence or property line closest to any public right-of-way. The signs shall remain in place at all times and shall conform to the format for placards mandated by the federally approved fumigant label.

(f) Monitoring, Recordkeeping and Reporting. The owner or operator of a bulk, chamber, or container log fumigation operation shall comply with the requirements pursuant to 15A NCAC 02D .0600:

(1) The owner or operator shall send an initial notification of commencement of operations to the appropriate Division of Air Quality regional office within 15 days of initial fumigation start-up.

(2) The owner or operator shall submit a quarterly summary report, with the original signature of the permittee or the authorized responsible official, of the monitoring and recordkeeping activities postmarked no later than 30 days after the end of each calendar year quarter. The report shall contain the following:

(A) the company name, address, and facility ID number;

(B) the calendar year quarter represented by the report;

(C) the daily and total fumigant usage in pounds for each quarter;

(D) a summary of the monitoring data required by the permit that was collected during the quarter; and

(E) a summary of exceedances from the levels established in the permit that occurred during the quarter of any monitoring parameters.

(g) Compliance Schedule. The owner or operator of an existing log fumigation operation subject to this Rule shall achieve compliance within 60 days after the Rule is effective or in accordance with an alternate compliance schedule approved by the Director. In establishing an alternate compliance schedule, the Director shall consider whether the compliance approach chosen by the facility involves the purchase and installation of a control device. New and modified facilities shall achieve compliance with this Rule upon start-up.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(4); 143-215.107(a)(5);*
Eff. November 1, 2020.

As of November 1, 2020, the use of methyl bromide for log fumigation is regulated by a new state emissions rule and an amendment to North Carolina's state air toxics rule. This action is the result of a multi-year rulemaking process involving the Environmental Management Commission, Secretaries' Science Advisory Board, community groups and stakeholders across North Carolina.

"This is the first time in over 28 years that we have added a toxic air pollutant to our state air toxics rules," said Mike Abraczinskas, Director of the Division of Air Quality. "This is a significant and unique event that continues our mission to improve air quality."

In July of 2018, DAQ initiated rulemaking as an increase in businesses interested in using methyl bromide for log fumigation highlighted the need for specific state regulations. Since methyl bromide is an odorless, colorless gas, which can cause neurological and respiratory effects, the lack of specific federal or state air quality regulatory measures for the use of this hazardous air pollutant created a potential public health risk.

The **amendment to the state air toxics rule** establishes a 0.005mg/m3 annual acceptable ambient level(AAL) and a 1.0 mg/m3 24-hour acceptable ambient level. The **new rule 15A NCAC 02D .0546** establishes emission control requirements for log fumigation operations.

DAQ sent letters to the log fumigation facilities to inform them of their requirement to comply with 15A NCAC 2D .0546 by December 30, 2020. Those facilities are required to submit a permit modification application with changes to include, but not limited to, appropriate control measures, monitoring protocols, and recordkeeping.

For additional information, read more **here**

North Carolina Department of Environmental Quality, 2 November 2020

FEATURED

OZONE SECRETARIAT

Ozone for life: 35 years of ozone layer protection

World Ozone Day, held on September 16, the world celebrates 35 years of the Vienna Convention and 35 years of global ozone layer protection. **Learn more**

Overview for the meetings of the ozone treaties in 2020-2021

Click **here** for upcoming Montreal Protocol Meetings Dates and Venue.

Recent Meetings:

- **42nd Meeting of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (OEWG 42)**, 14-16 July 2020 | Online
- **31st Meeting of the Parties to the Montreal Protocol,** 4 - 8 November 2019, Rome, Italy
- **Bureau Meeting of the 30th Meeting of the Parties to the Montreal Protocol,** 3 November 2019, Rome, Italy
- **63rd Meeting of the Implementation Committee under the Non-Compliance Procedure of the Montreal Protocol,**, 2 November 2019, Rome, Italy

United Nations Treaty Collection

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

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.

THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL

Provisional agenda of the 85th meeting of the Executive Committee


UNITED NATIONS

EP

United Nations Environment Programme

The Eighty-fifth Meeting of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol, has been postponed due to the coronavirus disease (COVID-19).

The 85th meeting has been postponed until immediately after the 42nd meeting of the Open-ended Working Group (OEWG), and will be held in Montreal for a duration of four days, from 19 to 22 July 2020, on the understanding that the meeting might be further postponed or cancelled in light of the evolution of the COVID-19 pandemic.

Provisional Agenda

The Multilateral Fund for the Implementation of the Montreal Protocol, April 2020

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

Recent meetings:

- **84th meeting of the Executive Committee**
- **83rd meeting of the Executive Committee**
- **82nd meeting of the Executive Committee**
- **Executive Committee Primer – 2019** - An introduction to the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol

OZONACTION

COVID-19 pandemic: Letter from James S. Curlin, Acting Head, OzonAction, to the National Ozone Officers -
On behalf of the United Nations Environment Programme (UNEP) OzonAction, I would like to express our deep appreciation to your country for its continued high-level commitment to implement the Montreal Protocol on Substances that Deplete the Ozone Layer, including during very challenging times such as what the world is now facing with the COVID-19 pandemic. I would like to re-assure you that during this very difficult period, OzonAction's Compliance Assistance Programme (CAP) – like the rest of UNEP – remains open for business. Our CAP teams in Bangkok, Manama, Nairobi, Panama City, and Paris continue to work with great dedication and diligence to support Article 5 countries with meeting their compliance, reporting and project-related needs. Our internal processes are all functioning well, including those related to finance and administration. Our CAP teams continue to provide technical and policy support. Our information clearinghouse, capacity building services, and refrigeration and air conditioning partnerships are still developing and distributing tools and information to support your work. [...] **Read/download**

HCFC Quota and Licence Tracker - UNEP OzonAction launches 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.

To access the tools:

Click **HERE** to access the HCFC Quota tracker app

Click **HERE** to access the flyer for more information on the tracker

Click **HERE** to see the short video tutorial on the OzonAction YouTube Channel

IIR and UNEP OzonAction release the French and Spanish versions of the 'Cold Chain Technology Briefs' -

As part of their cooperation to support the needs of different stakeholders in developing countries to fulfil their commitments under the Montreal Protocol, the International Institute of Refrigeration (IIR) and UNEP OzonAction today released the French and Spanish versions of their popular Technology Briefs on the Cold Chain. The original English versions are also available for download from the OzonAction website.

Download:

- **Cold Storage and Refrigerated Warehouse**

- Commercial, Professional and Domestic
- Fishing Vessel Application
- Refrigeration in Food Production and Processing
- Transport Refrigeration

The new updated OzonAction GWP-ODP Calculator Application

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

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

What's new in the app:

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

The new and updated UNEP OzonAction ***GWP-ODP Calculator*** application will help you to convert between values in metric tonnes, ozone depleting potential (ODP) tonnes and CO_2-equivalent tonnes of substances controlled by the Montreal Protocol and their alternatives.

This application, available at no cost, is particularly useful for National Ozone Officers to assist with understanding and calculating quantities of controlled substances, both pure substances and mixtures, for quota assignment, reporting requirements, etc. Other stakeholders interested in ODP and global warming potential (GWP) values of controlled substances and their alternatives will also find this tool useful.

Operation of the application is very simple — just select a substance from the dropdown list and enter the known value in the appropriate field; the calculator will automatically perform the conversion between metric tonnes, ODP tonnes and/or CO_2-equivalent tonnes and display the corresponding converted values. The ODP, GWP and information about the substance is provided. For mixtures, the components of the mixture and their relative proportions (metric, ODP, CO_2- equivalent tonnes) are also calculated.

The updated ***GWP-ODP Calculator*** application now includes a new Kigali Amendment mode. The app can now be used in two different modes: the regular "Actual Values" mode and the "Kigali Amendment" mode. In the Kigali Amendment mode, the GWP values provided are those specified in the Kigali Amendment to the Montreal Protocol, i.e. GWP values are only assigned to controlled HFCs. In this mode the GWP values used to calculate the refrigerant blends/mixtures only include GWP contributions from components that are controlled HFCs. The user can effortlessly switch between modes.

The OzonAction GWP-ODP Calculator uses standard ODP values and GWP values as specified in the text of the Montreal Protocol to make the conversions. Other ODP and GWP values from the recent reports of the Montreal Protocol Technology and Economic Assessment Panel and Scientific Assessment Panel as well as the Intergovernmental Panel on Climate Change (IPCC) are used when appropriate, with references to sources of all values used. The app includes new refrigerant mixtures (with ASHRAE- approved refrigerant designations).

This application is designed primarily for use by Montreal Protocol National Ozone Units and other related stakeholders. The application was produced by UN Environment Programme (UNEP) OzonAction as a tool principally for developing countries to assist them in meeting their reporting and other commitments under the Protocol and is part of the OzonAction work programme under the Multilateral Fund for the Implementation of the Montreal Protocol.

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.

Using the application:

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** for more information

RAC Technician Videos - Full length films!

OzonAction is very pleased to release 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**.

The UNEP OzonAction WhatGas? application has been updated and improved

New features:
- An updated more user-friendly interface
- Multilingual interface: English, French and Spanish
- HFCs and HFC containing mixtures
- Latest updated ozone depleting potential and global warming potential values from the recent reports from the Montreal Protocol technology and scientific expert panels as well as the Intergovernmental Panel on Climate Change; as well as the standard ODP and GWP values as specified in the text of the Montreal Protocol
- References to sources of all values used
- New refrigerant mixtures (with ASHRAE approved refrigerant designations)
- Values for 'actual GWP' and 'Kigali Amendment context' GWP for pure substances and mixtures (i.e. only including GWP values/components assigned to controlled hydrofluorocarbons - HFCs).

The WhatGas? application is an information and identification tool for refrigerant gases: ozone depleting substances (ODS), HFCs and other alternatives. It is intended to provide a number of 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. If the user requires additional information or assistance in identifying a refrigerant gas they are inspecting or that is described in the relevant paperwork, this can be easily obtained by consulting the application.

Using the application:

If you already have the application installed on your device, be sure to update to benefit from the new features.

Smartphone Application: Just search for "WhatGas?" or UNEP in the Google Play store or use the QR code – free to download!

Desktop Application: WhatGas? is also available online on the OzonAction **website**

For more information: Watch the new short introductory tutorial **video** on WhatGas? available on **YouTube**

See/download the **WhatGas? flyer**

Over 10,000 installations on Android and iOS devices to date!

Refrigerant Cylinder Colours: What has Changed

A new UNEP OzonAction factsheet on the new AHRI revised guideline on a major change to refrigerant cylinder colours

One of the ways in which refrigeration cylinders are quickly identified is by cylinder colour. Although there was never a truly globally-adopted international standard, the guideline from the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) although not required by law was used by the vast majority of industry and chemical producers around the world. This guideline was intended to support manufacturers, engineers, installers, contractors and users, and was also widely used by customs and enforcement officers and National Ozone Officers (NOOs) to help identify the contents of cylinders.

In recent years, the number of refrigerants has dramatically increased, particularly as chemical producers continue to develop numerous new refrigerant mixtures for various applications. This fast-rising number of refrigerants created some concern since as more and more colours were used, the potential for misidentification of cylinders of similar colours increased. It was therefore decided by AHRI that for the benefit of the industry the guideline should be updated. This was to ensure continuation of correct identification and safe use of refrigerants based on clear and distinct product markings and labels. The revised guideline, first published in 2015, removes paint colour assignments for refrigerant containers and specifies that all refrigerant containers should have the same paint colour from 2020 onwards. This colour is a light green/grey, called “silk grey” (RAL 7044[4]). This guideline also provides a means by which colours can be assigned to printed materials, such as printed labels on refrigerant containers; these colours generally follow the familiar AHRI colours previously used for refrigerants.

It is very important that the range of stakeholders in the refrigeration and air-conditioning industry as well as NOOs and customs and enforcement personnel are aware of this change. **Cylinder colours can no longer be relied on as a means to identify the type of refrigerant in a container**. The principal method of cylinder identification now needs to be the container labels and markings. It is important to note that **flammable refrigerants** should include a red band on the top of the cylinder.

NOOs and technicians should be aware of this change and inform national stakeholders, as well as familiarising themselves with relevant container labels and markings for refrigerants. It will be important to inform and train customs officers of this change as colour codes have always been a helpful way to identify refrigerants. Given the possibility of mis-labelled or counterfeit refrigerants in cases of doubt/suspicion, it is recommended to verify the type of refrigerant using a refrigerant identifier

For more information read/download the factsheet

Update on new refrigerants designations and safety classifications

The latest version of the factsheet providing up to date information on refrigerant designations and safety classifications is now available (April 2020 update).

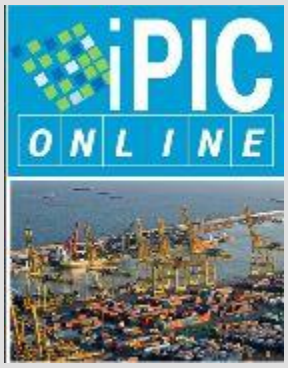
The factsheet, produced by **ASHRAE** in cooperation with **UN Environment Programme OzonAction** is updated every 6 months.

The purpose is to provide an update on ASHRAE standards for refrigerants and to introduce the new refrigerants that have been awarded an “R” number (or ASHRAE designation) over the last few years and which have been introduced into the international market.

Read/download the **factsheet**

The factsheet, as well as more information on ASHRAE-UNEP joint activities and tools, is also available on the **ASHRAE UNEP Portal**.

Contact:
- **Ayman Eltalouny**, OzonAction, UN Environment Programme
- **W. Stephen Comstock**, Manager of Business Development EMEA, ASHRAE



OzonAction’s iPIC system helps prevent an illegal shipment of 72 tonnes of HCFC-22
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 hydrochlorofluoro-carbons (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.

The OzonAction new iPIC platform - The Informal Prior informed consent system (iPIC) has been completely overhauled and updated - *OzonAction latest updated and streamlined version of the online Informal Prior-Informed Consent (iPIC) platform. Responding to comments and feedback we have changed how the system looks and operates.* **See the iPIC flyer for more details - Visit iPIC website to familiarise yourselves with the new features and functionalities.** *Automatically re-set your password if required.*

Contact: iPIC Online Administrators for any further questions.

Servicing tail for HCFCs: What is it & why does it matter?

This concept of a servicing tail, while allowed under the Montreal Protocol might not always be consistent with the phase-out targets specified under the HCFC Phase out Management Plan (HPMP) funding agreements agreed by Article 5 countries with the Executive Committee when receiving funds for HCFC phase out, where countries are obliged to meet these targets as specified in the agreement.

Details and explanations are provided in this Policy Brief.

Contact: Ezra Clark, UNEP, OzonAction

OzonAction Factsheet: Proposed additional HS code sub-headings for HFCs in advance of the 2022 HS code update - 'Cheat Sheet'

This document is intended to accompany the OzonAction policy brief: "***HS CODES FOR HFCs - Advice for countries in advance of the 2022 HS code update***", available here.

Download the Factsheet

Contact: Ezra Clark, UNEP, OzonAction

OzonAction Factsheet: Dealing with seized ODS - Options for Article 5 countries

This concise factsheet summarises the five main options available to countries when dealing with seized ODS or HFCs as well as outlining the various considerations and the pros and cons of these options.

Download the Factsheet

Contact: Ezra Clark, UNEP, OzonAction

UNEP OzonAction Training Programme for National Ozone Officer

A key factor contributing to the significant success of the Montreal Protocol on Substances that Deplete the Ozone Layer is the 'country-driven approach'. This approach places National Ozone Units at the centre of the action to protect the ozone layer.

The National Ozone Unit led by the National Ozone Officer (NOO), is the single most important element in national strategies to comply with the Montreal Protocol.

The knowledge and capacity of the NOO in effectively developing projects, managing strategies, reporting data, and working with national and international institutions -directly or indirectly affects each developing (Article 5) country's ability to meet its obligations under the Montreal Protocol treaty.

For this reason OzonAction has completely transformed and updated its NOO training programme to assist NOUs in successfully understanding all the roles and requirements and in carrying out their daily tasks in Montreal Protocol implementation.

The main objective of this training programme is to provide new National Ozone Unit (NOU) staff with essential information about the Montreal Protocol, a country's obligations under the Montreal Protocol, and the main activities carried out by NOUs. It aims to provide new NOU staff with fundamental knowledge and information tools that will enable them to support their national government in meeting the commitments agreed by all countries under the Montreal Protocol.

Download the flyer >>>

Contact: Mikheil Tushishvili, Montreal Protocol Programme Officer, UNEP-OzonAction.

OzonAction Factsheet: Article 7 Data Reporting on HFCs - When Countries Need to Start Reporting

One of the important commitments of the Protocol is that of reporting the consumption and production of substances controlled under the Montreal Protocol.

Following ratification of the Kigali Amendment, this commitment is now extended to HFCs.

This short factsheet provides some useful information on relevant Article 7 reporting dates and deadlines for HFCs.

Download the Factsheet

Contact: Ezra Clark, UNEP, OzonAction

HS Codes for HFCs - Advice for countries in advance of the 2022 HS code update

The Kigali Amendment requires Parties to put into place an import and export licensing system for hydrofluorocarbons (HFCs) by 1st January 2019 (or two years later if required).

To enable a licensing system to function effectively, it is important that the government is able to monitor and record imports and exports of each specific HFC individually.

Import and export statistics are normally collected by customs officers using the international product nomenclature system – the Harmonized Commodity Description and Coding System, or Harmonized System (HS).

However, until the HS is revised in 2022, all HFCs are contained in a single HS code which does not allow differentiation of the individual chemicals or of mixtures.

This document outlines a proactive interim approach, recommended by the World Customs Organization (WCO), to establish additional digits in the existing national HS codes to identify specific HFCs.

This practical document is suitable for outreach to the customs agencies, customs officers in the field, and others involved in controlling trade in HFCs.

Document prepared by the UN Environment Programme in cooperation with the World Customs Organization (WCO).

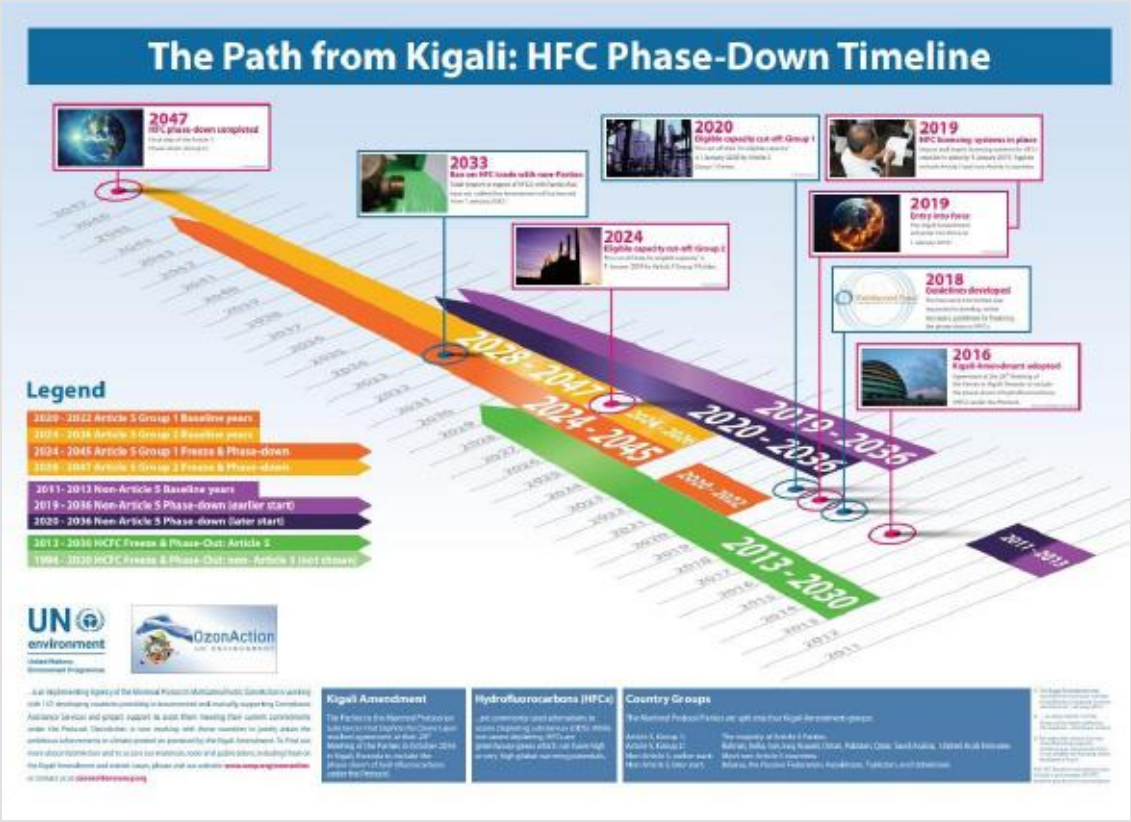
Download the publication

Contact: Ezra Clark, UNEP, OzonAction

[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.

[Download the publication]



The Path from Kigali: HFC Phase-Down Timeline

This timeline, produced by OzonAction, highlights key hydrofluorocarbons (HFCs) phase-down dates. Click **here** to download the timeline

Good Servicing: Flammable Refrigerants Quick Guide

This is the electronic and interactive version of the UN Environment Programme OzonAction Quick Guide on Good Servicing Practices for Flammable Refrigerants. It offers easy reference to the key safety classification and technical properties of flammable refrigerants that are available in the market.
It also provides important safety guidance for the installation and servicing of room air-conditioners designed to use flammable refrigerants.
This interactive guide allows you to scroll and browse the text, jump to specific chapters or use the comprehensive dynamic index to locate specific keywords, figures and tables. The application also includes a refrigerant charge size calculator and a room size calculator for flammable refrigerants.

Available for free on the Google play store (Apple version coming soon). Search for "UNEP Quick guide" or use the QR code

Refrigerant Identifier Video Series

Guidance on how to identify refrigerants using a refrigerant identifier.
This new OzonAction video series consists of short instructional videos showing how to use and maintain a refrigerant identifier.
The videos provide useful guidance on safety and best practice, understanding the difference between different identifier units, testing procedures and identification of results.
It is intended for use by Montreal Protocol National Ozone Officers, Customs and Enforcement Officers as well as technicians involved in the servicing and maintenance of refrigeration and air conditioning systems.
The application features 10 short instructional videos on the following topics:

- Refrigerant cylinder types
- Types of identifiers
- Getting to know your identifier
- Safety and precautions
- Testing a sample – vapour (gas)
- Testing a sample – liquid
- Results
- Faults & error messages
- Maintaining the unit

- Software updates

Available for free on the Google play store (Apple version coming soon). Search for "UNEP Refrigerant ID" or use the QR code

OzonAction Multimedia Video Application: Refrigeration and Air-conditioning Technician Video Series - Over 50,000 downloads to date -

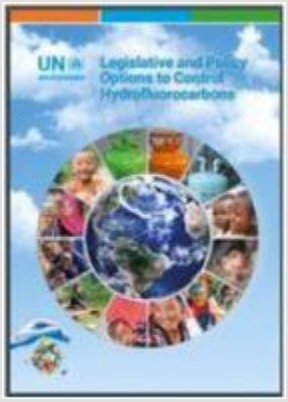
OzonAction has launched an exciting new application which hosts series of short instructional videos on techniques, safety and best practice for refrigeration and air-conditioning technicians.
This application, consisting of short instructional videos on techniques, safety and best practice, serves as a complementary training tool for refrigeration and air-conditioning (RAC) sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training.

New videos on flammable refrigerants just added!

Please share with your RAC associations, technicians and other interested stakeholders…

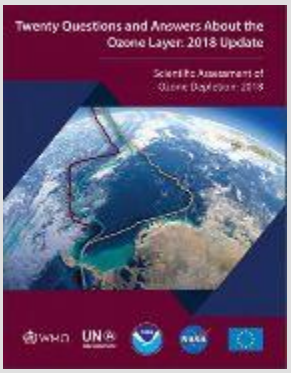
OzonAction Multimedia Video Application: Refrigeration and Air-conditioning Technician Video Series Available in the **Android Play Store** and **Apple Store/iTunes**. (Just search for "OzonAction", or scan this QR code)

PUBLICATIONS



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.



Twenty questions and answers about the ozone layer: 2018 update, is a component of the Scientific Assessment of Ozone Depletion: 2018 report. The report is prepared quadrennially by the Scientific Assessment Panel (SAP) of the Montreal Protocol on Substances that Deplete the Ozone Layer.

Lead Author: Ross J. Salawitch
Coauthors: David W. Fahey, Michaela I. Hegglin, Laura A. McBride, Walter R. Tribett, Sarah J. Doherty

Read / Download:

20 Questions and Answers about the ozone layer-2018 | **Figures**

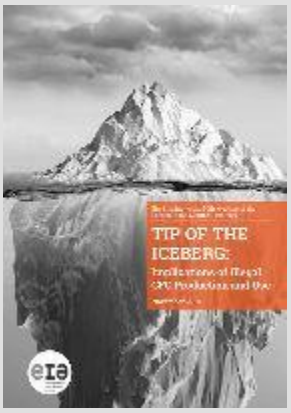
Primer on Hydrofluorocarbons (HFCs) - IGSD -11 January 2018
Fast action under the Montreal Protocol can limit growth of hydrofluorocarbons (HFCs), prevent 100 to 200 billion tonnes of CO_2-eq by 2050, and avoid up to 0.5°C of warming by 2100.
Lead authors:
Durwood Zaelke, Nathan Borgford-Parnell, and Stephen O. Andersen.
Contributing authors:
Kristin Campbell, Xiaopu Sun, Dennis Clare, Claire Phillips, Stela Herschmann, Yuzhe Peng
Ling, Alex Milgroom, and Nancy J. Sherman.

The **IIR International Dictionary of Refrigeration**
Available in 11 languages, the complete version of the International Institute of Refrigeration (IIR) International Dictionary of Refrigeration is now freely accessible online.
The IIR International Dictionary of Refrigeration offers researchers, industrialist or administrations the practical resources required to produce content related to refrigeration technologies in multiple languages.
This online tool allows you to find definitions, in English and French, of scientific and technical terms, as well as identify terms in the language of your choice and find corresponding translations in the 10 other languages.
The dictionary provides term searches in Arabic, Chinese, Dutch, English, French, German, Italian, Japanese, Norwegian, Russian and Spanish.
Access the International Dictionary of Refrigeration on the **IIR website**

Impact of Standards on Hydrocarbon Refrigerants in Europe – Market research report.

The market research report was realised for the EU-funded **LIFE FRONT** project. Amongst the main result of the market research:

- Current charge limits set in standards both restrict and obstruct the development of hydrocarbon technology
- Over 50% survey respondents already work with hydrocarbons to some extent
- Most of those planning to start working with hydrocarbons in the future will do that in 2019-2020 timeframe - revision of standards could have a major impact on the scale of this shift
- Large proportion of respondents indicated they manufacture equipment using multiple refrigeration circuits - allowing higher hydrocarbon charge limits per single refrigeration circuit would have a profound impact on cost and availability of larger units.



Tip of the Iceberg: Implications of Illegal CFC Production and Use.

The Environmental Investigation Agency (EIA) recently released report urges Parties to the Montreal Protocol to address a number of remaining unanswered questions, in particular the absence of comprehensive data regarding the size of current banks of CFC-11 in PU foam and other products or equipment.

Cold Hard Facts 3 - Review of the Refrigeration and Air Conditioning Industry in Australia

[...] This study provides a broad view of the composition, size and value of the industry, and projections for its future. This will assist industry and policy makers with management of ozone depleting substances as they are phased out, and synthetic greenhouse gases, including hydrofluorocarbons (HFCs) which are being phased down from January 2018.

Ozone-depleting substances 2019 Aggregated data reported by companies on the import, export, production, destruction, feedstock and process agent use of ozone-depleting substances in the European Union, 2006-20181994-2019 - The 2019 edition of the European Environment Agency (EEA) report on ODS confirms that the EU has already achieved its goals on the phase-out of such substances under the Montreal Protocol. [...]

Benefits of Energy Efficient and Low-Global Warming Potential Refrigerant Cooling Equipment

Authors: Nihar Shah, Max Wei, Virginie Letschert, Amol Phadke.

Energy Analysis and Environmental Impacts Division
Lawrence Berkeley National Laboratory
August/2019

Lower-GWP Alternatives in Stationary Air Conditioning: A Compilation of Case Studies -The case studies in this booklet discuss several applications in the stationary air conditioning sector. The applications include chillers of natural refrigerants and hydrofluoroolefins (HFOs) as well as split-units which use hydrocarbons (HCs) as the refrigerant. The technologies presented in these case studies are only some examples of the many available options for zero and lower GWP substances. The examples take into account design criteria such as system performance, environmental impact and cost. All these refrigerants still have many challenges that should be considered in the design, for example their flammability, toxicity, lower efficiency in some cases, and cost. Balancing these challenges using a consistent and comprehensive methodology across all refrigerants and system types is essential in assessing alternatives...

Climate and Clean Air Coalition (CCAC), 2019

Latest issue of Centro Studi Galileo magazine,
Industria & Formazione, n. 8 - 2020
(in Italian language).

Accelerate #110 features a cover story on Clean Cooling, a new approach to HVAC&R.

"**World Guide to Transcritical CO_2 Refrigeration**", a free three-part resource looking at the global market penetration and potential of this natural refrigerant technology. As the use of transcritical CO_2 refrigeration systems increase at an exponential rate around the world, it has become apparent that there is a great need for reliable information from a neutral source. The newly included Part 3 focusses on specific trends relating to industrial applications and on the global transcritical CO_2 market in the future. It includes survey information, partner case studies and interviews, and "thought leader interviews" with important individuals from the industry.

MISCELLANEOUS

I am in the Montreal Protocol Who's Who… Why Aren't You?

The United Nations Environment Programme, OzonAction, in collaboration with Marco Gonzalez and Stephen O. Andersen are updating and expanding the "**Montreal Protocol Who's Who**". We are pleased to invite you to submit your nomination*, and/or nominate Ozone Layer Champion(s). **The short profile should reflect the nominee's valuable work related to the Montreal Protocol and ozone layer protection.** Please notify and nominate worthy candidates through the on-line form We look forward to receiving your nomination(s), and please feel free to contact our team for any further assistance concerning your nomination.

Take this opportunity to raise the profile of women and men who made an important contribution to the Montreal Protocol success and ozone layer protection.

- View the «Montreal Protocol Who's Who» **Introductory video**
- Contact : **Samira Korban-de Gobert,** UN Environment Programme, OzonAction

** If you are already nominated, no need to resubmit your profile*

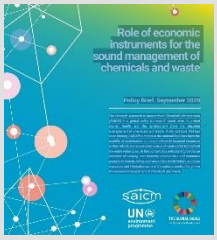
New International Journal of Refrigeration service for IIR members

Access the complete archives of the International Journal of Refrigeration (IJR) online. Designed with IIR members in mind, this new and practical electronic subscription gives members substantial advantages:

- Immediate and permanent access to the latest research and to IJR archive
- Access the latest articles as soon as they become available online.
- Browse, search and read each one of the nearly 4,500 papers since Volume 1, Issue 1.
- Unlimited access to seminal contributions to the field of refrigeration dating back to 1978.
- Keep up-to-date with subscriptions to customized e-alerts on New Volumes, Topics and saved Searches. Enhanced content and functions
- Easily export references, citations and abstracts.
- Print, download or share articles with colleagues or peers.

- See which papers, published in Elsevier or elsewhere, have cited any selected article.
- Consult the research highlights overview of articles in volumes from 2012 onwards.

To access this new service, click "**activate my e-IJR subscription now**" and follow the instructions.



Role of economic instruments for the sound management of chemicals and waste The Strategic Approach to International Chemicals Management (SAICM) is a global policy framework which aims to protect human health and the environment from the unsound management of chemicals and waste. A key obstacle that has been limiting SAICM's success at the national level has been the inability of stakeholders to secure adequate financial resources in their efforts to manage chemicals and waste safely throughout the entire value chain. In this context, this policy brief provides an overview of existing cost recovery mechanisms and economic policy instruments being used around the world today to mobilize resources and internalize some of the external costs arising from the unsound management of chemicals and waste.

Fertilizers: challenges and solutions [...] Nitrogen is essential for life on Earth but in excess, it is a dangerous pollutant and is poisoning water bodies, plants, animals and humans, while driving climate change through emissions of the potent greenhouse gas, nitrous oxide. Though little known to the general public, experts call the flood of excess nitrogen one of the most severe pollution threats facing humanity today. [...]

Click here to access recent OzoNews Issues Request a PDF of the current issue

Disclaimer:
The United Nations Environment (UNEP), Economy Division, OzonAction provides OzoNews as a free service for internal, non-commercial use by members of the Montreal Protocol community. Since its inception in January 2000, the goal of OzoNews is to provide current news relating to ozone depletion and the implementation of the Montreal Protocol, to stimulate discussion and promote cooperation in support of compliance with the Montreal Protocol. With the exception of items written by UNEP and occasional contributions solicited from other organizations, the news is sourced from on-line newspapers, journals and websites.

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

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

Prepared by: Samira Korban-de Gobert, OzonAction
Reviewed by: Ezra Clark, OzonAction

If you wish to submit articles, invite new subscribers, please contact:
Samira Korban-de Gobert,
Tel. (+33) 1 44.37.14.52,
samira.degobert@un.org