

OzoNews

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

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GLOBAL

Join UNEP-UNIDO-ASHRAE Webinar on Alternative Refrigerants for High Ambient Temperature Countries

Over last years, the Montreal Protocol (MP) witnessed major development by encompassing the Hydrofluorocarbons (HFCs) within its mandate through the historical Kigali Amendment adopted in 2016 for the phase-down of HFCs. With this dynamic, several other elements are being identified for considerations during the forthcoming overlapped period of commitments that all developing countries will pass through i.e. phasing out the remaining consumption of Hydrochlorofluorocarbons (HCFCs) while starting the phase-down of HFCs.

The High Ambient Temperature (HAT) countries' concerns continue to be addressed by UNEP and UNIDO, in cooperation with international partners through different assessment projects that offered opportunities for regional industry and governments to examine the feasibility of lower-GWP alternative refrigerants for air-conditioning industry and markets. The recent version of those projects i.e. PRAHA-II included a risk assessment study for the use of lower-GWP refrigerants with focus on the non-design elements i.e. installation, servicing and related handling practices.

UNEP/UNIDO in cooperation with ASHRAE are organizing an International Webinar on **"Alternative Refrigerants for High Ambient Temperature Countries"** The Webinar will be conducted twice in two different languages as follows:

- **Wed 10th June @ 2 pm CET/Paris time** – International version in English
- **Wed 17th June @ 2 pm CET/Paris time** – French version

This Webinar intends to share the knowledge acquired from all relevant HAT assessment and research projects with emphasis on the research projects conducted by UNEP/UNIDO in relation to the technical feasibility of alternatives and building risk assessment models to ensure safe deployment of alternatives.

A pre-registration to the Webinar is needed through:

- **To register for the 10th June Webinar (English)**

International Webinar

10th June 2020
@ 2 pm (CET, Paris Time)

High Ambient Temperature Montreal Protocol Countries
An average of at least two months per year over 10 consecutive years of a peak monthly average temperature above 35°C

High Ambient Temperature (HAT) Countries
Algeria, Bahrain, Berlin, Burkina Faso, Central African Republic, Chad, Comoros, Djibouti, Egypt, Ethiopia, Eswatini, Ghana, Guinea-Bissau, Kenya, Iraq, Iraq, Jordan, Kuwait, Libya, Mali, Mauritania, Niger, Nigeria, Oman, Pakistan, Qatar, Saudi Arabia, Senegal, Sudan, Syria, Togo, Tunisia, Turkmenistan, United Arab Emirates

Webinar Program

Time	Session / Topic	Speaker
Introduction: Open Ceremony, Message of Executive Director (UNEP/UNIDO)		
2:00pm	Welcome and Opening Remarks	UNEP and UNIDO
2:10pm	HAT definition and Relevant TMAP Assessment and HATP Decisions	Ayman Elshakry, HAT Partnership Coordinator - Chairing, UNEP
2:20pm	Research Project relevant to HAT (LADGE, PRAHA, ICPHA, AIRP)	Roman Blazevic, HAT, Consultant & EFDC Member
2:30pm	First Round of Q & A	Written questions through the webchat
Mid-break: Lunch Break, HAT Partnership Coordinator + Chairing, UNEP		
2:40pm	Optimization of non-technical strategies	Roman Blazevic, HAT, Consultant & EFDC Member
2:50pm	Alternative Refrigerants and their applicability to HAT with relevant design considerations as well as practical considerations for high-ambient environments	Omar Alshakry, HAT, Consultant & EFDC Co-Chair
3:00pm	Best practices for conversion projects	Dirk Walters, Chair, Montreal Protocol Decision - UNIDO
3:10pm	Second Round of Q & A	Written questions through the webchat
Open Break: Full Refreshment		
3:20pm	Standards and codes	Omar Alshakry, HAT, Consultant & EFDC Co-Chair
3:30pm	Risk assessment for HAT: Methodology and examples under PRAHA-II	Roman Blazevic, HAT, Consultant & EFDC Member
3:40pm	Other examples of relevant feasibility research	Omar Alshakry, HAT, Consultant & EFDC Co-Chair
3:50pm	Third Round of Q & A	Written questions through the webchat
4:00pm	Feedback and Comments by National Green Units (NGUs)	
4:10pm	Wrap-up & Vote of Thanks	UNEP and UNIDO

<https://attendee.gotowebinar.com/register/4895942067082069260>

- To register for the 17th June Webinar (French)

<https://attendee.gotowebinar.com/register/8319743210651056396>

1. 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 (see below).

The set of publications includes in-depth summaries about the cold chain in several different sectors. They include descriptions of technology, refrigerant options and trends and conclude with prospects and challenges. They cover the main cold chain sub-sectors i.e. Production & Processing, Cold Storage, Transport Refrigeration, Commercial & Domestic, and Fishing Vessels.



The Cold Chain sector has been one of the key consuming sectors in many Article 5 countries since the start of the Montreal Protocol. Within the context of the Kigali Amendment, all Article-5 Parties will face an overlapped in commitments during the period of 2020-2030 where they need to eliminate the use HCFCs while starting to control and curbing the increase in demand for HFCs. The Cold Chain is a sector that will be most affected during this challenging period, noting that the majority of commercially-available technologies in most developing countries, either for commercial or industrial uses, still mostly depends on high GWP HFCs technologies which can significantly affect compliance commitments in the medium and long terms.

Recommended Actions...

While these technology briefs were primarily created for NOUs and we hope you find them useful and interesting, we suggest that you could share this message with:

- Your national/regional RAC associations
- Training or vocational institutes

- Master RAC trainers in your country
- Any other interested national stakeholders

Download the policy briefs, available in English | French | Spanish (*click the links below*)

[Cold Storage and Refrigerated Warehouse
Commercial, Professional and Domestic
Fishing Vessel Application
Refrigeration in Food Production and Processing
Transport Refrigeration](#)

[UNEP, OzonAction, 28 May 2020](#)

2. Lower-GWP Refrigeration & Air Conditioning Innovation Award

What is lower GWP refrigeration and air-conditioning innovation award?

The award promotes innovative design, research, and practice, recognizing individuals and teams who have developed or implemented innovative technologies or concepts. Projects must be implemented or conceived specifically for use in developing countries and be aimed at advancing lower global warming potential (GWP) refrigerants.



Who are the awarding organizations?

Award recipients will be recognized by ASHRAE and UN Environment Programme.

How often is the award issued/awarded?

Annually.

What are the award categories?

Projects can be entered into one of two categories:

- Residential Applications
- Commercial/Industrial Facilities

What is the entry criteria?

The award is open to individuals and to teams of individuals. If submission is by an individual, individuals must confirm the work was not a team effort. If a team of individuals is selected, the team itself shall determine which team members shall be entitled to be certificated (maximum 5 per team). All awards will be made in the name of individuals, not in the name of their affiliations.

ASHRAE membership is not a requirement for submission.

How do I enter for the award?

To enter, please go to the link below and fill out the online form.

www.ashrae.org/lowerGWP

The submission form requires descriptive responses to each of the following:

- Description of innovation in the field of lower-GWP refrigerants
- Project details (description must include confirmation project has been implemented and date of implementation)
- Extent of need
- Description and goal of the research, design, practice or project
- Environmental impact achieved including specific reference to the GWP chemicals' contribution
- Further application(s) of project in developing countries from both the technical and economic perspectives, including how the innovation can be replicated
- Photographs illustrating the project, as well as statistical data demonstrating the project's successful performance or experimental findings (tables, figures, charts, etc.) are encouraged to be provided with the application.

How are the projects selected?

Projects in each category will be selected based on innovative solutions for designs, practice, or research using lower-GWP technologies. The selection will take into account the following criteria:

- Innovative aspects in transforming conventional practices (40%);
- Extent of need (25%);
- Technical replicability in developing countries (25%); and
- Economy feasibility for developing countries (10%).

What happens to the selected projects?

Selected entries in each category will be publicized by both ASHRAE and the UN Environment Programme.

When does the entry period opens and closes?

Entries are now being accepted. **Entry period closes 1 September 2020**. Click [here](#) to learn more and to complete an online entry form. To receive updates about the awards, please send an [email](#) to request to be added to our mailing list.

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

As the global COVID-19 pandemic continues to impact how we work for the foreseeable future; the Ozone Secretariat has reviewed the feasibility of the physical meetings of the ozone treaties scheduled for 2020-2021. 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 after extensive informal consultations with parties, a contingency plan for the ozone treaties meetings to be held in 2020 and 2021 has been developed.



Forty-second meeting of the Open-Ended Working Group (OEWG42)

The OEWG42 will not be convened as planned in Montreal from 13 to 17 July 2020. However, all the related meeting documents are being posted on the meeting portal as if the meeting were going to take place as scheduled. Instead, a technical online meeting on the presentation of the replenishment report by the Technology and Economic Assessment Panel (TEAP) task force will take place. This will comprise three identical sessions to accommodate the different time zones, from 14 to 16 July 2020, with simultaneous interpretation in the six official UN languages.

Parties can choose to participate in any or all of the above sessions. A report will be provided for all three sessions, and the sessions will be recorded. Observers will be invited to attend and may choose to join any one of the three sessions.

An online forum will be established to allow the registered representatives of the parties to review the report by the Technology and Economic Assessment Panel on the replenishment of the Multilateral Fund and to submit questions and comments. At the online forum, parties will also have the opportunity to review the report for the critical use nominations for methyl bromide prepared by the Methyl Bromide Technical Options Committee and submit their comments and questions online.

For more details on the OEWG42, click [here](#)

The joint twelfth meeting of the Conference of the Parties to the Vienna Convention and Thirty-Second Meeting of the Parties to the Montreal Protocol (COP12/MOP32)

Depending on the evolution of the COVID-19 pandemic, the Secretariat is preparing for the three following options:

- A face-to-face joint twelfth meeting of the Conference of the Parties to the Vienna Convention and Thirty-Second Meeting of the Parties to the Montreal Protocol (COP12/MOP32) scheduled to take place in late November 2020.
- A shorter face-to-face COP12/MOP32 reduced in duration and in number of agenda items scheduled for 8 to 11 November 2020 in Montreal, Canada.
- No face-to-face COP12/MOP32 meeting in 2020 with a brief online session to address critical issues including a path forward for the replenishment of the Multilateral Fund, the critical use exemptions for methyl bromide and the budgets for the two Trust Funds for the Vienna Convention and the Montreal Protocol.

The Secretariat will continue to monitor the evolution of the pandemic, consult the Bureaux and the parties, and inform the parties by the end of September 2020 at the latest of the decision regarding the meetings scheduled for the remainder of the year.

[UN Environment Programme, Ozone Secretariat, 29 May 2020](#)

4. UNEP OzonAction Encourages Everyone to Celebrate World Refrigeration Day 2020

World Refrigeration Day (WRD) is an international commemorative day that raises awareness about the refrigeration and air-conditioning industry and its contribution to modern life, as well as its connection to key societal objectives including mitigating climate change, protecting the ozone layer, and achieving the sustainable development goals (SDGs). Inaugurated in 2019, the initiative is well recognized and supported by leading industry associations and organizations around the globe, as well as governments and non-governmental organisations.

WRD is organized each year on 26 June, the birth date of Lord Kelvin after whom the Absolute temperature scale (the “Kelvin Scale”) is named. UNEP OzonAction was one of the early supporters of this commemorative day where it offered platform for announcing it to governments at the inter-regional network meeting of Ozone Officers, February 2019, and supported the celebration of the first edition of this awareness-raising event.

This year, UNEP OzonAction, the [WRD Secretariat](#), [ASHRAE](#), the [European Partnership for Energy and Environment \(EPEE\)](#), and the [International Institute of Refrigeration \(IIR\)](#) are partnering to promote a global campaign centered around the theme of the Cold Chain. This topic has generated great interest in recent years given its multi-dimensional contribution to key issues including Food Safety/Food Security, Health, Climate Change/Ozone Protection, Sustainable Production/Consumption, and others.

The Food Cold Chain can best be defined as the series of actions and equipment applied to maintain a product within a specified low temperature range from harvest/production to consumption, including farming/fishing, food processing, cold storage, transportation, food services, and domestic uses.

The 2020 campaign, which is being organized under the slogan “Cold Chain 4 Life”, aims at building knowledge and raising awareness amongst three different groups:

- General Public: consumers and direct beneficiaries of services/products offered through the cold chain.
- Policymakers: governments and authorities responsible for drafting and implementing relevant strategies and regulations.
- Owners/Operators: decision makers in terms of technology selection and operational procedures of different technologies required for cold chain processes.

“World Refrigeration Day is a great opportunity for all of us to celebrate the tremendous contribution that refrigeration and air conditioning makes to our societies. This includes enabling our agricultural and food systems to harvest, store, transport and sell the foods that nourish us all. The food cold chain is what makes this possible,” said James Curlin,



Acting Head of UNEP OzonAction, "*We encourage everyone to organize your own national or local WRD celebrations on 26 June to shine light on great work of the refrigeration and air conditioning sector, which is so vital for the success of the [Montreal Protocol](#).*"

National Ozone Units, national associations and industry groups, companies and professionals working in the refrigeration and air conditioning sector, schools and individuals can all join in the activities.

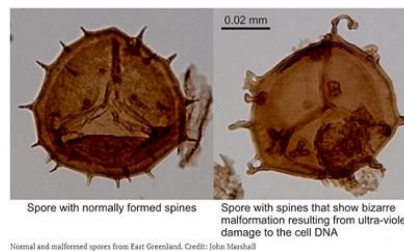
You are all invited to join the "Cold Chain 4 Life" campaign by organizing relevant events/functions or using the resources which the campaign will offer soon. Please follow-us on the OzonAction web site and through the WRD web site and associated social media tools.

Cold Chain 4 Life is an international campaign organized by the WRD Secretariat, UNEP OzonAction, ASHRAE, IIR and EPEE to help governments, organizations, companies and media promote World Refrigeration Day 2020. The Web-Ads (banners) available through below links may be used free of charge in websites and other media providing they are not altered; logos and other branding are not added; that they are not used in ways which state or imply endorsement of a brand, product or service by the WRD Secretariat or the campaign's organizers.

[The United Nations Environment Programme, OzonAction, April 2020](#)

5. Mass Extinction Event Caused by Erosion of the Ozone Layer

Researchers at the University of Southampton have shown that an extinction event 360 million years ago, that killed much of the Earth's plant and freshwater aquatic life, was caused by a brief breakdown of the ozone layer that shields the Earth from damaging ultraviolet (UV) radiation. This is a newly discovered extinction mechanism with profound implications for our warming world today.



There have been a number of mass extinctions in the geological past. Only one was caused by an asteroid hitting the Earth, which was 66 million years ago when the dinosaurs became extinct. Three of the others, including the end Permian Great Dying, 252 million years ago, were caused by huge continental-scale volcanic eruptions that destabilized the Earth's atmospheres and oceans.

Now, scientists have found evidence showing it was high levels of UV radiation which collapsed forest ecosystems and killed off many species of fish and tetrapods (our four-limbed ancestors) at the end of the Devonian geological period, 359 million years ago. This damaging burst of UV radiation occurred as part of one of the Earth's climate cycles, rather than being caused by a huge volcanic eruption.

The ozone collapse occurred as the climate rapidly warmed following an intense ice age and the researchers suggest that the Earth today could reach comparable temperatures,

possibly triggering a similar event. Their findings are published in the journal *Science Advances*.

The team collected rock samples during expeditions to mountainous polar-regions in East Greenland, which once formed a huge ancient lake bed in the arid interior of the Old Red Sandstone Continent, made up of Europe and North America. This lake was situated in the Earth's southern hemisphere and would have been similar in nature to modern-day Lake Chad on the edge of the Sahara Desert.

Other rocks were collected from the Andean Mountains above Lake Titicaca in Bolivia. These South American samples were from the southern continent of Gondwana, which was closer to the Devonian South Pole. They held clues as to what was happening at the edge of the melting Devonian ice sheet, allowing a comparison between the extinction event close to the pole and close to the equator.

Back in the lab, the rocks were dissolved in hydrofluoric acid, releasing microscopic plant spores (like pollen, but from fern-like plants that didn't have seeds or flowers) which had lain preserved for hundreds of millions of years. On microscopic examination, the scientists found many of the spores had bizarrely formed spines on their surface — a response to UV radiation damaging their DNA. Also, many spores had dark pigmented walls, thought to be a kind of protective 'tan', due to increased and damaging UV levels.

The scientists concluded that, during a time of rapid global warming, the ozone layer collapsed for a short period, exposing life on Earth to harmful levels of UV radiation and triggering a mass extinction event on land and in shallow water at the Devonian-Carboniferous boundary.

Following melting of the ice sheets, the climate was very warm, with the increased heat above continents pushing more naturally generated ozone destroying chemicals into the upper atmosphere. This led to high levels of UV-B radiation for several thousand years.

Lead researcher Professor John Marshall, of the University of Southampton's School of Ocean and Earth Science, who is a National Geographic Explorer, comments: "Our ozone shield vanished for a short time in this ancient period, coinciding with a brief and quick warming of the Earth. Our ozone layer is naturally in a state of flux — constantly being created and lost — and we have shown this happened in the past too, without a catalyst such as a continental scale volcanic eruption."

During the extinction, plants selectively survived, but were enormously disrupted as the forest ecosystem collapsed. The dominant group of armored fish became extinct. Those that survived — sharks and bony fish — remain to this day the dominant fish in our ecosystems.

These extinctions came at a key time for the evolution of our own ancestors, the tetrapods. These early tetrapods are fish that evolved to have limbs rather than fins, but still mostly lived in water. Their limbs possessed many fingers and toes. The extinction reset the direction of their evolution with the post-extinction survivors being terrestrial and with the number of fingers and toes reduced to five.

Professor Marshall says his team's findings have startling implications for life on Earth today: "Current estimates suggest we will reach similar global temperatures to those of 360 million years ago, with the possibility that a similar collapse of the ozone layer could occur

again, exposing surface and shallow sea life to deadly radiation. This would move us from the current state of climate change, to a climate emergency.”

The remote locations visited in East Greenland are very difficult to access, with travel involving light aircraft capable of landing directly on the tundra. Transport within the vast field area was by inflatable boats equipped with outboard motors, all of which had to fit in the small aircraft.

All field logistics was organized by CASP, an independent charitable trust based in Cambridge specializing in remote geological fieldwork. Mike Curtis, Managing Director of CASP says: “We have a history of assisting research geologists such as John Marshall and colleagues to access remote field areas and we are particularly pleased that their research has proved to have such potentially profound implications.”

Reference: “UV-B radiation was the Devonian-Carboniferous boundary terrestrial extinction kill mechanism” by John E. A. Marshall, Jon Lakin, Ian Troth and Sarah M. Wallace-Johnson, 27 May 2020, *Science Advances*. DOI: [10.1126/sciadv.aba0768](https://doi.org/10.1126/sciadv.aba0768)

The research was funded in part by a grant from the National Geographic Society.

The research was conducted in collaboration with The Sedgwick Museum of Earth Sciences at the University of Cambridge.

[SciTechDaily, 27 May 2020, By University of Southampton](#)

AFRICA

6. Environmentally friendly, energy-efficient refrigerators and room ACs to become accessible in Ghana through ECOFRIDGES program



ECOFRIDGES Ghana is a joint program of [United for Efficiency \(U4E\)](#) and the Government of Ghana through the Energy Commission, in collaboration with regional and local partners, to accelerate adoption of energy-efficient and climate-friendly domestic refrigerators and room air conditioners. A cornerstone of ECOFRIDGES is a financial mechanism to ensure these cooling products are affordable. [BASE](#) is leading the development and implementation of this scheme.

Through the no-risk high-potential ECOFRIDGES Green On-Wage (GO) financial mechanism, [Fidelity Bank Ghana](#)—a leading commercial bank in Ghana—and other partner local financial institutions, aim to unlock US\$ 5 million in financing to support the purchase of well over 10,000 energy-efficient and climate-friendly cooling products to replace old existing equipment by 2022. The mechanism also includes complementary

components, notably the proper collection and disposal of used appliances, product testing, policy considerations, and promotion and awareness campaigns.

ECOFRIDGES GO will soon become commercially available in Ghana. BASE signed a MoU with Fidelity Bank Ghana Limited as the first partner local financial institution. ECOFRIDGES GO is based on an employee loan product repaid over time through salary deductions.

Fidelity Bank, in collaboration with BASE, aims to develop a credit product designed to finance the up-front cost of appliance purchased by qualified customers from partner vendors selling certified cooling systems. The vendors will deliver the new domestic refrigerator or room air conditioner and facilitate the collection and recycling of old products from consumers. Customers are incentivised to turn-in used but operational cooling equipment through a voucher valid for use at vendors' branches.

“BASE is looking forward to working with first-mover Fidelity Bank and welcoming other partner financial institutions in the development and roll out of ECOFRIDGES GO in Ghana to support Ghanaian households replacing their old and inefficient domestic cooling systems with high-efficiency and environmentally friendly refrigerators and ACs through accessible and low-risk financing,” said Aurélien Pillet, Sustainable Energy Finance Specialist of BASE.

“Fidelity Bank Ghana Limited is excited to collaborate with BASE as the first financial institution in Ghana to promote the implementation of ECOFRIDGES GO in Ghana, under its Green Environment initiatives. As an environmentally responsible bank, our aim is to promote energy-efficient solutions to help a lot more Ghanaians save money on their utility bills and ease pressure on the electricity grid, while lessening impact on the environment,” said Nana Esi Idun–Arkhurst, Divisional Director of Fidelity Bank Ghana.

Now more than ever, energy-efficient and climate-friendly domestic refrigerators can help families cope with the consequences and restrictions generated by Covid-19. Efficient and clean cooling systems help households to save money on their electricity bills and extend the shelf life and quality of their food. Access to cooling is a basic need and ECOFRIDGES GO is a great opportunity to cost effectively address this challenge.

The ECOFRIDGES Initiative Program is made possible by funding from [Kigali Cooling Efficiency Program \(K-CEP\)](#) and in-kind contributions from Ghana's Energy Commission and Environmental Protection Agency. To learn more visits united4efficiency.org

[United for Efficiency, 1 May 2020](#)

ASIA PACIFIC

7. Tackling the cooling challenge with a chiller efficiency policy in India

Demand for chillers to cool spaces like airports and shopping malls is expected to grow dramatically over the next three decades.



The world faces an imminent surge in demand for space cooling that will improve lives but could have dire consequences for global efforts to address climate change. In hot and humid locations around the world, economic expansion, urbanization and population growth fuel increasing use of air conditioning. Cooling opens the door to productivity gains and quality of life improvements, but also drives demand for electricity, much of which is produced from climate-damaging fossil fuels. In [a report published last year](#), the International Energy Agency (IEA) described a coming “cold crunch” as global energy demand from air conditioning triples between now and 2050, requiring new electric capacity equivalent to the combined output of the US, EU and Japan today.

Transitioning to high-performing equipment is a cost-effective means to reduce cooling energy use. Chillers are the key piece of equipment in large central air condition systems used for office and commercial complexes, and to cool products and machinery for many industrial processes. IEA data show that the most efficient chillers use one quarter as much power per unit of cooling as the least efficient units, pointing to a significant opportunity for efficiency improvements. But there are challenges to setting performance requirements for them, particularly because chiller energy use varies with site-specific design factors and environmental conditions.

A new paper published in *WIREs Energy and Environment* studies how regulators in India developed a chiller energy efficiency policy to drive a transformation of the market toward high-performing products. Throughout the six-year policy development process, regulators maintained a flexible approach to addressing novel challenges that arose. The new standards took effect in January 2019 and are projected to reduce energy use by 4 TWh and carbon emissions by 3.5 megatons annually by 2030. The case study highlights how policymakers can overcome barriers to regulating complex equipment in pursuit of national energy and climate goals.

At the outset, India’s Bureau of Energy Efficiency (BEE) faced a lack of chiller performance data. Working closely with CLASP, an international non-governmental organization that focuses on appliance energy performance, BEE learned that purchasers lacked comparative data because chiller energy use depends heavily on local temperature and humidity conditions. To enable meaningful product comparisons, BEE expanded use of a customized seasonal energy efficiency metric, which at the time was under development for room air conditioners, to apply to chillers as well.

Regulators also faced a lack of established national or international test methods to evaluate chiller energy performance. The Bureau of Indian Standards developed a new test method based on proprietary work by the Air Conditioning, Heating, and Refrigeration Institute (AHRI) and other industry groups. The Indian test method built from those inputs to reflect domestic weather and cooling use data, and integrated new measures for quality, safety, noise output, and energy efficiency. BEE offers technical support to domestic laboratories interested in becoming accredited on the new test method.

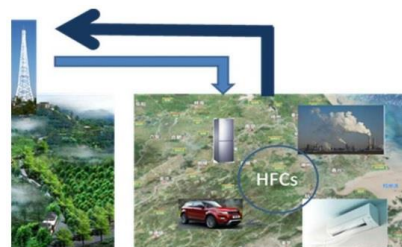
"In developing the chiller efficiency policy, Indian regulators deviated from the traditional standards development process to address the challenges presented by this complex, highly variable equipment," said P.K. Mukherjee, the study's lead author. "Other governments seeking to mitigate the energy and climate impacts of growing cooling energy demand can also benefit from this responsive approach."

Reference: P. K. Mukherjee, et al. '[Staying cool: The development of India's pioneering energy efficiency policy for chillers](#),' *WIREs Energy and Environment* (2020). DOI: 10.1002/wene.372

[Advanced science news, April 2020, By Jenny Mandel](#)

8. Scientists find a high hydrofluorocarbon emissions intensity in the Yangtze River Delta region

Hydrofluorocarbons (HFCs) have been widely used as substitutes for ozone-depleting substances—for example, hydrochlorofluorocarbons (HCFCs) and chlorofluorocarbons (CFCs). Though HFCs have no impact on the ozone layer, they are also long-lived potent greenhouse gases with global warming potentials as high as CFCs, meaning HFCs are regulated by both the Montreal Protocol as well as the Kyoto Protocol. China is a major consumer of HFCs around the world. How to estimate HFC emissions as accurately as possible is therefore a key issue to understand regional contributions, especially for potential emission source areas.



Atmospheric observations at Lin'an Background Station can quantify the HFC ...

In a recently published study in *Advances in Atmospheric Sciences*, Dr. Bo Yao from the China Meteorological Administration worked with local scientists in Zhejiang Province, and together they estimated the emissions of HFCs in the Yangtze River Delta (YRD) region by a tracer ratio method for the period 2012-2016.

"The YRD region is a fast-growing region in China with rapid urbanization and industrialization," explains Dr. Yao, who is the Chief Scientist of greenhouse gases at the Meteorological Observation Center of the China Meteorological Administration. Dr. Yao further explains why the YRD was selected as the target of their study: "Rapid economic growth has been partly driven by the expanding manufacturing sector, including the fluorine chemical industry, production of electronics, air conditioners, refrigerators and automobiles, which would result in a large amount of HFC emissions."

Yao's team chose CO as a tracer to estimate the HFC emissions. "We employed the tracer ratio method, for it is more objective than the bottom-up inventory approach and easier than the top-down method by inverse modeling," he adds. The team found that the YRD contributes around one third of the national total HFC CO₂-equivalent emissions. The emissions intensity of HFCs in this area is also higher than both national and global levels, in terms of per capita, per unit area, or per unit GDP.

Ten HFC species were studied, among which HFC-23 was found to contribute approximately two thirds of all HFC emissions in terms of CO₂-equivalent emissions in the YRD. "HFC-23 is a byproduct from the fluorine industry, or very limited fluorine chemistry plants, in the YRD. If HFC-23 emissions were totally eliminated, the HFC CO₂-equivalent emission in the YRD would drop down obviously, and the emissions intensity of the YRD would be lower than national and global levels. So, HFC-23 is the key chemical when considering the mitigation potential of HFCs in the YRD, or even in China as a whole," suggests Yao.

[Phys.org, 19 May 2020](#), by [Chinese Academy of Sciences](#)

9. Exec gets prison for banned chemical (China)

The country's top environmental authority reiterated the country's zero-tolerance policy toward the illegal production and consumption of ozone depleting substances as a local court in Zhejiang province handed down the country's first prison sentence for environmental pollution related to the chemical.

The legal representative of Minghe Thermal Insulation Material Co in the province's Huzhou city - whose name was only disclosed as Qi - was sentenced to 10 months in prison by the Deqing county people's court on Monday.

Qi was also fined 50,000 yuan (\$7,060), while the company was fined 700,000 yuan.

According to the Zhejiang High People's Court, the company had been using CFC-11, which has been banned in China since 2010.

The company also forfeited more than 1.4 million yuan in profits derived from its use of the chemical over the past three years, it said.

The case was unearthed during a two-month campaign launched by the Ministry of Ecology and Environment in 2019 to eliminate illegal production and consumption of ozone depleting substances.

Four other people from Shandong, Henan and Jiangsu provinces who supplied the substance to the Zhejiang company were also arrested, it said.

The ministry applauded the case as one that "fully shows the country's zero-tolerance attitude against illegal activities related to ozone depleting substances".

"The Chinese government has always attached great importance to international environmental conventions and has been resorting to strict law enforcement as a major guarantee to safeguard the achievement China has made in implementing these conventions," the ministry said in a media release. [...]

[China Daily, 29 April 2020](#), By [Hou Liqiang](#)



Students draw picture for protecting ozone at a primary school in Qinhuangdao, Hebei province, Sept 13, 2018. [Photo/VCG]

LATIN AMERICA and CARIBBEAN

10. Instituciones de gobierno participan en videoconferencia sobre el Protocolo de Montreal

Representantes de varias instituciones de gobierno y organismos ambientalistas participaron este jueves en una videoconferencia sobre el contenido del Protocolo de Montreal.



El videoconferencia se llevó a cabo en el Ministerio del Medio Ambiente y los Recursos Naturales (Marena), donde los delegados nicaragüenses interactuaron con los especialistas Agustín Sánchez Guevara y Guillermo Castella expertos de la Organización de las Naciones Unidas.

El Protocolo de Montreal es un acuerdo del Convenio de Viena para la protección de la capa de ozono, diseñado para reducir la producción y el consumo de numerosas sustancias que reaccionan con la capa de ozono y se cree que son responsables del agotamiento de la misma. El acuerdo fue negociado en 1987 y entró en vigor el 1 de enero de 1989.

Javier Gutiérrez, viceministro del Marena, dijo que los expertos que impartieron la conferencia son de mucha trayectoria científica en lo relativo a ese protocolo que regula los gases que afectan la capa de ozono.

También esto está vinculado a la problemática del calentamiento global y el cambio climático, temas que fueron abordados por los especialistas precisamente sobre la situación que llevará a la nueva normalidad, ya que hay mucha información de que esos gases se están reduciendo.

“Por eso vamos a discutir qué va a pasar en la nueva normalidad en que estos gases se puedan disparar y de ocurrir eso esto nos va a afectar el calentamiento global y nos puede traer otros problemas”, indicó.

“Por eso ahora Nicaragua se suma a esas discusiones y así nosotros tomar acciones, ya que nosotros tenemos compromisos de ir reduciendo estos gases a través del Protocolo de Kyoto y la enmienda de Kigali”, dijo el funcionario gubernamental.

Recordó el viceministro del Marena que Nicaragua viene cumpliendo con los compromisos ambientales que suscribió como país y donde el Gobierno sandinista ha sido reconocido.

“Tenemos compañeros y compañeras que están ocupando cargos en representaciones de Latinoamérica en cambio climático, en certificación y también en el Protocolo de Montreal tenemos presencia y reconocimiento”, añadió el viceministro. Además del Marena en la videoconferencia participaron representantes de todas las instituciones del Gobierno de Reconciliación y Unidad Nacional, la Juventud Sandinista,

el Movimiento Ambiental Guardabarranco, academias y técnicos del sector de refrigeración.

El 19 digital, 21 de Mayo 2020 | Edgard Barberena

NORTH AMERICA

11. Changes to Environmental Provisions of the USMCA Trade Agreement

The original text of the United States-Mexico – Canada Trade Agreement (“USMCA”) was amended by the Parties to the Agreement to clarify certain commitments made with respect to environmental and trade matters. These amendments sought to clarify that the Agreements listed below could not be used to impair, modify or reduce the rights of investors and their investments made in accordance with the provisions of USMCA:

- Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), done at Washington, March 3, 1973.
- **Montreal Protocol on Substances that Deplete the Ozone Layer, agreed in Montreal, September 16, 1987.**
- Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, done at London, February 17, 1978.
- Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, signed at Ramsar, Feb. 2, 1971.
- Convention on Antarctic Marine Living Resources, formed in Canberra, May 20, 1980.
- International Whaling Convention, signed in Washington, Dec. 2, 1946.
- Inter-American Tropical Tuna Convention, signed in Washington, May 31, 1949.

In the event that one of the Parties to the USMCA believes that an investment made by one of its nationals has been impaired, modified or reduced because of one of the above-named Agreements, it must follow the procedures set out in Article 31.4 of the USMCA, which requires the Parties to make an effort to resolve the issues in question. If the Parties are unable to reach a resolution on their own, the matter will be submitted to a Panel. The Party which has implemented the measure allegedly impairing, modifying or reducing rights under the USMCA has the burden of proof to demonstrate there is no such effect.

The National Law Review, 18 May 2020

PROTOCOL OF AMENDMENT
TO THE
AGREEMENT BETWEEN THE UNITED STATES OF AMERICA, THE UNITED
MEXICAN STATES, AND CANADA

The Governments of the United States of America, the United Mexican States, and Canada,
Desiring to amend the Agreement between the United States of America, the United Mexican
States, and Canada, done at Mexico, D.F., on November 18, 2018 (hereinafter “the
Agreement”),

HAVE AGREED to amend the Agreement as follows:

1.

A. In Chapter 1 (Trade in Goods and General Definitions) after Article 1.2
and Article 1.3 (as amended) insert the following article, beginning
with the words “Article 1.3”:

“Article 1.3. Relation to Environmental and Conservation Agreements

1. In the event of any inconsistency between a Party’s obligations under
the Agreement and its respective obligations under the following multilateral
environmental agreements (“covered agreements”):

(a) the Convention on International Trade in Endangered Species of
Wild Flora and Fauna, done at Washington, March 3, 1973, as
amended;

(b) the Montreal Protocol on Substances that Deplete the Ozone
Layer, done at Montreal, September 16, 1987, as amended and
amending;

(c) the Protocol of 1978 Relating to the International Convention
for the Prevention of Pollution from Ships, 1978, done at
London, February 17, 1978, as amended;

(d) the Convention on Wetlands of International Importance
especially as Waterfowl Habitat, done at Ramsar, February 2,
1971, as amended;

(e) the Convention on the Conservation of Antarctic Marine Living
Resources, done at Canberra, May 20, 1980;

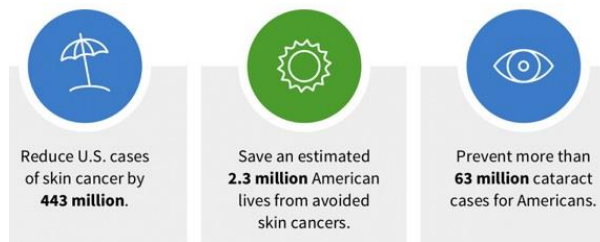
(f) the International Convention for the Regulation of Whaling,
done at Washington, December 2, 1946, and

“and the purpose of the proposed (“covered agreement”) shall encompass the multilateral environmental
agreements listed above and any other multilateral environmental agreement that is entered into and
applies to the Parties and (“covered agreement”) shall be a multilateral environmental
agreement.”

12. Atmospheric and Health Effects Framework Model Estimating Ultraviolet Radiation-induced Health Effects

The Atmospheric and Health Effects Framework (AHEF) model is used by the EPA to evaluate human health effects associated with a depleted stratospheric ozone layer. It estimates the number of skin cancer and cataract cases and deaths from skin cancer in the United States that will be prevented by protecting the ozone layer, which results in a decrease of the ultraviolet (UV) radiation reaching Earth's surface that causes these diseases. The AHEF combines satellite ozone measurements with projected emissions of ozone-depleting substances (ODS) and demographic data to estimate the probable difference in deaths and skin cancer/cataract incidences by comparing different ODS emissions scenarios. Example scenarios include: no *Montreal Protocol on Substances that Deplete the Ozone Layer* (Montreal Protocol); the original 1987 Montreal Protocol; and the Montreal Protocol as amended and adjusted.

This May 2020 report estimates that full implementation of the *Montreal Protocol on Substances that Deplete the Ozone Layer* is expected to prevent approximately 443 million cases of skin cancer, 2.3 million skin cancer deaths, and 63 million cases of cataracts for people in the United States born in the years 1890–2100.



The AHEF estimates the incidences of cutaneous malignant melanoma (melanoma) and keratinocyte skin cancer. Melanoma is a potentially life-threatening disease and is the most serious type of skin cancer. It occurs most frequently in persons over age 40 with light complexion and hair color. Keratinocyte cancer, or “non-melanoma skin cancer,” includes squamous cell carcinoma, basal cell carcinoma, and several other rare types. The AHEF also models incidences of cataract, which is a clouding of the eye’s naturally clear lens that can block vision and cause blindness. While cataract related to age can have a number of potential causes, lifelong exposure to UV radiation can play a big role.

The AHEF model is continually being updated to use the most recent data on ODS emissions, ozone depletion, UV exposure, demographics, and human health effects. From new scientific findings to updated population data, the AHEF model has been regularly revised since it was created to present the most up-to-date information.

The 2020 version incorporates changes to various atmospheric and chemical parameters, updated population data, changes to methodologies, and modernization and streamlining of the underlying computer code.

[The United States Environmental Protection Agency](#)

See also >>> [Montreal Protocol likely to avert 443 million skin cancer cases in the United States](#)

EUROPE & CENTRAL ASIA

13. Track legal obligations with the new EU Chemicals Legislation Finder

European Chemicals Agency (ECHA) new online service, the EU Chemicals Legislation Finder (EUCLEF), gives companies access to a free-of-charge overview of 40 pieces of EU chemicals legislation they may need to comply with.

EUCLEF's launch, information on 40 pieces of EU chemicals legislation is now easily accessible in one place, bringing clarity to companies, in particular for SMEs, on which pieces of legislation apply to their substances.

Integrated into ECHA's chemicals database, companies can use EUCLEF to navigate through the EU chemicals legislative framework and find relevant information on how their substances are regulated across the EU. This will give businesses a better understanding of the obligations they might have so they can ensure they are legally on the market.

The first version of the finder covers legislation dealing with air and water quality, worker protection, pesticides, food contact materials, cosmetic products, toy safety and many more. A further 16 pieces of legislation are planned to be added to EUCLEF in 2021.

"EUCLEF will be really helpful for companies, especially SMEs, who need to track their obligations across different EU laws. Small businesses are the backbone of Europe's chemicals industry. EUCLEF will help them save time and money and to focus on what really matters, innovating and growing their business while safeguarding our health and the environment," says Bjorn Hansen, ECHA's Executive Director.

A dedicated regulatory support service has also been made available so that companies can ask questions about all the different EU chemicals legislation covered by EUCLEF.

EUCLEF is funded by the EU Programme for Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME).



- [European Union Chemicals Legislation Finder](#)
- [Video tutorial: Navigating EUCLEF](#)
- [Europe's programme for small and medium-sized enterprises](#)

- [Contact regulatory support](#)

[European Chemicals Agency, March 2020](#)

14. Digital Tools for RAC Servicing - Remote Control at the Time of Lockdown – Webinar

Friday, 5 June 2020, at: 11:00 AM - 12:30 PM CEST
- [Show in My Time Zone](#)

Following national success, Centro Studi Galileo is extending its free educational offer to international students, such as HVACR Technicians, design engineers and RAC companies, hosting its first ever webinar in English language: “Digital Tools for RAC Servicing - Remote Control at the Time of Lockdown”.



[Register](#)

The topic will be presented by speakers from Carel - Italian leader in control technology and humidification for the RAC sector, and Fieldpiece - America's reference manufacturer for HVACR measurement tools.

The main purpose of this webinar is deepening the knowledge on remote control technology for the HVACR sector, ever so important at these times of social distancing. For this reason, on June 5th you may wish to join us online to get the latest insights into:

- "From Descriptive to Prescriptive: the New Era of Digital Services for HVAC/R Applications" Gabriele Putzolu, IoT Service Business Development Manager | Carel Industries
- "How to Use Wireless HVACR Instrumentation to Help You Perform Your Job More Efficiently" Tony Gonzalez, Technical Training Manager | Fieldpiece Instruments

During these crucial weeks of global lockdown, Centro Studi Galileo increased the online learning tools available to its students. This included a series of webinars, co-organized with CSG's many leading partner companies, that met a huge interest within the Italian audience, uploaded on CSG's YouTube playlist. Thanks to this great learning tool, a broad range of up-to-date topics was brought to national RAC contractors, for their continuous professional update.

[Centro Studi Galileo, June 2020](#)

15. Test your HVAC&R knowledge in Star's Weekly Quiz

Participants in 'The Star Pupil Quiz' can win prizes while updating their knowledge of the industry.

Star Refrigeration, a Glasgow, U.K. based industrial refrigeration company, is running a weekly online quiz on HVAC&R topics, which will help professionals keep their knowledge up-to-date while giving them the chance to win prizes.



"The Star Pupil Quiz," announced May 5, 2020 on Star Refrigeration's [website](#), is based on Continuing Professional Development (CPD)-certified "video presentations featuring industry experts speaking at events, seminars and conferences.

The quizzes are aimed at end users, consultants, construction companies, architects and engineers working in industries associated with industrial refrigeration and HVAC, says Star.

"Professionals connected to our industry are currently adapting to a new home-based working environment, due to the COVID-19 lockdown," said Rob Lamb, Group Sales and Marketing Director at Star Refrigeration.

"We hope that our Star Pupil Quiz will encourage them to consider engaging in some proactive online learning to enhance their skillset."

Every week, a video is uploaded featuring a different aspect of HVAC&R. Participants in the quiz watch the video, and afterwards answer three questions, with a chance of winning a £25 (\$35.85) Amazon gift voucher.

In May, Star's quizzes are covering "topics such as minimizing energy costs, improving efficiency, and plant installation, maintenance and aftercare. The current quiz – based on a talk by Aiden Perks, SalesManager at Star Refrigeration, on ammonia and CO₂ refrigeration solutions – is available [here](#).

All correct entries are entered into a draw, and "the winner each week will be selected at random and crowned 'Star Pupil,'" according to the website.

The quiz is part of Star Refrigeration's commitment to CPD, which helps "individuals, organizations and entire industries to keep skills and knowledge up-to-date," says Star.

Prospective players can keep up with the weekly quizzes by checking Star Refrigeration's website, or by following Star's social media accounts:

Twitter: <https://twitter.com/StarRefrig>

LinkedIn: <https://www.linkedin.com/company/star-refrigeration/>

Facebook: <https://www.facebook.com/starrefrig>

Ammonia21, 13 May 2020, By Nicholas Cooper

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 >>>](#)

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](#)



Click [here](#) for Montreal Protocol upcoming Meetings Dates and Venue.

Recent Meetings:

- [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



[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

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

Dear 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.

Our 107 team institutions and about 1000 staff members, a number of our Regional Offices and Thematic Working Groups have been confirmed. Please assured that the CAP teams are working in full capacity to continue this important and to re-include all implementation plans that the situation allows, in the meantime, our Regional Commissions are continuing with the Operational Support activities, in particular technical assistance and awareness-raising activities.

And the six national authorities for CAP teams have had to adjust CAP team personnel and staff levels to respond to their own conditions. All of our CAP are now working to ensure that our teams are able to continue to provide the highest quality of support to your countries. There are also continued work with other UN agencies and its UNFIP implementation through coordination, joint and shared. They are all online and available for communication with all National Ozone Officers.

Since 1987, UNEP OzonAction has been and will continue to be the implementation of the Montreal Protocol and will continue to work with you and your country's compliance partnership. We will continue to work with you during challenging times such as during this pandemic.

OzonAction is here to support you. If you have any needs, challenges, or feedback, we will share your situation, please reach-out and contact any member of OzonAction, including the Regional CAP teams or myself.

So safe and easy communication, our services and your individual health.

Yours sincerely,
James S. Curlin
Acting Head, 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](#)

The new updated OzonAction GWP-ODP Calculator Application
“Quickly, efficiently and accurately convert between values in metric tonnes, ODP tonnes and CO₂-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, CO₂-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 CO₂-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 CO₂-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 CO₂-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, CO₂- 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 7044⁴). 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 hydrochlorofluorocarbons (HCFCs). Those chemicals, which are primarily used as refrigerants for air conditioners and fridges, are controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer and are being phased out by all countries according to a specific timeline.



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 Officers

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](#)

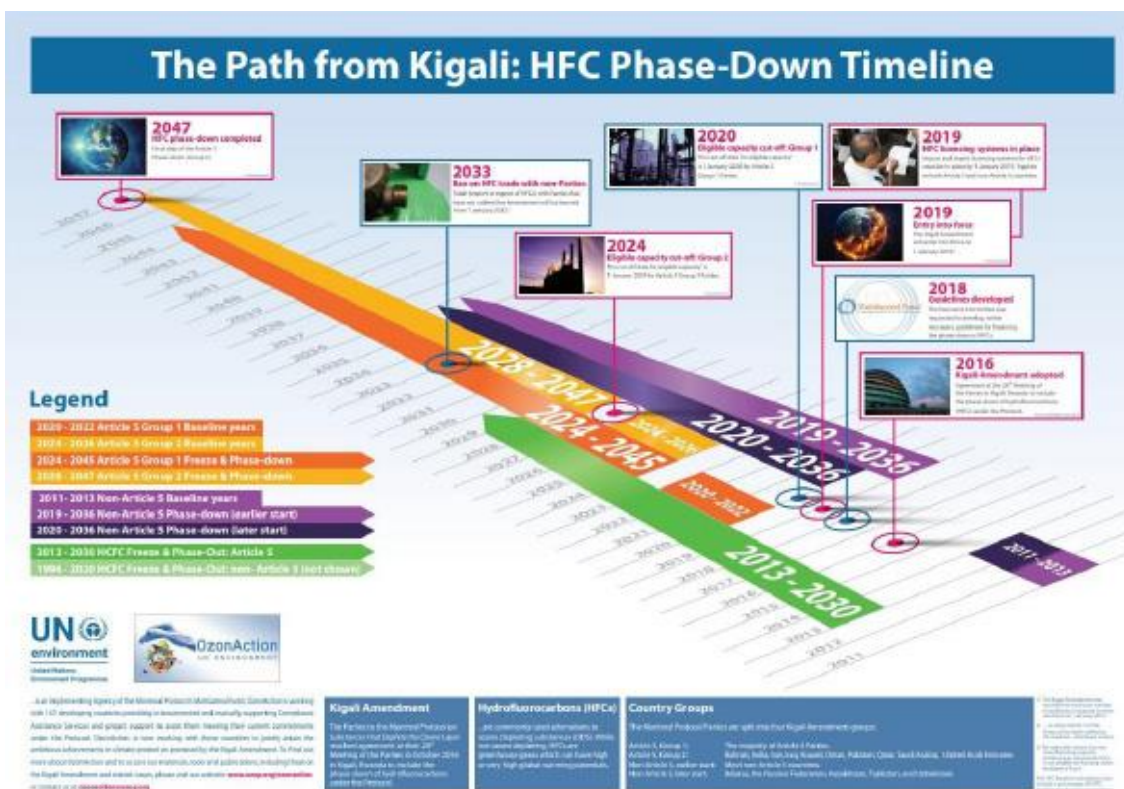
Contact: [Ezra Clark](#), UNEP, OzonAction



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.

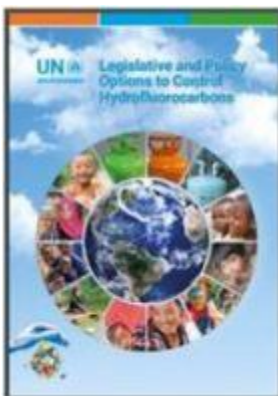
This application, consisting of short instructional videos on techniques, safety and best practice, serves as a complementary training tool for refrigeration and air-conditioning (RAC) sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training.

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)

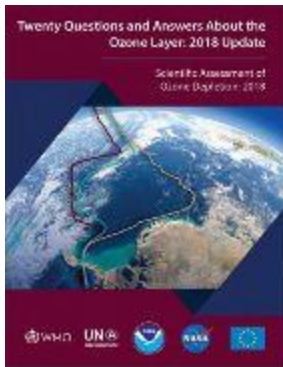
PUBLICATIONS



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 CO₂-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.

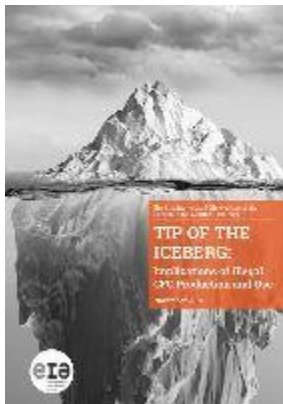
Access the International Dictionary of Refrigeration on the [IIR website](#)



life
front

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, 2006-2018/1994-2019 - 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. 4 - 2020
(in Italian language).



COVID-19: Regular and correct maintenance of ventilation systems - General Eurovent recommendations for equipment care during the coronavirus pandemic.

In this GENERAL Document, Eurovent presents general and basic recommendations on the operation of ventilation systems during the coronavirus pandemic.

The document also provides additional sources of information on COVID-19.

[Read/download](#)



A new approach to define safe charge limits for flammable refrigerants - The LIFE FRONT project has just released its latest report entitled "**Recommendations for the revision of safety standards for RACHP equipment**".

LIFE FRONT is an EU-funded project that aims to remove barriers posed by standards for flammable refrigerants in refrigeration, air conditioning, and heat pump (RACHP) applications. With this new report, it provides project results from the laboratory testing as well as recommendations on measures to minimize concentrations of flammable refrigerants in the case of a leak; implementation of mitigation measures performance testing; and increasing charge size flammability risk focusing on smaller devices as described in the access categories 'a' and 'b' in the EN 378-1 (2016) Standard. [...]

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.



International Observers - New AREA membership category

Due to the significant worldwide interest in European legislative developments and the increase in competence of personnel who handle new refrigerants, AREA is pleased to introduce its brand new "International Observer" membership category. This provides a fantastic opportunity for non-European RACHP installer bodies the world, to benefit from the expertise and discussions within Europe through access to AREA.

Contact: info@area-eur.be



GIZ Proklima Cool Training is a series of international trainings on the safe use of natural refrigerants in the refrigeration and air-conditioning (RAC) sector. Launched in 2014, these trainings have since supported the worldwide promotion of sustainable cooling technologies by providing training on the safe handling of natural refrigerants. Main target group are international RAC technicians and trainers as well as political decision makers from developing countries and emerging economies. Depending on the training program, the courses are offered as one-week or two-week packages aiming at NOU representatives and technicians, respectively.

Schedule 2020

- Technician Training: 4-15 May 2020
- Policy Training: 2-5 June 2020 (in English/French)
- Policy Training: 15-19 June 2020 (in Spanish)

[Learn more >>>](#)



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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

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