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OzoNews

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



Volume XX | 15 July 2020

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GLOBAL

1. Kigali Amendment latest ratification

Congratulations to the latest country which has ratified the Kigali Amendment:

[Liberia, 12 July 2020](#)

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

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

[United Nations Treaty Collection](#)



2. 42nd Meeting of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (OWG 42), 14-16 July 2020 | Online



Highlights from the Meeting

Tina Birmpili, Executive Secretary, Ozone Secretariat, welcomed delegates during this "strange and difficult time for all of us" as the COVID-19 pandemic continues to take a toll on countries across the globe. Reminding delegates that the online technical session addresses the Technology and Economic Assessment Panel (TEAP) Replenishment Task

Force's report on the replenishment of the Multilateral Fund (MLF) for 2021-2023, she asked that as delegates consider the MLF replenishment needs, they bear in mind the need to "build back better" after the pandemic.

TEAP Task Force Co-Chairs Bella Marañon, Suely Carvalho and Shiqui Zhang presented their report, noting that the report takes into account, among others, the need to allocate resources for: the special needs of those countries whose consumption of ozone depleting substances is classified as low-volume-consuming (LVC) and very-low-consuming; developing country (Article 5) parties to achieve and/or maintain compliance with the Protocol's control measures; and Article 5 parties to comply with the Kigali Amendment on hydrofluorocarbons (HFCs). They provided an overview of the methodologies and scenarios used, including how Indicative figures for transitioning to low-or zero-GWP alternatives to hydrochlorofluorocarbons (HCFCs) were obtained. They stated that for the triennium 2021-2023, the Task Force had estimated funding requirements to range from USD 376,697,000 to USD 808,706,000.

Despite some technical difficulties, delegates participating in the session were able to engage in a fruitful discussion with the Task Force and put forward their concerns and queries for further clarification.

During the discussion, parties called for estimates on HFC disposal costs to be included and urged further Task Force consultations on the needs of LVCs.

They lamented that funding for institutional strengthening may be insufficient. Parties queried the data sources and methodologies used to obtain funding estimates. In particular, they asked for clarification on figures for the HFC phasedown.

Parties also highlighted the importance of creating centres of excellence for LVC countries to aid in capacity building, and consideration of the potential impact of COVID-19 on future activities.

As it is "business unusual" for the work of the Montreal Protocol, the online forum will reopen from 17-31 July 2020 to allow parties to have another opportunity to submit additional comments and questions on the TEAP Task Force's report that have not yet been addressed. The OEWG 42 Co-Chairs will then compile and share these submissions with all parties.

The TEAP will not prepare its customary supplementary report in September as that report responds to a negotiated list of additional issues and requests from parties; instead TEAP will respond to parties' queries in the form of a note. The Co-Chairs' compilation of comments and questions will serve as the basis for any negotiations that may take place.

The technical sessions, co-chaired by Alain Wilmart (Belgium) and Obed Baloyi (South Africa), took place online over three days—14, 15 and 16 July 2020—with each identical session addressing the sole issue of the TEAP Replenishment Task Force's report on the MLF replenishment for 2021-2023.

Due to the COVID-19 global pandemic, OEWG 42 was unable to meet in Montreal, Canada as originally planned. The joint 12th session of the Conference of the Parties to the Vienna Convention (COP 12) and 23rd session of the Meeting of the Parties to the Montreal Protocol (MOP 23) is tentatively scheduled to take place in November 2020 in Tashkent, Uzbekistan.

The Ozone Secretariat will inform parties by September 2020 if COP 12/ MOP 23 is unable to take place and notify them of alternate arrangements.

IISD, through its *Earth Negotiations Bulletin* Meeting Coverage, provided daily web coverage of the online technical sessions and will publish a summary report and brief analysis of the event on Monday, 20 July 2020.

OEWG 42 Resources

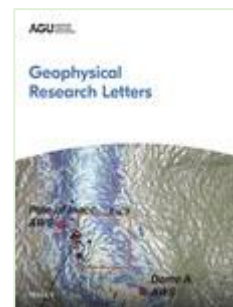
- [OEWG 42 Website and Documents](#)
- [OEWG 42 Provisional Agenda](#)
- [Overview for the Meetings of the Ozone Treaties in 2020-2021](#)
- [Ozone Secretariat Website](#)

[IISD/ENB, 14-16 July 2020](#)

3. Record-low Arctic stratospheric ozone in 2020: MLS observations of chemical processes and comparisons with previous extreme winters

Abstract

Aura Microwave Limb Sounder (MLS) measurements show that chemical processing was critical to the observed record-low Arctic stratospheric ozone in spring 2020. The 16-year MLS record indicates more polar denitrification and dehydration in 2019/2020 than in any Arctic winter except 2015/2016. Chlorine activation and ozone depletion began earlier than in any previously observed winter, with evidence of chemical ozone loss starting in November. Active chlorine then persisted as late into spring as it did in 2011. Empirical estimates suggest maximum chemical ozone losses near 2.8 ppmv by late March in both 2011 and 2020. However, peak chlorine activation, and thus peak ozone loss, occurred at lower altitudes in 2020 than in 2011, leading to the lowest Arctic ozone values ever observed at potential temperature levels from ~400—480 K, with similar ozone values to those in 2011 at higher levels.



Summary

Unlike the Antarctic, the Arctic does not usually experience an ozone hole because temperatures are often too high for the chemistry that destroys ozone. In 2019/2020, satellite measurements show record-low stratospheric wintertime temperatures and record-low springtime ozone concentrations in the Arctic lower stratosphere (about 12--20 km altitude). Only one other winter/spring season, 2010/2011, in this 16-year satellite data record comes close. Low temperatures, which result in chlorine being converted from non-reactive forms into forms that destroy ozone, started earlier than in any previous Arctic winter in the record and lingered later than in any year except 2011. The ozone-destroying chemistry in 2019/2020 occurred at lower altitudes (where more of the ozone that filters out harmful ultraviolet radiation resides) than in 2010/2011. Such extensive ozone loss can have important health and biological impacts because it leads to more ultraviolet radiation reaching the Earth's surface. While the success of the Montreal Protocol in limiting human

emissions that increase ozone-destroying gases in the stratosphere has resulted in much less Arctic ozone destruction than we would have otherwise had, future temperature changes could lead to other winters with even more chemical ozone depletion than in 2019/2020.

Authors: Gloria L. Manney Nathaniel J. Livesey Michelle L. Santee Lucien Froidevaux Alyn Lambert Zachary D. Lawrence Luis F. Millán Jessica L. Neu William G. Read Michael J. Schwartz Ryan A. Fuller

[American Geophysical Union \(AGU\), 17 July 2020](#)

4. Over one billion at risk from lack of sustainable cooling access as COVID-19 intensifies challenge

As the world tries to recover better from the pandemic, access to sustainable cooling is critical to ensure nutrition, health and safety of the most vulnerable.

With significantly higher rates of poverty and malnutrition forecast throughout the year due to COVID-19, a new report from Sustainable Energy for All (SEforALL) shows that without access to sustainable cooling, countries will struggle to fully recover. [Chilling Prospects: Tracking Sustainable Cooling for All 2020](#) finds that over one billion people still lack cooling access, with the pandemic intensifying the challenge ahead just as peak summer temperatures hit for many.

The report looked at 54 countries and finds that 1.02 billion people lack cooling access and remain at high risk, with just 22 million people gaining access to adequate refrigeration, a reliable fan, air conditioning or other solutions since last year's report. A further 2.2 billion lower-middle income people present another major challenge – they are only able to afford cheaper, less energy efficient air conditioners which will almost certainly increase global energy demand and profound negative climate impacts.

New *Chilling Prospects* analysis also shows that the developing world will face a significant 'productivity penalty' without access to sustainable cooling. The 54 high-impact countries already face an estimated annual economic loss of USD 630 billion due to heat stress, including a USD 301 billion loss in the agricultural sector that many countries rely on for economic development. Evidence also suggests that outdoor and migrant workers, as well as women and girls, are most vulnerable.

As the global community rushes to produce a COVID-19 vaccine, Chilling Prospects highlights the inequities in the vaccine cold chain that resulted in over 13.5 million people in the world's least developed countries missing a vaccine by April, with an estimated 117 million children at risk of missing another temperature-sensitive vaccine against measles. The report also highlights the need to build cold chains for a COVID-19 vaccine. Close to half of the vaccine candidates currently in Phase 1 or later trials would require storage in a



Over one billion at risk from lack of sustainable cooling access as COVID-19 intensifies challenge

-80°C cold chain, which would require building a new cold chain for low-income countries.

“As the world faces a reset moment from the COVID-19 pandemic, it’s clear that cooling for all is necessary to recover better. We must accelerate access to energy efficient, sustainable cooling solutions that will protect people against the immediate public health and safety concerns caused by the pandemic, as well as support long-term economic recovery,” said Damilola Ogunbiyi, CEO and Special Representative of the UN Secretary-General for Sustainable Energy for All and Co-Chair of UN-Energy.

“Sustainable cooling underpins the Sustainable Development Goals. From access to nutritious food, safe medicines and protection from extreme heat, sustainable cooling is not a luxury – but a critical service needed to deliver a safe, prosperous future for all. As countries seek to recover better from the pandemic, access to cooling must be part of their economic recovery plans.”

This Chilling Prospects data can help states to identify the best solutions for their citizens based on income, temperature and cooling appliance. SEforALL recently published [guidelines on how countries can ‘recover better’](#) from the pandemic by investing in sustainable energy to help close electricity access gaps. This is critical to deliver lifesaving medicines as unreliable electricity further compounds the challenge of powering cold chains, especially in countries across sub-Saharan Africa where only 28% of health facilities have reliable electricity access.

To coincide with the release of the *Chilling Prospects* report, Sustainable Energy for All has also launched a new campaign to shine a light on innovative sustainable cooling solutions. The [‘#ThisIsCool’](#) campaign is a celebration of sustainable cooling solutions and aims to bring greater awareness and engagement with solutions that can offer faster progress on global climate and energy goals.

“Cooling for all does not mean an air conditioner or a refrigerator in every home; it means providing more sustainable and affordable solutions to address the needs of the vulnerable without exacerbating the climate crisis or causing a spike in energy demand,” said Brian Dean, Head of Energy Efficiency and Cooling at Sustainable Energy for All. *“The good news is there are already a wide range of sustainable cooling solutions that, with the right policy and financial support from governments, can help lower energy demand, reduce GHG emissions, bring better quality of life and deliver faster progress on the Paris Agreement.”*

#ThisIsCool will highlight different technologies, solutions and policy and finance measures that can meet growing cooling needs. This will also include a new Cooling for All Solutions Assessment toolkit that will support governments, financiers and communities to provide cooling access that will support healthcare, human comfort and safety, as well as food and nutrition. Showcasing and implementing a range of solutions is essential to build an enabling environment that allows greater investment in sustainable cooling solutions and achieve the long-term benefits of providing cooling for all.

Read more about the new #ThisIsCool campaign [here](#) or take part online by using #ThisIsCool in social media posts to show your cooling solutions.

Chilling Prospects data continues to draw attention to the direct intersection between three internationally agreed goals: The Sustainable Development Goals; the Paris Climate Agreement; and the Montreal Protocol’s Kigali Amendment. One of the key goals of the

Kigali Amendment is to limit consumption and production of hydrofluorocarbons (HFCs), a potent greenhouse gas used widely in air conditioners and refrigerators.

The *Chilling Prospects* report is produced under SEforALL's Cooling for All initiative that is supported by the [Kigali Cooling Efficiency Program \(K-CEP\)](#), the Children's Investment Fund Foundation, and the Swiss Agency for Development and Cooperation. The report also received contributions from the [Global Panel on Access to Cooling](#). Read the report [in full here](#).

[Sustainable Energy for All \(SEforALL\), 16 July 2020](#)

See also >>> ["We need a climate-friendly response to COVID-19's impact on cooling"](#), article in *Accelerate*, Special issue #110, pages: 10-12

5. How air conditioners contribute to inequality and 'energy poverty'

- Imports and use of air conditioning are rising in many countries.
- Households spend as much as 42% more on electricity when they own air conditioners.
- Air conditioning can drive low-income households into energy poverty.

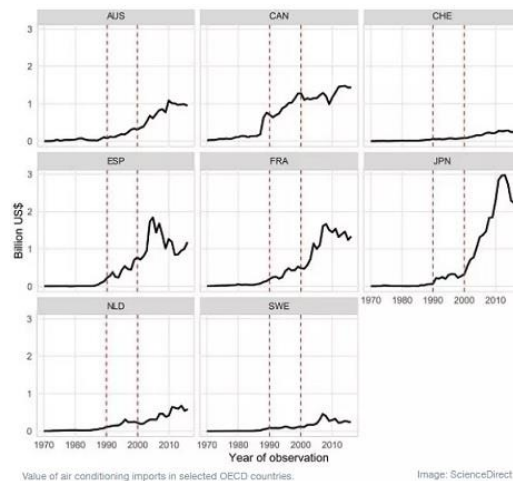
The effects of climate change may more far-reaching than you think.

Hotter temperatures have been linked to a rise in energy poverty, with more people struggling to meet their energy bills from their household income, according to a new study published on [ScienceDirect](#) by researchers from Italy's Ca' Foscari University.

The analysis looks at eight countries – Australia, Canada, France, Japan, the Netherlands, Spain, Sweden, and Switzerland – and investigates how households respond to excess heat. They have found an uptick on the purchasing and use of air conditioners, which has led to a greater consumption of electricity, and a greater proportion of income being spent on energy.

Households spend between 35% and 42% more on electricity when they adopt air conditioning, the study says.

As temperatures increase around the world, cooling is emerging as a new, basic need – even in countries that traditionally have not previously required such appliances.



Value of air conditioning imports in selected OECD countries.

Image: ScienceDirect

That puts an additional burden on families who might not be able to afford the most efficient appliances and could result in spending being diverted away from food or education towards cooling, the researchers write.

“Climate change and the growing demand for air conditioning are likely to exacerbate energy poverty,” the study says. “The number of energy poor who spend a high share of income on electricity increases, and households in the lowest income” groups are the most negatively affected.

Energy poverty is an issue that goes beyond air conditioning, with 800 million people lacking access to electricity and many more struggling with an erratic and limited service.

[World Economic Forum, 6 July 2020, By: Emma Charlton](#)

6. Buildings vs. the Cooling Challenge: Better Building Design to Curb the Massive Rise in Cooling Demand

Buildings vs. the Cooling Challenge: Better Building Design to Curb the Massive Rise in Cooling Demand

BRIAN DEAN
CHRISTIANA HAGENEDER
MARTINA OTTO

click on photos for author details
16 July 2020

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Photo Credit: Dreamstime

KEY HIGHLIGHTS

- “Cool buildings” are designed with knowledge about the local climatic conditions, and adapt smartly to their environment.
- We need to accelerate the uptake of green buildings and enable a supply chain of solutions for cooling that encompasses both building design and efficient technologies.
- On the road to the next climate change conference COP26 in November 2021, we need to bring “cool buildings” to the forefront.

It’s getting hot: sales of ACs are skyrocketing to keep buildings cool

We need “cool buildings” if we want to meet the needs for cooling and fight global warming. [Energy needs for space cooling could triple by 2050](#), especially in hot and tropical countries. Residential buildings are responsible for over two thirds of this increase. Global sales of air conditioning (AC) systems per year have nearly quadrupled since 1990. 2.8 billion people live in places with average daily temperatures above 25°C all year; yet, only 8% of them have an AC. This trend is set to continue and intensify, driven by rising incomes, the expected [doubling of building floor area](#) by 2060, and a warming planet with higher temperatures and more frequent heatwaves.

Buildings are often the problem – but can be the solution

Today, around the globe, malls, offices and residential buildings are being constructed at a breath-taking speed. They often follow standard designs that are not adapted to the climate, using steel, concrete and glass. Poorly designed buildings overheat. To provide thermal comfort, they need an excessive amount of energy for mechanical cooling. This leads to a state of “air-conditioned discomfort” (Ashok Lall), a phenomenon that has also been called the [air-conditioning trap](#).

Changing how we design buildings can be the solution: “Cool buildings” are designed with knowledge about the local climatic conditions, and adapt smartly to their environment. Before the advent of electricity, buildings in hot climates had to stay cool by adapting to the climate. They achieved comfortable living conditions by using long roof overhangs, heavy walls or light structures, natural ventilation, exterior shading, green courtyards and urban design. “Cool buildings” use both old and new strategies to produce comfortable and

healthy living and working conditions. They can limit the massive growth in energy needs for cooling, save money and reduce energy poverty [...]

[IISD/SDG Knowledge Hub, 16 July 2020, Guest article by: Brian Dean, Christiana Hageneder, Martina Otto](#)

7. New UNIDO study helps manufacturers understand net benefits and cost for different energy efficient refrigeration design options

ATLANTA (13 July 2020) — The United Nations Industrial Development Organization (UNIDO) launches its latest guidance document supporting domestic and commercial refrigeration manufacturers seeking to improve energy efficiency and reduce greenhouse gas emissions. This project is funded by the Kigali Cooling Efficiency Program (K-CEP) and supported by International Copper Association (ICA).



Due to COVID-19 restrictions, the study will be launched through a webinar which will present the outcomes of the project and provide insight into how to use the guidance document, analyze changes in manufacturing, evaluate technical and financial options for energy efficient refrigeration equipment and calculate associated emission reductions.

The webinar will be hosted by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) towards an inclusive and sustainable industrial development

Add to your agenda: 22 July 2020, 15:00-16:30 CEST

Click [here](#) free of charge to register

Recordings will be available on [ASHRAE Global Training Centre website](#) following the webinar.

This new study sets out a methodology and tools for manufacturers to understand cost and net benefits for different energy efficient refrigeration design options and the required manufacturing line upgrades.

The COVID-19 outbreak has disrupted cold value chains which are critical for the distribution of foods and vaccines. The refrigeration and air conditioning sector is currently responsible for around 17% of global electricity consumption and, in some developing countries, even exceeds 40 percent of the national electricity demand. In order to reduce the impact on health and the environment, it is vital to improve the energy efficiency of the refrigeration systems and to adopt refrigerants that have zero or low climate impact. [...]

[The American Society of Heating, Refrigerating and Air-Conditioning Engineers \(ASHRAE\), 13 July 2020](#)

8. Cooling Emissions and Policy Synthesis Report: Benefits of cooling efficiency and the Kigali Amendment

FOREWORD

Inger Andersen, Executive Director of the UN Environment Programme and Under-Secretary-General United Nations
Dr. Fatih Birol, Executive Director International Energy Agency

Efficient and climate friendly cooling is a crucial piece of the climate and sustainable development puzzle. We need cooling to protect vulnerable populations from heatwaves, keep vaccines viable and food fresh, and workforces productive. It is essential for equity and development, especially as climate change raises global temperatures.

The global pandemic has emphasized just how important cooling is to society, with many stuck indoors in hot climates during lock-downs and global cooling infrastructure essential to storing and delivering an eventual vaccine. There is, however, a catch.

There are an estimated 3.6 billion cooling appliances in use globally today, and that number is growing by up to 10 devices every second. This growth is set to increase the sector's greenhouse gas emissions dramatically, further warming the planet. Air conditioners are a double burden. In most cases, they use hydrofluorocarbons (HFCs), extremely potent greenhouse gases, and require significant energy to run. Without policy intervention, direct and indirect emissions from air conditioning and refrigeration are projected to rise 90 per cent above 2017 levels by the year 2050.

This report lays out ways to resolve this dilemma by delivering efficient and climate friendly cooling for all – in particular by rapidly phasing down hydrofluorocarbons in the cooling sector and delivering cooling more efficiently through more efficient equipment and more efficient buildings. This report tells us there are many actions we can take to get cooling right.

The Montreal Protocol's Kigali Amendment to phase down HFC refrigerants. Proven policies such as minimum energy performance standards. National Cooling Action Plans. The integration of efficient cooling into enhanced Nationally Determined Contributions of the Paris Agreement. Transformative initiatives like the Cool Coalition. Moving on all of these offers us a chance to slow global warming, improve the lives of hundreds of millions of people, and realize huge financial savings.

As nations invest in COVID-19 recovery, they need to ensure that they use their money wisely to reduce climate change, protect nature and reduce risks of further pandemics. Backing sustainable cooling can help to achieve all of these goals." We hope this report will help to raise awareness about one of the most critical and often neglected climate and development issues of our time.



For policy makers, industry leaders and the general public, we hope it serves as an important guide to the role cooling can play in delivering on our climate and sustainable development goals.

We need to seize this therein-one cooling opportunity. And we need to do it now.

[The United Nations Environment Programme, 17 July 2020](#)

9. 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.

ASIA PACIFIC

10. Mongolia Uses "Right-Sized" Approach to Successfully Hold RAC Training Workshops During COVID-19 Pandemic

The National Ozone Authority (NOA) of Mongolia's Ministry of Environment and Tourism is continuing work without let-up amid the COVID-19 pandemic by building the capacity of the country's refrigeration and air conditioning (RAC) technicians for servicing room air conditioners that use alternative gases, in line with the objectives of the Montreal Protocol on Substances that Deplete the Ozone Layer. This activity is part of the country's early preparation for the ratification of the Protocol's Kigali Amendment and it will help Mongolia meet its initial obligations in this critical sector after it has ratified.

Currently, Ulaanbaatar city is still under a virus-related lockdown with strict controls on movement and social distancing, which has made it impossible for the NOA to conduct any training workshops with the 20 trainees all together. In compliance with the guidelines of the National Emergency Management Agency of Mongolia on COVID-19, the NOA decided to split the training workshop into two, with each workshop having just 10 participants. While this entailed more work for the organisers and trainers, the division into smaller class sizes meant that the required health measures could be respected. Subsequently, two "Training Workshops on Good Practices in Handling R-32 and R-290-based Split Air Conditioners and Heat Pumps in Mongolia" were successfully organised on 19-20 May and 22-23 May 2020.

Lower global warming potential (GWP) refrigerants such as R-32 and R-290¹ are being promoted in the local market as alternatives to the commonly used, high-GWP refrigerants R-22 and R-410A² for split type air conditioners. A transition to lower-GWP alternatives will benefit the phase-out of hydrochlorofluorocarbons (HCFCs), which are being eliminated worldwide under the Montreal Protocol, as well as align with the implementation requirements of the Kigali Amendment.³ However, these alternative refrigerants require additional care and precautions in terms of safety due to their flammability.

Prof. Adiyasuren Ts, the Director of the NOA; Mr. Usukhjargal Ts., the President of Mongolia Refrigeration Association (MRA), Mrs. Enkh-Amgalan Sh., the Head of "Master Skills" Training Center opened the training workshop and emphasised the importance for the RAC technicians to be equipped with knowledge and skills for safe handling of R-32 and R-290 refrigerants to enable the country to adopt these alternatives technologies, and expected the technicians to be more engaged in the training since the class had fewer participants.

In the first half of the theoretical session, the NOA gave the national and international perspectives on the processes for implementation of the Montreal Protocol, the national standards related to refrigeration technology and their importance, as well as trends and good practices in the RAC sector. Participants were then able to appreciate the need to shift to low-GWP technologies in the future. In the second half of the session, the national



master trainers provided theoretical knowledge on the safe handling of flammable and slightly flammable refrigerants such as R-32 and R-290.

On the last day, a practical demonstration session was conducted, in which one of the highlights was the introduction and demonstration of a tool to create joints in pipework through pressure fittings, particularly applicable to flammable refrigerants since it does not require brazing. All participants were able to practice using this tool.

“The training was well received by participants,” said Mrs. Dulamsuren D., the Senior HPMP Officer, NOA, following the completion of the training workshops. The need for such training workshops for flammable refrigerants is much greater now due to the increasing number of equipment based on low-GWP refrigerants appearing in the market.

This training workshop was part of the on-going Enabling Activities Project for HFC phase-down under the Multilateral Fund with UN Environment Programme OzonAction as the Implementing Agency.

1 R-32 or HFC-32 is an hydrofluorocarbon (HFC) with a global warming potential of 675. It is classified as slightly flammable. R-290 or propane is a hydrocarbon, with a global warming potential of <1. It is classified as flammable. Hc=HCFC-32HHC

2 Global warming potential of R-22 = **1810**; Global warming potential of R-410A = **2088**

3 R-32, an HFC, will also need to phased-down according to the Kigali Amendment.

Contact: [Hu Shaofeng](#), Senior Regional Montreal Protocol Coordinator Asia-Pacific, UNEP OzonAction

LATIN AMERICA

11. Switching to Green Cooling could save up to 22% of GHG emissions in Grenada by 2050

The sub-sector which contributes most to GHG emissions in Grenada’s RAC sector is unitary air conditioning (UAC), followed by mobile AC which is used to climatize vehicles. UAC is also projected to undergo the strongest growth in the next decades.

The mitigation scenario, which involves the enactment of regulatory measures to trigger technological advances concerning refrigerant choice and energy efficiency, is expected to achieve substantial emission reduction compared to business as usual (BAU) of approximately 111 kt CO₂-eq annually by 2050 (25 kt CO₂-eq annually by 2030) and thus contribute to Grenada’s overall GHG reduction targets (30% reduction by 2025, and the indicate target of a 40% reduction by 2030



compared to a 2010 baseline). Because of its high unit numbers and strongly increasing market demand, UAC shows by far the largest emission mitigation potential.

Despite a contribution ranging between 18 and 22% of total emissions in the observation period 2010-2050, direct emissions stand out for a relatively high mitigation potential. The impact by direct emission mitigation contributes 38% to the total mitigation potential in 2050 (30% in 2030).

This correlation is largely due to the large gap between different GWP levels. Most currently used refrigerants are high-GWP refrigerants with GWP values between 1,300 and 4,000, while low-GWP refrigerants have GWPs below 10 and make up the more progressive technology transition in the refrigerant mitigation scenario.



Find the full inventory report [here](#)

EUROPE & CENTRAL ASIA



12. Customs seize 14 tonnes of illegal HFC in Rotterdam

NETHERLANDS: The European Anti-Fraud Office's crackdown on the illegal trade in HFCs has led to the seizure of 14 tonnes of illegal refrigerants at the port of Rotterdam.

It has not been revealed the exact refrigerants seized but photographs indicate the shipment included R410A, R32 and R404A. It involved 1,150 cylinders, all of them illegal non-refillables.

The successful seizure is said to have been the result of close cooperation between the European Anti-Fraud Office (OLAF) and authorities in the Netherlands, Lithuania and Poland.

OLAF's investigation began when it identified a suspicious cargo destined for a consignee in Lithuania that was not registered to receive imports of this nature. In addition, the shipment coming from China was initially discharged in the port of Hamburg and declared in transit towards Rotterdam, in the Netherlands, despite the fact that the final destination was Lithuania. Further investigations established that the cargo was destined for a storage facility in Poland.

“The fight against the illegal import of HFCs into the EU is one of OLAF’s operational priorities, in line with the European Commission’s ambition to make Europe the first climate neutral continent by 2050 with its European Green Deal,” said OLAF director-general, Ville Itälä.

“The successful seizure of these dangerous imports once again underlines the importance of accurate intelligence from OLAF and good cooperation with national authorities in keeping people safe,” he added.

After months of denying that the illegal trade was a significant problem, the European Commission’s Anti Fraud Office announced in January that the fight against illegal imports of HFCs was one of its key operational priorities. Since then, it has had a number of notable successes across Europe.

[Cooling Post, 3 July 2020](#)

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

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

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

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

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

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

Eligible enforcement actions include the detection of an illegal shipment and the subsequent seizure, detention or sending back of the disallowed goods, as well as

successful iPIC consultation preventing the issuance of export / import licenses for illegal or unwanted shipments.

Enforcement actions are eligible if they have not been submitted to any other award schemes.

Geographical scope and time period

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

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

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

[Learn more >>>](#)

FEATURED



OZONE SECRETARIAT



Ozone for life: 35 years of ozone layer protection

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

[Learn more](#)

[Overview for the meetings of the ozone treaties in 2020-2021](#)

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

Recent Meetings:

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



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,

In behalf of the United Nations Environment Programme (UNEP) Convention, I would like to express our deep appreciation to your country for its continued and renewed 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, OzoneAction'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 19-year experience in social development interventions, a network of over 100 Regional Networks and Technical Centers, and our continued commitment to the CAP have allowed us to continue to provide the services and support that you need to meet your obligations under the Montreal Protocol. 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.

Just like you and your colleagues, our CAP teams have had to adjust both their personal and professional lives to meet these new conditions. All of our CAP teams are working hard to ensure that we continue to provide the services and support that you need to meet your obligations under the Montreal Protocol. 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.

Since 1988, UNEP OzoneAction has been most active in the implementation of the Montreal Protocol and we will continue to work with your country in partnership to ensure that you meet your obligations under the Montreal Protocol. 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.

Should you have any questions, please contact your National Ozone Officer. We are here to support you. If you have any needs, challenges, or if you need us to adjust our services, please contact your National Ozone Officer. We are here to support you. If you have any needs, challenges, or if you need us to adjust our services, please contact your National Ozone Officer. We are here to support you.

With our best wishes and continued support, we remain committed to your success in implementing the Montreal Protocol. We are here to support you. If you have any needs, challenges, or if you need us to adjust our services, please contact your National Ozone Officer. We are here to support you.

Yours sincerely,
James S. Curlin
Acting Head, OzoneAction

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](#)



IIR and UNEP OzonAction release the French and Spanish versions of the ‘Cold Chain Technology Briefs’

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

Download:

- [Cold Storage and Refrigerated Warehouse](#)
- [Commercial, Professional and Domestic](#)
- [Fishing Vessel Application](#)

- [Refrigeration in Food Production and Processing](#)
- [Transport Refrigeration](#)

The new updated OzonAction GWP-ODP Calculator Application

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



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

Contact: [iPIC Online Administrators](#) for any further questions.



[Servicing tail for HCFCs: What is it & why does it matter?](#)

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

Details and explanations are provided in this [Policy Brief](#).

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



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

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

[Download the Factsheet](#)

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



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

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

[Download the Factsheet](#)

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

UNEP OzonAction Training Programme for National Ozone Officer

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



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

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

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

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

[Download the flyer >>>](#)



Contact: [Mikheil Tushishvili](#), Montreal Protocol Programme Officer, UNEP-OzonAction.



[OzonAction Factsheet: Article 7 Data Reporting on HFCs - When Countries Need to Start Reporting](#)

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

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

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

[Download the Factsheet](#)

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



[HS Codes for HFCs - Advice for countries in advance of the 2022 HS code update](#)

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

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

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

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

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

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

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

[Download the publication](#)

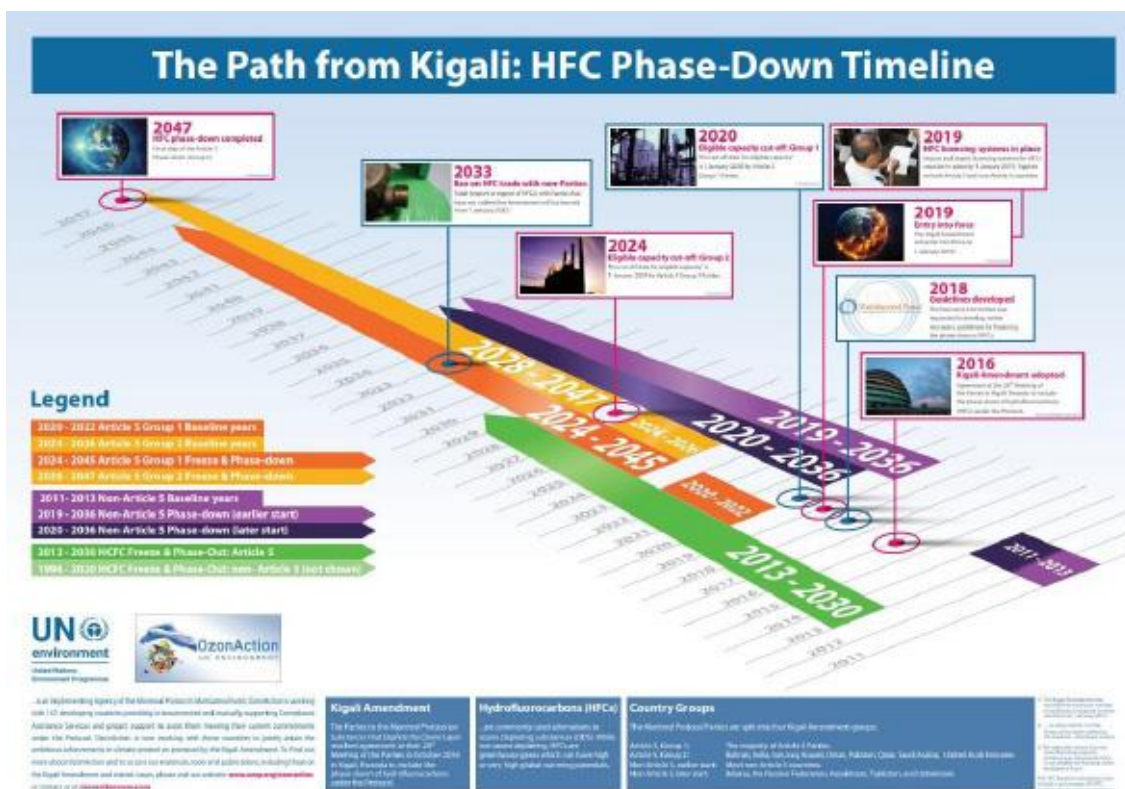
Contact: [Ezra Clark](#), UNEP, OzonAction



[Women in the refrigeration and air-conditioning industry: Personal experiences and achievements](#)

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

[Download the publication](#)



The Path from Kigali: HFC Phase-Down Timeline

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



Good Servicing: Flammable Refrigerants Quick Guide

This is the electronic and interactive version of the UN Environment Programme OzonAction Quick Guide on Good Servicing Practices for Flammable Refrigerants. It offers easy reference to the key safety classification and technical properties of flammable refrigerants that are available in the market.

It also provides important safety guidance for the installation and servicing of room air-conditioners designed to use flammable refrigerants. This interactive guide allows you to scroll and browse the text, jump to specific chapters or use the comprehensive dynamic index to locate specific keywords, figures and tables. The application also includes a refrigerant charge size calculator and a room size calculator for flammable refrigerants.

Available for [free](#) on the [Google play store](#) (Apple version coming soon). Search for “UNEP Quick guide” or use the QR code



Refrigerant Identifier Video Series

Guidance on how to identify refrigerants using a refrigerant identifier.

This new OzonAction video series consists of short instructional videos showing how to use and maintain a refrigerant identifier.

The videos provide useful guidance on safety and best practice, understanding the difference between different identifier units, testing procedures and identification of results.

It is intended for use by Montreal Protocol National Ozone Officers, Customs and Enforcement Officers as well as technicians involved in the servicing and maintenance of refrigeration and air conditioning systems.

The application features 10 short instructional videos on the following topics:

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

- Software updates

Available for [free](#) on the Google play store (Apple version coming soon). Search for “UNEP Refrigerant ID” or use the QR code



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

OzonAction has launched an exciting new application which hosts series of short instructional videos on techniques, safety and best practice for refrigeration and air-conditioning technicians.

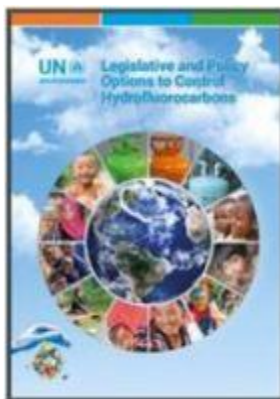
This application, consisting of short instructional videos on techniques, safety and best practice, serves as a complementary training tool for refrigeration and air-conditioning (RAC) sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training.

New videos on flammable refrigerants just added!

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

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

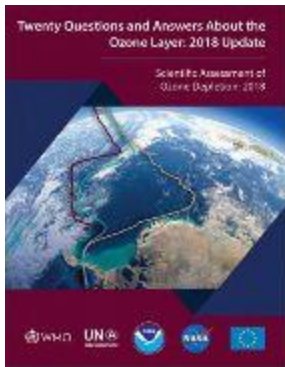
PUBLICATIONS



[Legislative and Policy Options to Control Hydrofluorocarbons](#)

In order to follow and facilitate the HFC phase-down schedules contained in the Kigali Amendment, the Parties, including both developed and developing countries, will have to implement certain measures.

This booklet contains a recommended set of legislative and policy options which the developing (Article 5) countries may wish to consider for implementation. It is intended to be a guide/tool for countries.



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

Lead Author: Ross J. Salawitch

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

Read / Download:

[20 Questions and Answers about the ozone layer- 2018](#) | [Figures](#)



[Primer on Hydrofluorocarbons \(HFCs\)](#) - IGSD -11 January 2018

Fast action under the Montreal Protocol can limit growth of hydrofluorocarbons (HFCs), prevent 100 to 200 billion tonnes of 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.

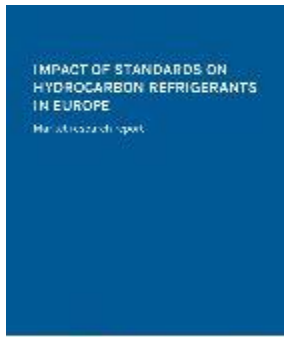


The [IIR International Dictionary of Refrigeration](#) Available in 11 languages, the complete version of the International Institute of Refrigeration (IIR) International Dictionary of Refrigeration is now freely accessible online. The IIR International Dictionary of Refrigeration offers researchers, 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](#)

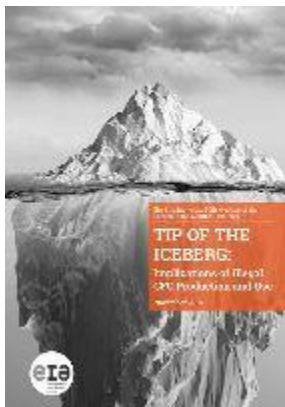


life
front

[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. 5 - 2020](#) (in Italian language).



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



[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*

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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



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