

Volume XXI | 15 February 2021

## In this issue:

1. Kigali Amendment latest ratification
2. Illegal CFC emissions have stopped since scientists raised alarm
3. You've watched the film, now play the game, and see what you can do to Reset Earth! One Ozone. One Planet. One Chance
4. World leaders set for pivotal environmental assembly
5. Women scientists protecting the ozone layer and safeguarding the environment
6. Ciencia del Ozono, Cambio Climático y COVID-19
7. Canada's Ozone layer protection awareness program
8. Children's Hospital Los Angeles sued over claims of Freon mishap
9. La Commission lance une consultation publique sur la lutte contre la criminalité environnementale
10. Annual Natural Refrigerants Virtual Trade Show

## GLOBAL

### 1. Kigali Amendment latest ratification

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

**Iceland, 25 January 2021**

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



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

## United Nations Treaty Collection

Image: UN Treaty Collection website

---

### 2. Illegal CFC emissions have stopped since scientists raised alarm

Analyses suggest that China has successfully curbed production of an ozone-depleting chemical, a win for the international treaty that protects the ozone layer.



Production of the ozone-destroying chemical CFC-11 has been banned since 2010. Credit: NASA.

Illegal emissions of an ozone-destroying chemical once used in refrigerants and foam insulation have virtually come to a halt, scientists reported this week, nearly three years after the rogue emissions were first documented. Researchers say the result is a major win for the international treaty that protects the ozone layer.

In May 2018, researchers documented a mysterious spike in atmospheric concentrations of trichlorofluoromethane, or CFC-11, that had begun in around 2013. Production of the chemical had been banned since 2010 under the Montreal Protocol, a legally binding treaty that has been remarkably successful in curbing the use of ozone-depleting substances, so scientists surmised that the sudden increase was probably the result of a new source of illegal emissions. By May 2019, scientists had traced the bulk of the emissions to eastern China. In response to significant international pressure, the country committed to rectifying the problem.

In a pair of studies published in *Nature* on 10 February, scientists report that atmospheric concentrations of CFC-11 have dropped precipitously since 2018. Assuming the current trend continues, the damage to the ozone layer from several years of illegal emissions will be negligible, says Stephen Montzka, an atmospheric chemist at the National Oceanic and Atmospheric Administration in Boulder, Colorado, who led one of the studies.

“The treaty did its job,” says Durwood Zaelke, president of the Institute for Governance & Sustainable Development, an advocacy group based in Washington DC. “Whoever the offending parties were — including most definitely China — they got their act together.” However, the sources of illegal emissions outside China remain a mystery.

China’s Ministry of Ecology and Environment did not reply to several requests for comment in relation to the latest results and the actions it has taken to halt illegal CFC-11 emissions.

#### Global surveillance

CFC-11 survives in the atmosphere for about 50 years, so, if sources were completely eliminated, global emissions should decline by around 2% annually. But the actual rate is

---

slower, owing to continued emissions of the chemical from old refrigeration systems and from insulating foam when buildings are demolished. Between 2002 and 2012, CFC-11 emissions fell by around 0.85% a year. But that rate halved — to about 0.4% — after 2013, a sign that somebody was pumping around 13,000 tonnes a year of newly produced CFCs into the atmosphere, Montzka's team calculated in 2018. The most likely culprit was the manufacture and use of foam insulation.

The analysis published this week, using data from two independent global air-monitoring networks, indicates that concentrations of CFC-11 began to decline more rapidly in 2018. By late 2019, CFC-11 concentrations were dropping by around 1% a year — the fastest pace on record.

In a second paper, Montzka and colleagues used measurements from air-monitoring stations in South Korea and Japan, as well as detailed atmospheric-transport modelling, to show that the largest source of the rogue emissions — in eastern China — has been shut down. The study incorporated independent analyses from four different research groups and two models, all of which showed consistent results, says Luke Western, an atmospheric scientist at the University of Bristol, UK, and a co-author on the paper.

“Around 60% of the global increase came from that region, and 60% of the recent decrease also came from there,” Western says.

### **Data gaps**

The research can't account for some of the decline in emissions, however, which points to gaps in data collection around the world, including in industrially important countries such as India and Brazil. Although 60% of the recent decrease has been accounted for, “we still don't know where the other 40% was coming from”, says Martin Vollmer, an atmospheric scientist at the Swiss Federal Laboratories for Materials Science and Technology in Dübendorf. Nonetheless, the episode should send a warning signal to those who might be tempted to break the rules in future.

Montzka says discussions are under way among parties to the Montreal Protocol to expand the network of monitoring stations. But for now, he says, it's encouraging — and a bit surprising — to see governments respond to the science and take action to halt illegal emissions. “We were there to catch the problem, and now we can be there to announce that they have addressed it,” Montzka says. “It's a nice thing.”

**Nature, 10 February 2021, By: Jeff Tollefson** - *Image by: NASA*

**Read the full article: [A decline in global CFC-11 emissions during 2018–2019](#)** By: Stephen A. Montzka, Geoffrey S. Dutton, Robert W. Portmann, Martyn P. Chipperfield, Sean Davis, Wuhu Feng, Alistair J. Manning, Eric Ray, Matthew Rigby, Bradley D. Hall, Carolina Siso, J. David Nance, Paul B. Krummel, Jens Mühle, Dickon Young, Simon O'Doherty, Peter K. Salameh, Christina M. Harth, Ronald G. Prinn, Ray F. Weiss, James W. Elkins, Helen Walter-Terrinoni & Christina Theodoridi. Published online by Nature, 10 February 2021.

---

---

See also >>> [Le trou dans la couche d'ozone au-dessus de l'Antarctique, considéré comme l'un des plus grands, s'est refermé fin décembre,](#)

Sophie Godin-Beekmann, directrice de recherche au Centre national de la recherche scientifique (CNRS) revient sur le phénomène qui ne cesse de surprendre. Article dans [AI-Watan](#), 11 février 2021, Par Sofia Ouahib



---

### 3. You've watched the film, now play the game, and see what you can do to Reset Earth! One Ozone. One Planet. One Chance.



Ozone Secretariat hopes to raise awareness among teens on the importance of protecting the ozone layer and safeguarding the environment through animation and a games app

Following from the successful launch of the [Reset Earth](#) short animation film, which has been viewed in excess of 750,000 times globally to date, the Ozone Secretariat launched the Reset Earth mobile games app on 10 February. The game (available free of charge for [iOS](#) and [Android](#)) is a single player platform game, combining a retro graphics style and hand-drawn artwork and is aligned with the film's storyline. Players can unlock the three characters Knox, Sagan or Terran, and utilise their unique game abilities as they race through time to find a way to protect the ozone layer and reset earth.

Set across 4 stages of challenging immersive platform gameplay, each representing a time zone jump in the animated series, players will get the chance to truly immerse themselves in the world of Reset Earth. Through unlocking puzzles and discovering clues, players learn about environmental history and the science of protecting the planet. By bringing together the unique abilities of each of the three characters, players will become stronger, and advance faster in their ultimate goal to save the earth.

The main objective of the game, and of the whole Reset Earth campaign, is to inspire young children and teenagers to become environmentally aware and active; to convey a message of hope by demonstrating the power of science and collaboration in addressing global environmental challenges. With Reset Earth, the Ozone Secretariat wants to send a

---

message to young people about the importance of protecting the ozone layer and inspire protection of our planet.

On a daily basis, a staggering number of children and young adults play games and interact online globally. Based on this alone, it made sense to develop educational and informative assets available online that would appeal to young people. By making the game and animation interesting, rather than educational in the traditional sense, we hope to raise awareness among Gen Z and stimulate the conversation around the need to protect the ozone layer and safeguard the environment for the future.

Based on the success so far, the Ozone Secretariat hopes to build on the campaign adding new characters and additional storylines that will continue to educate and inspire young people. Keep an eye on the [Reset Earth campaign page](#) for announcements and new developments of educational resources and tools for teachers and students alike.

**The United Nations Environment Programme, Ozone Secretariat, February 2021** - Image: Ozone Secretariat website

---

#### 4. World leaders set for pivotal environmental assembly

In February 2021, representatives of the 193 Member States of the UN, businesses leaders, civil society and environmentalists from around the world will come together virtually for the fifth session of the United Nations Environment Assembly (UNEA), the world's highest environmental decision-making body.



The UN Environment Programme (UNEP) answers frequently-asked questions about this biennial assembly, which aims to galvanize international action on climate change, pollution and ecosystem loss.

#### **Given the enormity of challenges the world is facing, why are environmental conferences like UNEA important?**

UN Secretary-General, Antonio Guterres has said it best: Humanity is waging a war on nature. And this is suicidal. In 2020, the world faced flooding, wildfires, locust invasions and a pandemic that has brought life-as-we-know-it to a halt. The message could not be clearer.

Human economic activity has put extreme pressure on the planet, propelling climate change, destroying biodiversity and ecosystems, and rising pollution levels. UNEA will help strengthen international efforts to tackle these three crises.

Apart from the fifth session of UNEA, the year 2021 will see other landmark environmental conferences, including the [IUCN World Conservation Congress](#) the [Food Systems](#)

---

Summit the [UN Ocean Conference](#) the [26<sup>th</sup> UN Climate Change Conference \(COP 26\)](#), and the [Convention on Biodiversity \(COP 15\)](#).

It's a busy year – and a pivotal one. At the international level, there is a tremendous will to safeguard the planet for generations to come.

**In recent years, we have seen countries pull back from their international commitments. Is there still a place for international assemblies, like UNEA?**

Even before COVID-19, progress across the Sustainable Development Goals was uneven. But where multilateral action was taken, it has made a difference. Last year, for example, marked the 35<sup>th</sup> anniversary of [the International Convention](#) to protect the ozone layer. As a result of decisive, coordinated action, the ozone layer is now healing, saving millions of lives and avoiding untold economic damage.

Inclusive multilateralism is the only way to solve the challenges we face. It is time to revisit the Paris climate change agreement – renew the leadership and solidarity that made that landmark accord possible – and lay the groundwork for a more sustainable future. [...]

[The United Nations Environment Assembly \(UNEA 5\) will take place on 22-26 February 2021.](#)

Image by UNEP

---

## 5. Women scientists protecting the ozone layer and safeguarding the environment

To mark International Day of Women and Girls in Science, celebrated each year on 11 February, the Ozone Secretariat is delighted to showcase the tremendous work and dedication of two scientists working passionately for the Montreal Protocol to save the ozone layer and help safeguard the environment.



**Janet Bornman** is a Professor of plant photobiology with expertise in the effects of ultraviolet radiation, including global food security, sustainable development and climate change, and Co-Chair of the Environmental Effects Assessment Panel (EEAP) of the Montreal Protocol under the United Nations Environment Programme (UNEP) since 2004. Reflecting on the current challenge facing the environment she was pleased to note that **“Many young people are very much aware of this and are inspired to play a part in helping mend our Earth – and it is all about science.”** [Read more](#)

---



Our second distinguished scientist is **Bella Maranion**, Branch Chief of the Alternatives and Emissions Reduction Branch at the U.S. Environmental Protection Agency (EPA), responsible for implementing regulatory programmes under the Montreal Protocol and Title VI of the Clean Air Act to protect the ozone layer and minimise climate impacts, as well as Co-Chair of the Technology and Economic Assessment Panel (TEAP) since 2012. Reflecting on the COVID-19 pandemic, she noted that **“Science will continue to demand a response to global environmental threats. If we want more scientists, then we need to create those opportunities early.”** [Read more](#)

The United Nations Environment Programme, [Ozone Secretariat](#), 10 February 2021

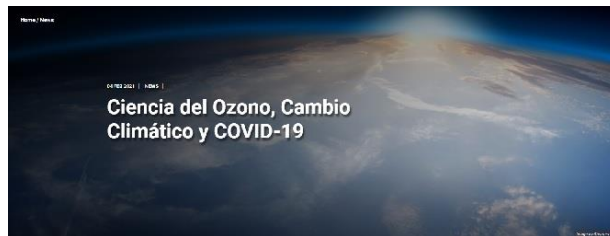
*Images: Ozone Secretariat website*

## LATIN AMERICA AND CARIBBEAN

### 6. Ciencia del Ozono, Cambio Climático y COVID-19

**Ciudad de Panamá, Panamá, 29 de enero 2021** – El equipo para América Latina del Programa de Asistencia para el Cumplimiento, financiado mediante el Fondo

Multilateral para la Aplicación del Protocolo de Montreal, organizó el evento virtual «Ciencia del Ozono, Cambio Climático y COVID 19», presentado por el doctor José M. Rodríguez, físico experto en la disminución de ozono estratosférico de la Agencia Espacial de los Estados Unidos (NASA). Durante el seminario, se creó un espacio para profundizar acerca de la distribución del ozono en la atmósfera superior y de su importante función en la absorción de las radiaciones ultravioleta del sol.



El doctor Rodríguez explicó cómo a través de las investigaciones científicas se pudo determinar el mecanismo de destrucción del ozono estratosférico por parte de las sustancias que contienen bromo o cloro —principalmente, refrigerantes— que se liberan en la superficie terrestre. A su vez, describió el efecto negativo de las temperaturas bajas en la formación de las nubes estratosféricas y su consecuente disminución en la concentración de ozono, principalmente en la Antártida. Debido a la abundante evidencia científica, durante la década de los 80 la comunidad internacional acordó enfrentar esta problemática ambiental global mediante la firma de la Convención de Viena (1985) y del Protocolo de Montreal (1987), el cual unificó a todas las naciones con su compromiso de reducción del consumo y de la producción de las sustancias que agotan la capa de ozono.

Asimismo, mediante una línea del tiempo diseñada con imágenes satelitales, se mostró el comportamiento del agujero de ozono sobre la Antártida durante la primavera austral desde 1985 hasta la fecha, que si bien depende de múltiples variables —principalmente, meteorológicas— también permite observar una tendencia positiva en la recuperación de la capa de ozono, como resultado del cumplimiento de las obligaciones del Protocolo de Montreal por parte de todos los países.

En el evento también se hizo un breve análisis del impacto del COVID-19 con relación al ozono a nivel troposférico, que a esa altura resulta contaminante. Es un hecho que la disminución drástica de múltiples actividades comerciales e industriales, debida a la pandemia, ha reducido significativamente la emisión de gases contaminantes; en consecuencia, se ha mejorado la calidad del aire y la visibilidad. Sin embargo, este fenómeno se considera como una circunstancia temporal, puesto que se requerirían 30 años o más para que tenga un efecto significativo en la calidad del aire o en la disminución del calentamiento global.

El seminario tuvo una amplia participación de los países de América Latina e incluyó una sesión activa de preguntas y respuestas. Marco Pinzón, Coordinador de la Red de Funcionarios de Ozono de América Latina, considera que «revisar de forma periódica el estado del arte de la ciencia del ozono nos permite no solamente valorar los resultados que hemos obtenido hasta hoy, por nuestro papel en la protección de la capa de ozono, sino que nos recuerda y nos señala el objetivo que aún debemos alcanzar, motivándonos a continuar trabajando hasta tener una capa de ozono totalmente recuperada».

**Contacte:** [Marco Pinzon](#), coordinador de la Red Regional para América Latina

*Image by: Shutterstock*

## NORTH AMERICA

### 7. Canada's Ozone layer protection awareness program



#### What can you expect from this program/course?

This environmental awareness training program, based on Environment Canada's "Code of Practice for Elimination of Fluorocarbon Emissions in Refrigeration and Air Conditioning Systems", deals with environmentally-correct equipment design, proper handling of refrigerants, and will prepare participants for complying with Federal and Provincial Regulations covering refrigeration and air conditioning systems.

Specific topics covered are: Science of ozone depletion, leak detection methods, system charging procedures, special maintenance provisions, and refrigerant recovery, reuse,



recycle, and reclamation equipment. This evening course will have 1.5 hours allotted to the final exam. Participants must achieve 75% to receive certification from [HRAI](#)

If students require this course they can take an online version. Information can be found [here](#)

### **Olds College, February 2021**

*Image: Olds College website*

---

#### **8. Children's Hospital Los Angeles sued over claims of Freon [HCFC] mishap**

A former mechanic says a coworker allowed the restricted refrigerant to escape, and that he was fired for reporting it.

HOLLYWOOD, CA — A former mechanic has sued Children's Hospital of Los Angeles, claiming he was wrongfully fired after reporting the mishandling of the harmful refrigerant Freon by another coworker.



The production and import of Freon was banned in 2020 by the Environmental Protection Agency as part of an effort to phase out hydrochlorofluorocarbon, also known as HCFC. Studies have shown that HCFCs deplete the ozone layer, and contribute to climate change. [...]

**Patch, 9 February 2021, By: Kenan Draughorne**

*Image: Shutterstock*

---

## **EUROPE & CENTRAL ASIA**

#### **9. La Commission lance une consultation publique sur la lutte contre la criminalité environnementale**

Une directive de 2008 impose aux Etats membres de traiter comme des infractions pénales les activités qui enfreignent la législation



environnementale. Une proposition de révision de cette directive est prévue d'ici la fin 2021.

La Commission a lancé aujourd'hui une **consultation publique** sur la criminalité environnementale, dont les résultats alimenteront le réexamen des règles de l'UE en la matière. La **directive 2008/99/CE** impose aux États membres de traiter comme des infractions pénales les activités qui enfreignent la législation environnementale, telles que le transfert illicite de déchets ou le commerce d'espèces menacées d'extinction ou de substances appauvrissant la couche d'ozone.

M. Didier Reynders, commissaire chargé de la justice, s'est exprimé en ces termes : *«L'UE est pionnière dans l'élaboration d'une politique environnementale globale. Nous sommes déterminés à poursuivre l'élaboration de normes mondiales pour la protection de la planète. La transition écologique signifie que nous devons protéger notre environnement contre la criminalité et nos ressources naturelles contre l'exploitation. J'invite chacun à apporter sa contribution en participant à cette consultation. Ensemble, nous pouvons faire davantage pour protéger la faune sauvage et améliorer la qualité de vie de tous les citoyens.»*

Une proposition législative pour la révision de la directive est attendue d'ici la fin 2021. Une évaluation de la directive réalisée en 2019-2020 avait conclu que des progrès restaient à faire en ce qui concerne la réduction de la criminalité environnementale et la poursuite des auteurs d'infractions. La révision répond à ces questions en recourant à la compétence pénale renforcée de l'UE en vertu du traité de Lisbonne et en assurant une meilleure coordination des règles avec d'autres initiatives vertes. La consultation publique permettra de recueillir les avis du grand public et de particuliers et de groupes intéressés ou compétents en la matière, tels que des universitaires, des entreprises ou des ONG.

La consultation publique est ouverte du 5 février au 4 mai 2021. De plus amples informations sont disponibles [ici](#)

### Commission européenne en France, 8 février 2021

Image by: EC

---

## 10. Annual Natural Refrigerants Virtual Trade Show

Registration is now open for the **Natural Refrigerants Virtual Trade Show 2021** taking place LIVE on 30-31 March 2021.

Register below for **FREE** and join on 30 March the global event LIVE for 24hrs, to include all time zones. **The platform will open at 10am CET on 30 March and close at 10am CET on 31 March.**



Attend and click-through the exhibitor halls featuring cutting-edge technology providers' booths, tune into live webinars, panel discussions, network with other industry stakeholders in the virtual lounge and vote for the Innovation of the Year Award.

[Learn more >>>](#)

*Image: Atmo website*

## FEATURED



## OZONE SECRETARIAT

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

- **11<sup>th</sup> ORM**, Geneva, Switzerland | 14 - 16 April 2021
- **66<sup>th</sup> IMPCOM**, Bangkok, Thailand | 12 July 2021
- **43<sup>rd</sup> OEWG**, Bangkok, Thailand | 12 - 16 July 2021
- **67<sup>th</sup> IMPCOM**, Nairobi, Kenya (tentative) | 23 October 2021
- **12<sup>th</sup> COP – 32<sup>nd</sup> MOP Bureau**, Nairobi, Kenya (tentative) | 24 October 2021
- **12<sup>th</sup> COP (part II) – 33<sup>rd</sup> MOP**, Nairobi, Kenya (tentative) | 25 - 29 October 2021

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

### [The UN Environment Assessment Panels](#)

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

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

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

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



**THE MULTILATERAL FUND  
FOR THE IMPLEMENTATION OF THE  
MONTREAL PROTOCOL**

- Click [here](#) for the Executive Committee upcoming and past Meetings.
- [Executive Committee Primer – 2020](#) - An introduction to the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol.



**OzonAction**

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

**The section below features several of our most recent products.**  
**Visit [OzonAction website](#) for more information, discover the entire range of products.**



**The Gas card tool** is a web-based visualization tool of refrigerant gases, developed by UN Environment Programme (UNEP) OzonAction, to provide engineers, workers, and technicians with basic information on each substance/gas on visual printable cards that they are working with or handling in the workplace.

The image shows a screenshot of a desktop application interface for 'HCFC Quota and Licence Tracker'. It features a table with columns for 'Substance', 'Quantity', 'Licence', and 'Status'. The table contains several rows of data, including substance names like 'R22' and 'R134a', and their respective quantities and licence statuses. The interface includes a search bar at the top and various control buttons.

**HCFC Quota and Licence Tracker - UNEP OzonAction launches a new desktop application to assist with HCFC licences and quotas** - National Ozone Officers have the great responsibility of managing the allocation and

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

hydrofluorocarbons (HFCs) once countries begin designing their quota systems for those controlled substances.

Access the:

- [HCFC Quota tracker app](#)
- [Flyer for more information on the tracker](#)
- [Short video tutorial on the OzonAction YouTube Channel](#)

---

## **GWP-ODP Calculator Application - Updated**

**“Quickly, efficiently and accurately convert between values in metric tonnes, ODP tonnes and CO<sub>2</sub>-equivalent tonnes”**

Data are extremely important for the Montreal Protocol community, and the data reporting formats for both A7 and CP have changed recently, to a large degree triggered by the Kigali Amendment. HFCs, blends, CO<sub>2</sub>-equivalent values, etc, now have to be addressed much more frequently by Ozone Officers during their daily work.

Sometimes the terminology and values are complex and can be confusing, and it helps to have it all the official facts and figures in one place. Conversion formulas need to be applied to calculate CO<sub>2</sub>-eq values from both GWP and metric tonne values. This free app from OzonAction is a practical tool for Ozone Officers to help demystify some of this process and put frequently-needed information at their fingertips.



**What's new in the app:**

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

The new and updated UNEP OzonAction **GWP-ODP Calculator** application will help you to convert between values in metric tonnes, ozone depleting potential (ODP) tonnes and CO<sub>2</sub>-equivalent tonnes of substances controlled by the Montreal Protocol and their alternatives.

---

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

Operation of the application is very simple — just select a substance from the dropdown list and enter the known value in the appropriate field; the calculator will automatically perform the conversion between metric tonnes, ODP tonnes and/or CO<sub>2</sub>-equivalent tonnes and display the corresponding converted values. The ODP, GWP and information about the substance is provided. For mixtures, the components of the mixture and their relative proportions (metric, ODP, CO<sub>2</sub>- 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.



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

---

## OzonAction **WhatGas?** Updated

### 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!**

---



---

## RAC Technician Videos - Full length films!

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




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

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


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

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

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

 You can watch these videos on the OzonAction YouTube Channel:

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

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



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

**Free to download!**

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

---

## 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.

An AHRI revised guideline, first published in 2015, now removes paint colour assignments for refrigerant containers and specifies that all refrigerant containers should have the same paint colour from 2020 onwards.

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.

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 (September 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](#).

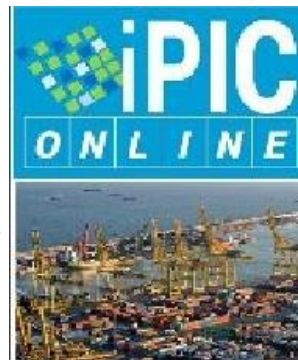
**Contact:** [Ayman Eltalouny](#), OzonAction, UN Environment Programme

---

### OzonAction's iPIC platform - Updated

Collaboration between China and Thailand using OzonAction's informal Prior Informed Consent (iPIC) system has resulted in the prevention of a huge consignment of ozone-depleting and climate damaging 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.



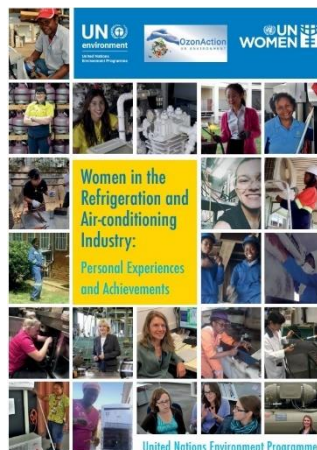
---

### Women in the refrigeration and air-conditioning industry: Personal experiences and achievements

The United Nations Environment Programme's (UNEP), OzonAction, in cooperation with UN Women, has compiled this booklet to raise awareness of the opportunities available to women and to highlight the particular experiences and examples of women working in the sector and to recognise their successes.

All of the professionals presented in the booklet are pioneers. They are role models whose stories should inspire a new generation of young women to enter the weld and follow in their footsteps.

Read/download the [publication](#)



---

**PUBLICATIONS**

---

## Legislative and Policy Options to Control Hydrofluorocarbons

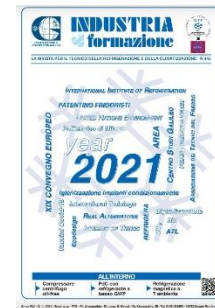
In order to follow and facilitate the HFC phase-down schedules contained in the Kigali Amendment, the Parties, including both developed and developing countries, will have to implement certain measures.

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.

[Read/download](#)



Latest issue of Centro Studi Galileo magazine, **Industria & Formazione, n. 1 - 2021** (in Italian).



## 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*



**Click [here](#) to access recent OzoNews Issues [Request a PDF](#) of the current issue**

**Disclaimer:**

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

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

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

Prepared by: Samira Korban-de Gobert

Reviewed by: Ezra Clark

If you wish to submit articles, invite new subscribers, please contact:

Samira Korban-de Gobert,

[samira.degobert@un.org](mailto:samira.degobert@un.org)



