

OzoNews

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

Volume XXI | 30 January 2021

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GLOBAL

1. A tribute to Professor Paul J. Crutzen

Another esteemed champion of ozone layer protection has passed at the age of 87

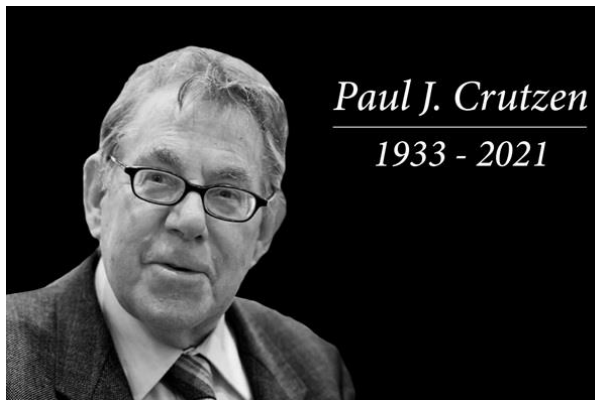
He was at the forefront of atmospheric research, specifically the role of ozone in the stratosphere and troposphere. In 1970 Professor Crutzen hypothesized that chemical compounds of nitrogen oxide speed up the destruction of the ozone layer, later demonstrating that nitric acid and water vapour create a chain-reaction in the stratosphere during late winter and spring creating what we now know as the 'ozone hole' over the Antarctic.

He modelled the potential ozone depletion resulting from continued use of chlorofluorocarbons (CFCs), mostly used in aerosol spray cans and as refrigerants or cleaners. The results were both staggering and catastrophic.

His contribution to science and to the identification of the threat to the ozone layer helped to mobilize global action. This invaluable contribution to ozone research was later acknowledged when Professors Crutzen, Molina and Rowland were jointly awarded the Nobel Prize for Chemistry in 1995.

Professor Crutzen's pioneering work on the ozone layer, and the impact it had on the world community to act in unison to protect the ozone layer, is a legacy for the future generations to continue with science and action to protect the ozone layer.

The United Nations Environment Programme, Ozone Secretariat, 29 January 2021 - Image: Ozone Secretariat website



2. Kigali Amendment latest ratification

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

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](#)

3. Reset earth - One ozone. One planet. One chance

What would the world look like if we hadn't saved the ozone layer? 2084. The GROW has taken over. Three teenagers find themselves on an adventure to save themselves and the world.

[Reset Earth](#) is an animated short film and mobile game that follows the adventure of three young heroes as they race against time to find a solution to the GROW, a life-threatening disease that prevents anyone from living much beyond the age of 25.

In search of answers, our heroes will travel through time, and across multiple landscapes, attempting to unlock the secrets of the past to save

themselves, the ozone layer and the future of the planet from impending doom.

Along the way, they will learn the importance of the ozone layer, as well as the power of working together to achieve what might at first seem impossible. Rooted in science, this fictional story and game will present a dramatized picture of what Earth could have been like if the world had not acted to protect the ozone layer and signed the Montreal Protocol on Substances that Deplete the Ozone Layer in 1987..

Aimed at adolescents and parents this innovative animation and game from the United Nations Environment Programme's Ozone Secretariat uses the power of storytelling to educate and inspire young people around the world. Understanding that many young people are anxious about the future state of the planet, this campaign aims to show them the power of science, collaboration and cooperation in solving complex global challenges.



The campaign also offers a message of hope, showing how the global community was able to come together and solve one of the most complex environmental challenges at the time, with remarkable success. It happened once, and it can happen again!

The United Nations Environment Programme, Ozone secretariat, January 2021 - Image: Ozone Secretariat website

4. Sources of new ozone-damaging HCFCs traced back to origins

An international team of researchers has located the source of recently discovered ozone damaging HCFCs in the atmosphere. In their paper published in *Proceedings of the National Academy of Sciences*, the group describes using new tools in addition to those used by members of the Montreal Protocol to discover and trace ozone-damaging chemicals emitted into the atmosphere.



Back in the mid-1980s, scientists discovered that some types of human-created air pollution were damaging the ozone layer, a layer in the stratosphere containing high levels of trioxygen that blocks harmful UV rays from the sun. The damage came to be known as the "ozone hole." Since that time, scientists have worked with governments and industries to stop such emissions—efforts that have worked quite well, as the size of the hole has been dramatically reduced.

One of those efforts was the creation of the Montreal Protocol in 1987—a pact between nations agreeing to limit or stop emitting ozone-damaging chemicals. The pact led to the building of air quality testing centers around the globe. Two years ago, members of the team manning one of the test station found a new source of ozone-damaging chemicals that had never been seen in the atmosphere before—HCFC-132b, a hydrochlorofluorocarbon compound. It was added to the list of two other chemicals that have been detected at testing stations—HCFC-133a, and HCFC-31. In this new effort, the researchers traced the emissions back to their source.

The researchers found that both HCFC-132b and HCFC-133a were coming from two different areas in China. HCFC-31 had been previously traced to China. The researchers also found that emissions traced to France several years ago had stopped at the same time a chemical plant in France was shut down.

The researchers note that all three sources are considered to be far less damaging than the chemicals that were involved in creating the ozone hole—new, more sensitive sensors

are able to detect chemicals in parts per trillion, as opposed to billions or even millions, just a few years ago.

The researchers will continue working to trace the emissions to the factories involved and engage with those businesses or their government to put a stop to them.

More information: Martin K. Vollmer et al. Unexpected nascent atmospheric emissions of three ozone-depleting hydrochlorofluorocarbons, *Proceedings of the National Academy of Sciences* (2021). DOI: [10.1073/pnas.2010914118](https://doi.org/10.1073/pnas.2010914118)

Journal information: [Proceedings of the National Academy of Sciences](#)

[Phys.org](#), 29 January 2021, By Bob Yirka - Image by: Dickon Young

5. Susan Solomon, Massachusetts Institute of Technology, will receive the 2021 National Academy of Sciences (NAS) Award for Chemistry in Service to Society



Susan Solomon is known for her influential and incisive application of atmospheric chemistry to understand our most critical environmental issues – ozone layer depletion and climate change – and for her effective communication of environmental science to leaders to facilitate policy changes.

Solomon is globally recognized as a leader in atmospheric science, notably for her insights in explaining the cause of the Antarctic ozone “hole.” She and her colleagues have made important contributions to understanding chemistry-climate coupling, including pioneering research on the irreversibility of global warming linked to anthropogenic carbon dioxide emissions, and on the influence of the ozone hole on the climate of the southern hemisphere.

This research has had an enormous effect on policy and society, including the transition away from ozone-depleting substances and to environmentally benign chemicals. The work set the stage for the Paris Climate Agreement and has even saved millions of people from contracting skin cancer.

Solomon also notably played critical roles in the Intergovernmental Panel on Climate Change and continues to educate policy makers, the public, and the next generation of scientists.

Established by E. I. du Pont de Nemours & Company, the NAS Award for Chemistry in Service to Society is awarded biennially for contributions to chemistry, either in fundamental science or its application, that clearly satisfy a societal need. The award is given in alternate years to chemists working in industry and to those in academia, government, and nonprofit organizations. The award is presented with a \$20,000 prize.

[National Academy of Sciences \(NAS\)](#), January 2021 - Image: NAS website

6. Flight at the edge of the ozone layer

A short video published by the National Geographic, 24 January 2021



Watch the [video](#)

AFRICA

7. Remise au niveau de formateurs en froid en Afrique francophone

Mbour, Sénégal, 14 janvier 2021 – Le Programme des Nations Unies pour l'Environnement (PNUE) ActionOzone, dans le cadre de son mandat auprès du Fonds multilatéral pour l'application du Protocole de Montréal poursuit son soutien aux actions de formation et de renforcement des capacités dans les pays Article 5, en particulier en Afrique francophone.



Du 8 au 10 décembre 2020 s'est tenu au centre de formation pédagogique Abbé David Boilat de Mbour un stage de formation de formateurs en froid et climatisation servant dans les centres de formation professionnelle au Sénégal, organisé par le Bureau National Ozone et présidé par madame Reine Marie Badiane, Coordinatrice du Programme national

ozone de la Direction de l'environnement. Les stagiaires ont été accueilli par monsieur André Niane, Directeur du Centre David Boilat et leur formateur expert, monsieur Louis Ndiaye.



Dans son discours d'ouverture, madame la Coordinatrice nationale a souligné que, en dépit du niveau disparate des formateurs participant au stage, elle était encouragée par le nombre de participants ayant accepté cette belle initiative de mise à niveau des enseignants en froid et climatisation.

La formation, qui s'est déroulée sur trois journées, avait pour objectif le renforcement des capacités des professeurs de froid et climatisation dans les domaines des nouvelles technologies et des nouveaux fluides frigorigènes, solutions alternatives aux anciens fluides utilisés.

Outre un rappel des notions physiques et méthodologiques de base, cette formation aura apporté des connaissances nouvelles sur les propriétés physiques des nouveaux fluides et les techniques adaptées, et une familiarisation aux bonnes pratiques, à travers des activités pédagogiques théoriques et pratiques sous forme d'ateliers, de mises en situation ou de visites pédagogiques sur site.

Ces activités auront permis aux participants de faire personnellement l'expérience des différentes situations rencontrées sur le terrain, et donné lieu à des échanges fructueux permettant de fixer les apprentissages qui seront transmis à leur tour par les formateurs à leurs étudiants.

Il est hautement recommandé que ces actions de renforcement des capacités soient suivies sur le moyen et long terme afin que les formateurs soient toujours mis à niveau, par rapport à l'évolution des technologies et des bonnes pratiques, et continuent d'assurer un enseignement de qualité. D'ailleurs, l'une des recommandations phare de cette rencontre, exprimée par madame Reine Badiane, était de continuer sur cette lancée, en démultipliant le même exercice.

Un groupe de travail a été mis en place, qui doit se réunir au début du mois de février, avec pour but la mise en place d'un système de certification pour les techniciens frigoristes, ainsi que pour les centres de formation.

Les intervenants remercient le centre pédagogique David Boilat pour son accueil et la mise à disposition de ses installations

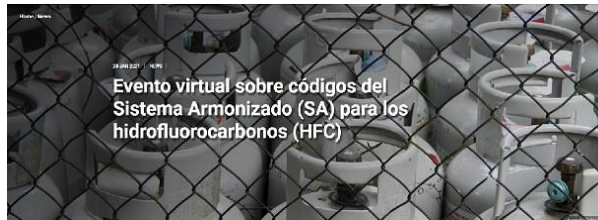
Le coordinateur régional Yamar Guissé a souligné qu'il est très important de remettre tous les formateurs au même niveau de compréhension technique vis à vis du Protocole de Montréal, des nouvelles technologies et des alternatives disponibles sur le marché international et adapté au contexte africain.

Cette formation est un bon exemple pour toute la région francophone de l'Afrique que, même dans le contexte difficile de la COVID-19, on peut organiser une formation. De plus il faut toujours compléter et mettre à jour les connaissances des formateurs afin d'assurer des formations de qualité. Il souligne également que dans l'atelier de Mbour 35% des stagiaires formateurs étaient des femmes, ce qu'il faut encourager.

LATIN AMERICA AND CARIBBEAN

8. Códigos del sistema armonizado (SA) para los hidrofluorocarbonos (HFC) - Evento virtual

Ciudad del Saber, Panamá, 15 de enero de 2021 - Acción por el Ozono es un Organismo de Ejecución del Fondo Multilateral (mecanismo financiero del Protocolo de Montreal) que tiene como función fortalecer la capacidad de los gobiernos de los países en desarrollo para que puedan cumplir y mantener sus obligaciones de cumplimiento en virtud del Protocolo de Montreal. Una de estas obligaciones es la recopilación de datos para informar sobre la producción y el consumo de sustancias controladas. El equipo regional de Acción por el Ozono en Panamá organizó un evento virtual donde abordó la cuestión de los códigos del Sistema Armonizado (SA) para los hidrofluorocarbonos (HFC).



Los funcionarios de aduanas desempeñan un papel clave para garantizar el cumplimiento del Protocolo de Montreal, mediante la protección de las fronteras, la vigilancia y la facilitación del comercio, la prevención del comercio ilegal y la muy importante, pero tal vez no tan reconocida, recopilación de datos.

El uso de los códigos del Sistema Armonizado (SA) por parte de los funcionarios de aduanas es la principal forma en la cual los países recopilan, clasifican e informan con precisión los datos sobre sustancias controladas por el Protocolo de Montreal.

El uso de los códigos del Sistema Armonizado (SA) por parte de los funcionarios de aduanas es la principal forma en la cual los países recopilan, clasifican e informan con precisión los datos sobre sustancias controladas por el Protocolo de Montreal.

En el pasado, la coordinación entre la Organización Mundial de Aduanas (OMA) y el Protocolo de Montreal (auspiciado por el PNUMA) sobre los códigos del SA para las sustancias controladas, ha llevado a la OMA a modificar el SA para abordar las demandas y requisitos de los países en sus esfuerzos para supervisar y facilitar la recopilación de datos y el comercio, así como para prevenir el comercio ilegal.

Uno de los requisitos más importantes de la Enmienda Kigali es que debe establecerse un sistema de licencias de importación y exportación para los HFC en cada país que sea Parte de la Enmienda (para enero de 2021). Para permitir que un sistema de licencias funcione eficazmente, es importante que el gobierno pueda supervisar y registrar individualmente las importaciones y exportaciones de cada HFC (o mezcla) específico(a).

En este evento se proporcionó una visión general de sobre estos asuntos y se explicó un enfoque de transición recomendado por la Organización Mundial de Aduanas (OMA), para

establecer dígitos adicionales en los códigos nacionales del SA existente que permitan identificar los HFC específicos.

Durante el seminario, también se proporcionaron ejemplos de enfoques de transición en la región para hacer frente a este gran desafío. Los tres oradores presentes fueron: el Sr. Daniel Cardozo, de la Organización Mundial de Aduanas, el Sr. Arno Kaschl de la Comisión Europea y la Sra. Claudia Paratori de Chile. El seminario moderado por Marco Pinzon, coordinador de la Red Regional para América Latina, Acción por el ozono, División de Derecho, Programa de las Naciones Unidas para el Medio Ambiente., tuvo la participación de 45 personas representando 12 países e incluyó una sesión activa de preguntas y respuestas.

El Sr. Marco Pinzon, coordinador de la red regional para América Latina resaltó que “la adopción de códigos nacionales transitorios del sistema armonizado para HFCs, es fundamental para que los países Artículo 5 identifiquen con precisión los sectores que consumen estas sustancias con el fin de incorporarlos dentro de sus estrategias de reducción gradual del consumo, así como también les permitirá estar preparados para el efectivo control del comercio de los HFCs como parte de sus sistemas de licencias y demás legislación relacionada.”

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

NORTH AMERICA

9. United States of America, The White House, Executive order on tackling the climate crisis at home and abroad

Presidential Actions

The United States and the world face a profound climate crisis. We have a narrow moment to pursue action at home and abroad in order to avoid the most catastrophic impacts of that crisis and to seize the opportunity that tackling climate change presents. Domestic action must go hand in hand with United States international leadership, aimed at significantly enhancing global action. Together, we must listen to science and meet the moment.

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

PART I — PUTTING THE CLIMATE CRISIS AT THE CENTER OF UNITED STATES FOREIGN POLICY AND NATIONAL SECURITY



THE WHITE HOUSE
BRIEFING ROOM

Executive Order on Tackling the Climate Crisis at Home and Abroad

JANUARY 27, 2021 • PRESIDENTIAL ACTIONS

Section 101. Policy. United States international engagement to address climate change — which has become a climate crisis — is more necessary and urgent than ever. The scientific community has made clear that the scale and speed of necessary action is greater than previously believed. There is little time left to avoid setting the world on a dangerous, potentially catastrophic, climate trajectory. Responding to the climate crisis will require both significant short-term global reductions in greenhouse gas emissions and net-zero global emissions by mid-century or before.

It is the policy of my Administration that climate considerations shall be an essential element of United States foreign policy and national security. The United States will work with other countries and partners, both bilaterally and multilaterally, to put the world on a sustainable climate pathway. The United States will also move quickly to build resilience, both at home and abroad, against the impacts of climate change that are already manifest and will continue to intensify according to current trajectories.

Sec. 102. Purpose. This order builds on and reaffirms actions my Administration has already taken to place the climate crisis at the forefront of this Nation's foreign policy and national security planning, including submitting the United States instrument of acceptance to rejoin the Paris Agreement. In implementing — and building upon — the Paris Agreement's three overarching objectives (a safe global temperature, increased climate resilience, and financial flows aligned with a pathway toward low greenhouse gas emissions and climate-resilient development), the United States will exercise its leadership to promote a significant increase in global climate ambition to meet the climate challenge. In this regard:

...

(j) The Secretary of State shall prepare, within 60 days of the date of this order, a transmittal package seeking the Senate's advice and consent to ratification of the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, regarding the phasedown of the production and consumption of hydrofluorocarbons.

JOSEPH R. BIDEN JR.
THE WHITE HOUSE,
January 27, 2021

Read the [Executive Order](#) full text.

Image: The White House website.

EUROPE & CENTRAL ASIA

10. Green Cooling Summit 2021: Managing the HFC phase-down with natural refrigerants



Providing climate-friendly and energy-efficient cooling solutions is a key to protecting the climate and catering to people's vital needs around the world. The political realm understood early on that national solutions in the RAC sector are not sufficient in the fight against climate change. Global warming knows no borders. For this reason, countries around the world have joined forces. First, to protect the ozone layer under the Montreal Protocol. Since 2016, however, not only ozone-depleting refrigerants are to be phased out but also climate-damaging ones are to be gradually reduced under the Kigali Amendment.

In line with the Kigali Amendment to the Montreal Protocol, the HFC phase-down has already started in developed countries. For developing countries, it consists of two stages:

1. Developing countries will freeze the use of HFCs in the period between 2024/2028 and 2028/2031, respectively.
2. The actual phase-down begins in 2029/2032 and must be completed in 2045/2047, with only 20/15% of the baseline remaining.

Alternative refrigerants must have a low GWP and no ODP. Both of these characteristics apply to **natural refrigerants** such as ammonia, carbon dioxide and hydrocarbons, making them a viable and future-proof replacement for HFC refrigerants, especially when combined with **good energy performance** of appliances and buildings. Only this combination is the most sustainable in the long term. But how can the transition to Green Cooling be made as seamlessly as possible?

Green Cooling Summit 2021

The Green Cooling Summit 2021 is jointly organised by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), the Federal Environment Agency (UBA) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). During the 3-day programme, we will present...

- country-specific strategies and policies for the implementation of the Kigali Amendment that rely on natural refrigerants.
- technologies and best practice examples using natural refrigerants from developed (A2) and developing (A5) countries.

We cordially invite you to participate - From country representatives involved in the implementation of the Kigali Amendment, to refrigeration and air conditioning manufacturers, to end users interested in future-proof refrigeration and air conditioning solutions using natural refrigerants.

Proklima, Deutsche Gesellschaft für, Internationale Zusammenarbeit (giz) GmbH, January 2021 - Image: GIZ website

FEATURED



OZONE SECRETARIAT

Overview for the meetings of the ozone treaties in 2021

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

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.

Click [here](#) to access the HCFC Quota tracker app

Click [here](#) to access the flyer for more information on the tracker

Click [here](#) to see the short video tutorial on the OzonAction YouTube Channel

GWP-ODP Calculator Application – Updated

“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.



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



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.

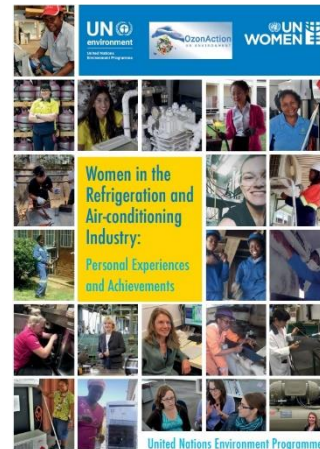


Women in the refrigeration and air-conditioning industry: Personal experiences and achievements

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.

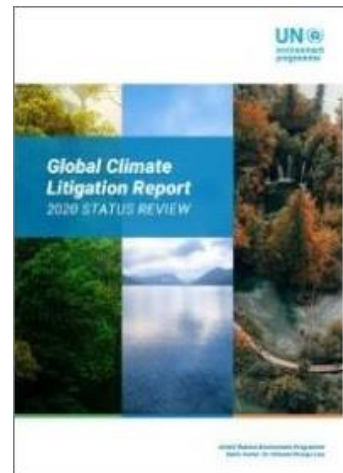
All of the professionals presented in the booklet are pioneers. They are role models whose stories should inspire a new generation of young women to enter the field and follow in their footsteps.

Read/download the [publication](#)



Excerpt from *The UNEP Global Climate Litigation Report: 2020 Status Review*, page 37 –

[...] “Recent decisions confirm that standing remains a prominent question in climate cases, and that courts’ approaches vary. A recent decision from the U.S. Court of Appeals for the District of Columbia accepts that global climate change can result in injury to a specific plaintiff. In *Natural Resources Defense Council v. Wheeler*, plaintiff challenged the government’s decision to repeal a GHG regulation, thereby allowing increased emissions of hydrofluorocarbons (HFCs). The court’s discussion of standing is matter-of-fact: “the [change] will lead to an increase in HFC emissions, which will in turn lead to an increase in climate change, which will threaten petitioners’ coastal property.”¹³ Since the court could undo the regulatory challenge, it reasoned that the petitioners had not only established injury and causation, but also that the court was empowered to redress their injury.” [...]



The report provides an overview of the current state of climate change litigation globally, as well as an assessment of global climate change litigation trends. It finds that a rapid increase in climate litigation has occurred around the world. In 2017 there were 884 cases brought in 24 countries. As of 1 July 2020, the number of cases has nearly doubled with at least 1,550 climate change cases filed in 38 countries. This growing tidal wave of climate cases is driving much-needed change.

The report shows how climate litigation is compelling governments and corporate actors to pursue more ambitious climate change mitigation and adaptation goals. It reports on key emerging trends in these cases, including the role of fundamental human rights connected to a safe climate and cases that bring to life the right to a healthy environment we now see in the constitutions of over 100 countries. It outlines how cases are forcing greater climate disclosures and ending “corporate greenwashing” on the subject of climate change and the energy transition. It reports how people are holding their governments to account, seeking to keep fossil fuels in the ground and challenging non-enforcement of climate-related laws and policies.

Summaries of significant cases appear throughout this report, and it also describes five types of climate cases that suggest where global climate change litigation may be heading in the coming years.

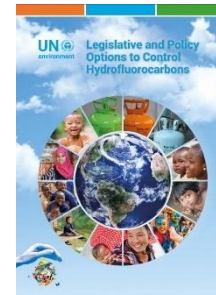
Read/download the [full report](#)

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. 9 - 2020** (in Italian).



Centro Studi Galileo magazine, **Industria & Formazione, International Special Issue 2019-2020** (in English).



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

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Prepared by: Samira Korban-de Gobert
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