



OzonAction

OZONNEWS



16 September 2017

Vol. XVII

Special Montreal Protocol 30th Anniversary

Ozone Day Issue

In this issue

1. UN Secretary-General António Guterres' Message on the International Day for the Preservation of the Ozone Layer "Marking the 30th Anniversary of the Montreal Protocol" 16 September 2017

2. UN Environment Executive Director Erik Solheim's Ozone Day 2017 Message

3. UN Environment Deputy Executive Director Ibrahim Thiaw's Ozone Day 2017 Message

4. On the Occasion of the 30th Montreal Protocol Anniversary, International Ozone Day, OzonAction is Pleased to Launch its Latest App, the: GWP-ODP-CALC

5. Message from Shamila Nair-Bedouelle, Head of OzonAction, to the National Ozone Officers – 2017 Ozone Day Celebrations!

6. Le Protocole de Montréal fête ses 30 ans ! Pour célébrer cet anniversaire, un symposium international est organisé à Paris les 19 et 20 septembre 2017. Il réunira les acteurs les plus éminents œuvrant au succès de ce Protocole

Celebrating the Montreal Protocol 30th Anniversary! On this occasion, an international symposium will be held in Paris on 19 and 20 September 2017. The symposium will bring together the most eminent players working towards the success of this Protocol

7. After 30 Years of the Montreal Protocol, the Ozone Layer is Gradually Healing

8. International Photo Contest on Climate Change and Ozone Layer - Winners Announced

9. We are All Ozone Heroes

10. 30 Years of Healing the Ozone Layer - How it all Happened



Multilateral Fund
for the Implementation of the Montreal Protocol

A fortnightly electronic news update on ozone and climate protection and the implementation of the Montreal Protocol



GLOBAL



1. UN Secretary-General António Guterres' Message on the International Day for the Preservation of the Ozone Layer

“Marking the 30th Anniversary of the Montreal Protocol”

16 September 2017

The 30th anniversary of the Montreal Protocol is a milestone for all people and our planet.

When scientists found that everyday products were destroying the fragile ozone layer, the world responded with the Montreal Protocol.

It rallies governments, companies, doctors, scientists and citizens to reverse the damage.

That saves millions of people from skin cancer and cataracts each year.

And the Protocol helps combat poverty, address climate change and protect the food chain.

The treaty also creates new business opportunities – and it will save the global economy over \$2 trillion by 2050.

Today we celebrate the 30th anniversary of the Montreal Protocol.

And we congratulate ozone heroes around the world.

Thank you.

[Arabic](#) | [Chinese](#) | [English](#) | [French](#) | [Russian](#) | [Spanish](#)

2. UN Environment Executive Director Erik Solheim's Ozone Day 2017 Message



3. UN Environment Deputy Executive Director Ibrahim Thiaw's Ozone Day 2017 Message



4. On the Occasion of the 30th Montreal Protocol Anniversary, International Ozone Day, OzonAction is Pleased to Launch its Latest App, the:

GWP-ODP Calculator smartphone application



The application allow you to easily convert ODP, CO₂-eq and metric quantities of refrigerants and other chemicals

- **Helps in understanding and reporting under the Montreal Protocol** (and future commitments under the Kigali Amendment)
- **The calculator will automatically perform the conversion between metric tonnes, ODP tonnes and/or CO₂-equivalent tonnes (or kg) and display the corresponding converted values**
- **The app includes both single component substances and refrigerant blends**
- **The components of a mixture and their relative proportions (metric, ODP, CO₂-eq) are also displayed.**

Available for **free** from the Google Playstore (*iOS version available very soon*)
Search for "GWP ODP CALC" in the Playstore to install!





5. Message from Shamila Nair-Bedouelle, Head of OzonAction, to the National Ozone Officers –2017 Ozone Day Celebrations!

Dear National Ozone Officers,

This year's International Day for the Preservation of the Ozone Layer on 16 September marks the 30th Anniversary of the Montreal Protocol on Substances that Deplete the Ozone Layer. And the theme “**Caring for life under the sun.**” is quite appropriate as ALL of us in the Montreal Protocol family and the general public at large should commit and collaborate with one another to ensure that the Montreal Protocol's timetable and objectives are achieved in order for continued life under the sun, now, and in the future.

National Ozone Units (NOUs) such as yours, and cooperation with other countries through the Regional Networks of Ozone Officers, have both played a crucial role towards the success achieved in the 30 years of the Montreal Protocol. Your consistency at Network Meetings over the years to discuss the challenges and the way forward in *caring for life under the sun* has truly been fruitful. Knowledge sharing and awareness raising at the country and regional levels is important for transmitting the news of the success to targeted stakeholders and this we must continue to do. We highly commend you, and your teams for your unwavering commitment and tremendous efforts in this regard.

Many of you, I am certain, are now busy organizing activities for the 30th Anniversary; OzonAction Compliance Assistance Programme (CAP) has dedicated a webpage with products that you may use for your events <http://www.unep.org/ozonaction/international-day-preservation-ozone-layer-2017>. Some of our recent products include the following:

1. Video: The Kigali Amendment – Opportunities and Next Steps: The Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer reached an agreement at the 28th Meeting of the Parties on 15 October 2016 in Kigali, Rwanda to phase down hydrofluorocarbons (HFCs). OzonAction has developed a video to find out from renowned international scientific, health, technical, financial and national experts the background and significance of the Kigali amendment.

2. Refrigerants Literacy eLearning Course: This is a free web-based course developed by UN Environment and ASHRAE. It provides instruction covering the basics of refrigerants used in air-conditioning and refrigeration applications.

3. Good Servicing Practices for Flammable Refrigerants: A Quick Guide: The aim of this practical guide book is to provide refrigeration and air-conditioning servicing technicians with a quick reference to the key safety classifications and technical properties of commercially available flammable refrigerants.

4. OzonAction Series of Fact Sheets Relevant to the Kigali Amendment (quick links): Following the adoption of the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, UN Environment's OzonAction prepared a series of fact sheets describing the immediate and future challenges to be addressed by the different Parties between now and until the amendment comes into force.

Please visit the [OzonAction Ozone Day 2017 website](#) for other interesting products. Also, in the right-hand column of this webpage you will find links to last year's Ozone Day webpage and other previous years; please feel free to browse through them for useful information and ideas.

We would also appreciate receiving your Ozone Day planned activities/reports for posting on the OzonAction website. You may send this information through your respective regional OzonAction CAP office or to Ms [Jo Chona](#).

If you require assistance or any specific awareness material for your celebrations, please do not hesitate to contact me or your nearest regional OzonAction CAP office.

I wish to take this opportunity to wish you all the best for the celebration of the 30th Anniversary in your country and look forward to receiving feedback from you.

Yours sincerely,

Shamila Nair-Bedouelle, Head of [OzonAction](#), UN Environment



OZONE DAY ACTIVITIES AROUND THE WORLD

Please visit the [OzonAction Ozone Day website](#) for other interesting products. Also, in the right-hand column of this webpage you will find links to last year's Ozone Day webpage and other previous years; please feel free to browse through them for useful information and ideas.

We would also appreciate receiving your Ozone Day planned activities/reports for posting on the OzonAction website. You may send this information through your respective regional OzonAction CAP office or to Ms [Jo Chona](#).

▶ [OzonAction Ozone Day 2017 website](#)



6. Le Protocole de Montréal fête ses 30 ans ! Pour célébrer cet anniversaire, un symposium international est organisé à Paris les 19 et 20 septembre 2017. Il réunira les acteurs les plus éminents œuvrant au succès de ce Protocole

Salué comme un exemple exceptionnel de coopération internationale pour la protection de l'environnement, le Protocole de Montréal est devenu en 2010 le premier traité international à obtenir une ratification universelle.

Signé le 16 septembre 1987, ce Protocole a permis d'enrayer la destruction de la couche d'ozone qui préserve la vie sur notre planète et nous protège du rayonnement ultraviolet dangereux du soleil, via la réglementation et l'interdiction des substances appauvrissant la couche d'ozone (SAO). Selon certaines études, le nombre de cancers de la peau supplémentaires évités grâce au Protocole de Montréal est estimé à environ 2 millions à l'horizon 2030.

L'élimination des SAO a également contribué à la protection du climat car bon nombre d'entre elles sont de puissants gaz à effet de serre. L'amendement de Kigali, ajouté au Protocole en 2016, permet de contrôler l'émission des produits de substitution aux SAO ayant un pouvoir réchauffant élevé. La mise en œuvre de cet amendement empêchera jusqu'à 0,5 °C de réchauffement d'ici la fin du siècle, contribuant ainsi à la réalisation des objectifs de l'accord de Paris.

Le Protocole de Montréal agit donc pour la protection de la couche d'ozone, du climat et de la vie sur Terre.

Le Symposium international est organisé par l'Académie des Sciences, l'Observatoire de Versailles Saint-Quentin en Yvelines et la Commission Internationale sur l'Ozone. Il est sponsorisé par l'Institut Pierre-Simon Laplace,

l'OMM, la NASA, le CNES, la fondation Mariolopoulos - Kanaginis et ONU environnement. Il développera les thèmes suivants :

- Science de la couche d'ozone : perspective historique et enjeux actuels
- Impact de la destruction de la couche d'ozone sur la santé, les écosystèmes et le climat ; Impact des SAO et de leurs substituts sur le climat
- Rôle de l'industrie dans le Protocole de Montréal
- Géo-ingénierie et impacts potentiels sur la couche d'ozone
- Controverses sur le climat et sur la destruction de la couche d'ozone

Lieu : Fondation Del Duca, 10, rue Alfred de Vigny, Paris 75008

Pour en savoir plus : <http://montreal30.io3c.org>

Lien direct programme: <http://montreal30.io3c.org/programme>

Suivre le Symposium en direct: <https://www.youtube.com/channel/UC4gCwLtvftkM2oeTBO53vxQ/live>

le 19 septembre à partir de 9h30, une pause de diffusion entre 12h30-13h30 (heure de Paris)

le 20 septembre à partir de 9h00, une pause de diffusion entre 12h30-13h30 (heure de Paris)

Contact :

Dr. Sophie Godin-Beekmann, Présidente de la Commission internationale sur

l'Ozone (IO3C), sophie.godin-beekmann@latmos.ipsl.fr

Dr. Marie-Lise Chanin, Académie des Sciences marie-lise.chanin@latmos.ipsl.fr

Celebrating the Montreal Protocol 30th Anniversary! On this occasion, an international symposium will be held in Paris on 19 and 20 September 2017. The symposium will bring together the most eminent players working towards the success of this Protocol

Hailed as an outstanding example of international cooperation for environmental protection, in 2010 the Montreal Protocol became the first international treaty to achieve universal ratification.

Signed on 16 September 1987, the Protocol has halted the destruction of the ozone layer, which protects our planet and protects us from the harmful ultraviolet radiation of the sun through the regulation and prohibition of Ozone Depleting Substances (ODS). According to various studies, the number of additional cases of skin cancers avoided by the Montreal Protocol is estimated to about 2 millions by 2030.

The elimination of ODS has also contributed to the protection of the Earth climate because many of them are powerful greenhouse gases. The Kigali amendment, added to the Protocol in 2016, regulates the emission of ODS substitutes with high global warming potential. Implementation of this amendment will prevent up to 0.5° C of warming by the end of the century, thus contributing to the achievement of the Paris agreement objectives.

The Montreal Protocol is therefore working to protect the ozone layer, climate and life on Earth.

The International Symposium is organized by the Academy of Sciences, the Observatory of Versailles Saint-Quentin en Yvelines and the International Commission on Ozone. It is sponsored by the Institut Pierre-Simon Laplace, WMO, NASA, CNES, Mariolopoulos-Kanaginis Foundation and UN Environment. It will develop the following themes:

- Science of the ozone layer: historical perspective and current issues
- Impact of the destruction of the ozone layer on health, ecosystems and climate; Impact of ODS and their substitutes on climate
- Role of industry in the Montreal Protocol
- Geo-engineering and potential impacts on the ozone layer
- Controversies on climate and the destruction of the ozone layer

Venue: Fondation Del Duca, 10, rue Alfred de Vigny, Paris 75008

For more information: <http://montreal30.io3c.org>

Follow the live Broadcast: <https://www.youtube.com/channel/UC4gCwLtvftkM2oeTBO53vxQ/live>

19 September from 9:30 am, a broadcast break between 12:30 and 13:30 (Paris time)

20 September from 9:00 am, a broadcast break between 12:30 and 13:30 (Paris time)

Contact :

Dr. Sophie Godin-Beekmann, Présidente de la Commission internationale sur l'Ozone (IO3C), sophie.godin-beekmann@latmos.ipsl.fr

Dr. Marie-Lise Chanin, Académie des Sciences marie-lise.chanin@latmos.ipsl.fr

7. After 30 Years of the Montreal Protocol, the Ozone Layer is Gradually Healing

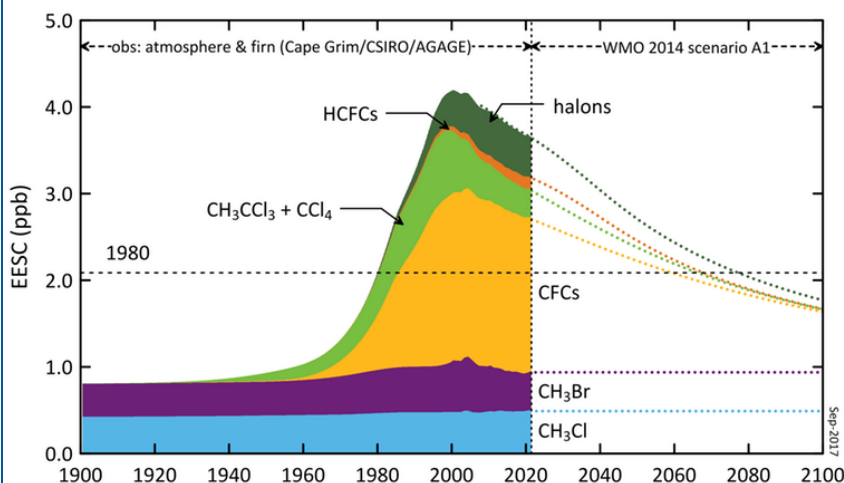
This weekend marks the 30th birthday of the Montreal Protocol, often dubbed the world's most successful environmental agreement. The treaty, signed on September 16, 1987, is slowly but surely reversing the damage caused to the ozone layer by industrial gases such as chlorofluorocarbons (CFCs).

Each year, during the southern spring, a hole appears in the ozone layer above Antarctica. This is due to the extremely cold temperatures in the winter stratosphere (above 10km altitude) that allow byproducts of CFCs and related gases to be converted into forms that destroy ozone when the sunlight returns in spring.

As ozone-destroying gases are phased out, the annual ozone hole is generally getting smaller – a rare success story for international environmentalism.

Back in 2012, our Saving the Ozone series marked the Montreal Protocol's silver jubilee and reflected on its success. But how has the ozone hole fared in the five years since?

The Antarctic ozone hole has continued to appear each spring, as it has since the late 1970s. This is expected, as levels of the ozone-destroying halocarbon gases controlled by the Montreal Protocol are still relatively high. The figure below shows that concentrations of these human-made substances over Antarctica have fallen by 14% since their peak in about 2000.



Past and predicted levels of controlled gases in the Antarctic atmosphere, quoted as equivalent effective stratospheric chlorine (EESC) levels, a measure of their contribution to stratospheric ozone depletion. Paul Krummel/CSIRO, Author provided

It typically takes a few decades for these gases to cycle between the lower atmosphere and the stratosphere, and then ultimately to disappear. The most recent official assessment, released in 2014, predicted that it will take 30-40 years for the Antarctic ozone hole to shrink to the size it was in 1980.

Signs of recovery

Monitoring the ozone hole's gradual recovery is made more complicated by variations in atmospheric temperatures and winds, and the amount of microscopic particles called aerosols in the stratosphere. In any given year these can make the ozone hole bigger or smaller than we might expect purely on the basis of halocarbon concentrations.



Launching an ozone-measuring balloon from Australia's Davis Research Station in Antarctica. Barry Becker/BOM/AAD, Author provided

The 2014 assessment indicated that the size of the ozone hole varied more during the 2000s than during the 1990s. While this might suggest it has become harder to detect the healing effects of the Montreal Protocol, we can nevertheless tease out recent ozone trends with the help of sophisticated atmospheric chemistry models.

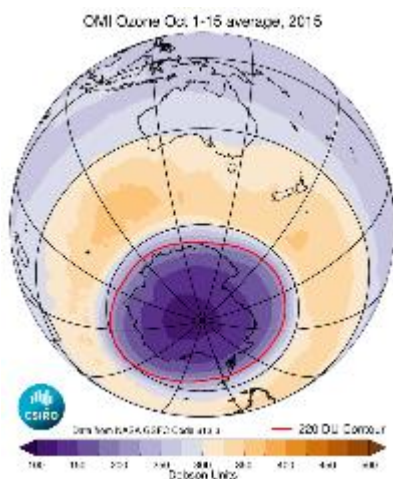
Reassuringly, a recent study showed that the size of the ozone hole each September has shrunk overall since the turn of the century, and that more than half of this shrinking trend is consistent with reductions in ozone-depleting substances.

However, another study warns that careful analysis is needed to account for a variety of natural factors that could confound our detection of ozone recovery.

The 2015 volcano

One such factor is the presence of ozone-destroying volcanic dust in the stratosphere. Chile's Calbuco volcano seems to have played a role in enhancing the size of the ozone hole in 2015.

At its maximum size, the 2015 hole was the fourth-largest ever observed. It was in the top 15% in terms of the total amount of ozone destroyed. Only 2006, 1998, 2001 and 1999 had more ozone destruction, whereas other recent years (2013, 2014 and 2016) ranked near the middle of the observed range.



Average ozone concentrations over the southern hemisphere during October 1-15, 2015, when the Antarctic ozone hole for that year was near its maximum extent. The red line shows the boundary of the ozone hole. Paul Krummel/CSIRO/EOS, Author provided

Another notable feature of the 2015 ozone hole was that it was at its biggest observed extent for much of the period from mid-October to mid-December. This coincided with a period during which the jet of westerly winds in the Antarctic stratosphere was particularly unaffected by the warmer, more ozone-rich air at lower latitudes. In a typical year, the influx of air from lower latitudes helps to limit the size of the ozone hole in spring and early summer.

The 2017 hole

As noted above, the ozone holes of 2013, 2014 and 2016 were relatively unremarkable compared with that of 2015, being close to the long-term average for overall ozone loss.

In general respects, these ozone holes were similar to those seen in the late 1980s and early 1990s, before the peak of ozone depletion. This is consistent with a gradual recovery of the ozone layer as levels of ozone-depleting substances gradually decline.

This year's hole began to form in early August, and the timing was similar to the long-term average. Stratospheric temperatures during the Antarctic winter were slightly cooler than in 2016, which would favour enhancement of the chemical changes that lead to ozone destruction in spring. However, temperatures climbed above average in mid-August during a disturbance to the polar winds, delaying the hole's expansion. As of the second week of September, the warmer-than-average temperatures have continued but the ozone hole has grown slightly larger than the long-term average since 1979.

While annual monitoring continues, which includes measurements under the Australian Antarctic Program, a more comprehensive assessment of the ozone layer's prospects is set to arrive late next year. Scientists across the globe, coordinated by the UN Environment Program and the World Meteorological Organisation, are busy preparing the next report required under the Montreal Protocol, called the Scientific Assessment of Ozone Depletion: 2018.

This peer-reviewed report will examine the recent state of the ozone layer and the atmospheric concentration of ozone-depleting chemicals, how the ozone layer is projected to change, and links between ozone change and climate.

In the meantime we'll watch the 2017 hole as it peaks then shrinks over the remainder of the year, as well as the ozone holes of future years, which will tend to grow less and less large as the ozone layer heals.

▶ [The Conversation](#), 14 September 2017

8. International Photo Contest on Climate Change and Ozone Layer - Winners Announced

Tashkent, Uzbekistan - The announcement ceremony of the winners of the international photo contest on climate change and ozone layer and a photo exhibition of winning photographs was held at the Art Gallery in Tashkent.

This year marks the 30th anniversary of the Montreal Protocol and the photo contest aimed at sending a global message through photographs to protect the ozone layer for this and future generations and contribute significantly to global efforts to address climate change. The international photo contest was organized by UNDP Uzbekistan, State Committee on Ecology and Environment Protection of Republic of Uzbekistan and Centre of

Hydrometeorological Service under the Ministry of Emergency Situations of Republic of Uzbekistan in partnership with UNDP regional hub in Istanbul and OzonAction branch of United Nations Environment Programme (UNEP).

“I believe the International Photo Contest that we are jointly finalizing today, was able to demonstrate the importance of taking timely action to protect our planet, the only one, for sustainable development of the humanity, and to leave the nature and environment to our next generations in the same condition as we have inherited from our ancestors”, said Helena Fraser, UNDP Resident Representative in Uzbekistan during the announcement ceremony.

The international photo contest was held in two categories: 'The Ozone Layer and the 'I and Climate Change with my Eyes'. The contest attracted participants from 155 countries around the world, receiving 285 submissions from amateurs and professional photographers from 60 countries.

All the submitted photographs went through 3 stages of selection: preliminary voting by an international jury panel, open online voting at www.envcontest.uz to identify the best 20 photographs (10 in each category).

The winners of the photo contest are the following:



Category ‘Ozone Layer and I’

1. Lusine Torosyan (Armenia)
2. Shamsieva Khurshidakhon (Uzbekistan)
3. Viktorija Joveva (Macedonia (FYROM))

Category ‘Climate Change in my Eyes’

1. Moniruzzaman Sazal (Bangladesh)
2. Naveed Ali (Pakistan)
3. Markarimov Azamat (Uzbekistan)

Special ‘Women and Ozone Layer’ Category by UNDP Regional Bureau in Istanbul:

Rabemanantsoa Andry (Madagascar)

Special Category by the ‘UzWaterAware’ national project (Uzbekistan), implemented by the Regional Environmental Centre for Central Asia (CAREC) and funded by the European Union:

Ecaterina Herta, (Moldova), Pranab Basak (India), Anvar Ilyasov (Uzbekistan), Azamat Matkarimov (Uzbekistan), Khubutiya Rusidan (Uzbekistan).

Exhibition of photographs is open to the public from September 12-16 at the Arts Gallery of Uzbekistan.

▶ UzDaily, 12 September 2017

9. We are All Ozone Heroes



This September marks 30 years since the Montreal Protocol on Substances that Deplete the Ozone Layer was adopted. In honour of this important milestone, the Ozone Secretariat and the global community are launching the

#OzoneHeroes campaign. A public engagement campaign to celebrate the international agreement's success in protecting Earth against ozone depletion and mitigating climate change.

The campaign seeks to inspire the same collaborative energy that propelled the Montreal Protocol's mission and led to its continued success in protecting all life on Earth.

The campaign storyline is centered around a partnership with [Marvel Comics](#), the company behind some of the world's most beloved superheroes. Through this partnership, we have created an audience journey that follows Iron Man and the Guardians of the Galaxy in a Marvel-produced comic as they discover humans are the superheroes who solved the global issue of ozone depletion.

The story features campaign champions as superheroes and drives the audience to the #OzoneHeroes website (www.ozoneheroes.org), where people can take a quiz to discover their superpower. This serves to remind people that our human qualities are what equip us to solve the world's most pressing problems and that we are all #OzoneHeroes.

The campaign will commence tomorrow, 15 September, on the eve of World Ozone Day in Montreal, Canada, at a global launch event to be presided over by Canada's Minister of Environment and Climate Change Catherine McKenna, the European Union Commissioner for Climate Action and Energy Miguel Arias Cañete, myself and attended by UN representatives, scientists, policymakers, environmentalists and special guests.

We are pleased to share various communication materials for the campaign, which we kindly request you to disseminate widely through your networks. They include a backgrounder and a presentation on the campaign, social media visuals and messages and a press release.

▶ These materials are available from the [Ozone Secretariat](#)

10. 30 Years of Healing the Ozone Layer - How it all Happened

2017 marks the 30th anniversary of the Montreal Protocol, the international agreement that has led to the phase-out of more than 99% of ozone-depleting chemicals and significantly contributed to climate change mitigation. The



Protocol garnered the support of stakeholders from 197 countries, signaling a truly global effort to make changes for a greater good. As of today, the ozone layer is showing signs of healing and is set to recover by the middle of the century.

Professor John Pyle, Dr Neil Harris and colleagues at the University of Cambridge and the National Centre for Atmospheric Science played a leading role in demonstrating the effect of man-made gases on the ozone layer, and the consequences for human health.

Their contributions played a key part in the strengthening of the Montreal Protocol, widely regarded as one of the most successful international agreements ever enacted. The protocol, along with other pieces of related legislation, has ensured the rapid phase-out of ozone depleting substances. As a result, the hole in the ozone now appears to be slowly closing, preventing a number of UV-related health problems worldwide, including skin cancer, sunburn and cataracts.

▶ [NERC Science](#), 12 September 2017



FEATURED

OZONE SECRETARIAT

- ▶ Vienna Convention and Montreal Protocol Meetings: A Primer - [Read/Download](#)
- ▶ - [Twenty-Eighth Meeting of the Parties](#)

- ▶ Final text of the Kigali Amendment to the Montreal Protocol available in all the six official UN languages ([A C E F R S](#))
- ▶ OEWG 39: The 39th Session of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, preceded by the 58th meeting of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol, held on 9 July and a workshop on safety standards relevant to the use of low-GWP alternatives to HFCs, held on 10 July 2017.
 - [Draft report of the thirty-ninth meeting of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer - Addendum](#)
 - [Draft report of the thirty-ninth meeting of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer](#)
- ▶ Click [here](#) for further information.

«Caring for All Life under the Sun” Theme and Logo for 30th Anniversary of the Montreal Protocol and International Ozone Day 2017

The 30th anniversary of the Montreal Protocol, which we are commemorating this year, and the International Day for the Preservation of the Ozone Layer to be marked on 16 September, will be celebrated under the theme:

Caring for All Life Under the Sun



The theme is complemented by a logo that illustrates the Montreal Protocol’s focused and singular goal to protect all life on Earth.

The logo and theme celebrate the Montreal Protocol's critical role in caring for life on the planet over the past 30 years by preventing massive damage to human health and the environment from excessive ultraviolet radiation from the sun by phasing out nearly 99 per cent of close to 100 substances that deplete the ozone layer.

As a result of the unwavering commitment of the parties to the Montreal Protocol during the past three decades, the ozone layer is on track to recovery by mid-century. In addition, up to 2 million cases of skin cancer may be prevented each year by 2030.

The Montreal Protocol is also one of the prime contributors to the fight against climate change, as it averted more than 135 billion tonnes of carbon dioxide equivalent emissions from 1990 to 2010.

The Kigali Amendment to the Montreal Protocol, which was adopted in 2016, is expected to avoid up to 0.5° Celsius warming by the end of the century, while continuing to protect the ozone layer.

The logo and theme in all the six official UN languages are posted on the Ozone Secretariat [website](#) for wider dissemination, together with brand guidelines on their usage. Parties are also encouraged to download and use the email signature image of the logo and theme.

In the coming months, the Ozone Secretariat will conduct a communication campaign to celebrate the 30th anniversary and will provide the parties with more information about the campaign and related products to support commemorative activities. We would also be pleased to receive any information products for your planned commemorative activities for wide dissemination through our website.

As in previous years, we expect that the United Nations Secretary-General’s message for International Ozone Day to be shared prior to the day for further dissemination.

Once again, the Ozone Secretariat will provide limited financial assistance to four developing countries to contribute towards organizing their national commemorative activities. The Secretariat invites the parties to submit their plans of celebration activities and requests for assistance by 31 May 2017. Kindly send them to the Secretariat at dan.tengo@unep.org and ozone.info@unep.org

– Browse through the Ozone Secretariat “[In Focus](#)” to learn about latest updates.

– Click [here](#) for Montreal Protocol Meetings Dates and Venues

The UN Environment Assessment Panels have been the pillars of the ozone protection regime since the very beginning of the implementation of the Montreal Protocol. Through provision of independent technical and scientific

assessments and information, the Panels have helped the Parties reach informed decisions that have made the Montreal Protocol a world-recognized success.

UNEP initiated the process of setting up the assessment panels in 1988, pursuant to Article 6 of the Montreal Protocol, to assess the scientific issues of ozone depletion, environmental effects of ozone depletion, and the status of alternative substances and technologies and their economic implications.

Four panels, namely the panels for Scientific, Environmental Effects, Technology, and Economic Assessments were formally established and approved at the First Meeting of the Parties to the Montreal Protocol in 1989 where their first set of Terms of Reference were adopted. Shortly after the Second Meeting of the Parties in 1990, the Panels for Technical Assessment and the Panel for Economic Assessment were merged into one Panel called the Technology and Economic Assessment Panel (TEAP), which together with the Scientific Assessment Panel (SAP) and the Environmental Effects Assessment Panel (EEAP) make up the three assessment panels active today.

In accordance with Article 6 of the Montreal Protocol and subsequent decisions of the Parties, the three panels carry out a periodic assessment at least every 4 years. The first assessment reports were published in 1989 and since then major periodic assessments have been published by all three panels in 1991, 1994, 1998, 2002, 2006 and 2010. For each periodic assessment, the key findings of the panels are synthesized into a short report. The full SAP assessment report for 2014 was published in December 2014, while the EEAP assessment report for 2014 was published in January 2015.

PROGRESS & QUADRENNIAL ASSESSMENT REPORTS

- [EEAP](#)
- [SAP](#)
- [TEAP](#)

[Assessment Panels List of Meetings](#)

SYNTHESIS REPORTS

- [2014 assessments](#)
- [2010 assessments](#)
- [2006 assessments](#)

THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL



[79th meeting of the Executive Committee, Bangkok, 3-7 July 2017](#)

[Report of the 78th meeting of the Executive Committee](#)

[Adjusted business plan of the Multilateral Fund for 2017-2019 after the 77th meeting of the Executive Committee](#)

[▶ Learn more](#)

OZONACTION

UN Environment, [OzonAction](#) highlights



OzonAction Smartphone Application

WhatGas?

Quickly search for the information you need



- Chemical name
- Chemical formula
- Chemical type
- ASHRAE designation
- Trade names
- HS code •
- CAS number
- UN number
- Montreal Protocol Annex and Control measures
- Ozone depleting potential (ODP)
- Global warming potential (GWP)
- Blend components
- Toxicity and flammability class
- Main uses

Now available for **free** in the Google Play and Apple Store



Scan the QR code or search for “UNEP”, “OzonAction” or “WhatGas?”



OzonAction is pleased to share with you some awareness raising products that you can download and use for your activities to celebrate the

30th Anniversary of the Montreal Protocol on Substances that Deplete the Ozone Layer, and the International Ozone Protection Day, on 16 September.

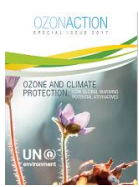
Please visit OzonAction' 2017 Ozone Day [website >>>](#)

[The Kigali Amendment to the Montreal Protocol - Opportunities and Next Steps](#) - OzonAction Video

The Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer reached agreement at their 28th Meeting of the Parties on 15 October 2016 in Kigali, Rwanda to phase down hydrofluorocarbons (HFCs). The UN Environment, OzonAction developed a video to find out from renowned international scientific, health, technical, financial and national experts about background and significance of this Kigali amendment.

The amendment presents many opportunities: improving the environment, refrigeration and air-conditioning systems and especially energy efficiency. It also presents new challenges. It is absolutely critical now for industry, governmental bodies and civil society to work together to adopt greener technologies in each country of the world and fight global warming.





Ozone and Climate Protection: Low-Global Warming Potential Alternatives - OzonAction Special Issue 2017

OzonAction Factsheets:



[HS codes for HCFCs and certain other Ozone Depleting Substances ODS](#) (post Kigali update)



[The Kigali Amendment to the Montreal Protocol: HFC Phase-down](#) - The phase-down of HFCs under the Montreal Protocol on Substances that Deplete the Ozone Layer has been under negotiation by the Parties since 2009 and the successful agreement on the Kigali Amendment at the 28th Meeting of the Parties on 15 October 2016 in Kigali, Rwanda to phase-down hydrofluorocarbons (HFCs) continues the historic legacy of the Montreal Protocol. This factsheet summarises and highlights the main elements of the Amendment of particular interest to countries operating under Article 5 of the Protocol (Article 5 Parties).



OzonAction Factsheet: [Refrigerant Blends: Calculating Global Warming Potentials](#) (post-Kigali update)



OzonAction Factsheet: [Global Warming Potential \(GWP\) of Refrigerants: Why are Particular Values Used?](#) (post-Kigali update).



OzonAction Factsheet: [Tools Commonly used by Refrigeration and Air-Conditioning Technicians](#)

Get the new RAC Technician Video App

Watch our short instructional videos on refrigeration & air-conditioning techniques, safety and best practices on your mobile device. Available in English, French, Spanish, and German.



Download for free from Google Play Store & Apple Store/iTunes or scan this QR code



OzonAction Multimedia Video Application: Refrigeration and Air-conditioning Technician Video Series - 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. Additional videos will be added regularly.

Please share with your RAC associations, technicians and other interested stakeholders... **Over 11, 200 installations to date!**

Now available in the [Android Play Store](#) and Apple Store/iTunes.



(Just search for 'OzonAction' or scan this QR Code)



OzonApp eDocs+ launched in Android Play Store and Apple Store. This new application launched by OzonAction on February 12, includes publications, videos, fact sheets and other awareness materials to help National Ozone Units (NOUs) and other stakeholders to build their capacity to implement the Montreal Protocol in a sustainable manner and at the same time to derive climate benefits. Now available in the [Android Play Store](#) and Apple Store/iTunes.



(Just search for "OzonAction", or scan this QR code)

OzonAction News Drops - UNEP OzonAction is presenting a series of short video “News Drops” which focus on ozone layer protection, climate change and the importance of continuing ozone observations.



Regional News Drops

The Regional Networks of National Ozone Units (NOUs) under the Multilateral Fund are a path-breaking mechanism for North-South and South-South cooperation. Networking provides a platform for NOUs from Article 5 countries to exchange experiences, develop their skills and tap the expertise of their peers in both developing and developed countries. Conducted at the regional level, the Networking activity builds the Ozone Officers' skills for implementing and managing their national ODS phase-out activities. During 2016 these videos were filmed at the regional network meetings around the world.

The NOUs were asked about their success stories, alternative refrigerants selected and their personal messages for national ozone celebrations...

Click [here](#) to access the News Drops

OzonAction Recent Publications:



Lower-GWP Alternatives in Commercial and Transport Refrigeration: An expanded compilation of propane, CO₂, ammonia and HFO case studies - This booklet presents an expanded compilation of case studies on lower-GWP alternatives in commercial and transport refrigeration and provides an update to the first set of case studies which was published in 2014 by UNEP DTIE OzonAction/CCAC (Low GWP Alternatives in Commercial Refrigeration: Propane, CO₂ and HFO Case Studies).



NATIONAL CERTIFICATION SCHEMES FOR RAC SERVICING TECHNICIANS - This publication aims to provide introductory information for institutions in developing countries to better understand the issue of certification in the field of refrigeration and air conditioning, to assist in the creation of such certification and training schemes and to demonstrate to service technicians and enterprises why it is in their interest to participate.



THE MONTREAL PROTOCOL AND HUMAN HEALTH - This booklet summarizes how the successful implementation of the Montreal Protocol has protected human health. It describes how ozone depletion would have led to increases in UV radiation and, based on current understanding of the mechanisms by which UV affects biological processes, how that would have led to a dramatic increase in skin cancers, cataracts and affected human health in other ways. It also covers recent progress in understanding the ‘World Avoided’ – that is the world we would have lived in without a successful Montreal Protocol.



FINANCING THE CLIMATE CO-BENEFITS OF THE HCFC PHASE-OUT - A guide for Low Volume Consuming Countries - Hydrochlorofluorocarbons (HCFCs) are being phased out worldwide under the Montreal Protocol on Substances that Deplete the Ozone Layer. The Parties to this treaty encouraged countries to promote the selection of alternatives to HCFCs that minimise environmental impacts, in particular impacts on climate. The Protocol’s Multilateral Fund encourages developing countries to explore potential financial incentives and opportunities for additional resources to maximise the environmental benefits from HCFC Phase out Management Plans (HPMPs). This booklet explains how Ozone Officers in low volume consuming countries can explore such opportunities for climate co-benefits.
[English](#) | [French](#) | [Spanish](#)



SAFE USE OF HCFC ALTERNATIVES IN REFRIGERATION AND AIR CONDITIONING - An Overview for Developing Countries - Many of the alternative refrigerants to hydrochlorofluorocarbons (HCFCs) have particular characteristics in terms of toxicity, flammability and high pressure which are different from those used previously. It is therefore important that the refrigeration and air-conditioning industry adapts to both the technical and safety issues concerning these refrigerants. This publication provides an overview of the alternatives, their general characteristics and their application in the context of the safety issues. It

provides guidance for National Ozone Units (NOUs) and other interested parties in developing countries on how they can advise and assist their national stakeholders in the selection and implementation of alternative refrigerants.



PHASING-OUT HCFCs IN SMALL AND MEDIUM-SIZED ENTERPRISES - This booklet aims to assist foam enterprises, especially SMEs, to better understand policies on HCFC phase-out, access to assistance from the Multilateral Fund for the Implementation of the Montreal Protocol and access alternative technologies in different foam applications taking into account challenges in converting to alternative technology. It also discusses some tips on how to identify enterprises that may use HCFCs and verify the HCFCs consumption of enterprises.



INTERNATIONAL STANDARDS IN REFRIGERATION AND AIR-CONDITIONING - This guide provides an introduction and simple overview of the issues related to international standards in the refrigeration and air-conditioning sector and how they can be useful in the context of the phase-out of hydrochlorofluorocarbons (HCFCs) in developing countries as required by the Montreal Protocol on Substances that Deplete the Ozone Layer.

EVENTS

2017



FEBRAVA 2017 - 20th International Refrigeration, Airconditioning, Ventilation, Heating and Air Treatment Fair, 12 - 15 September 2017, Sao Paulo, Brazil



Future of HVAC 2017 – 13–14 September 2017, Sydney, NSW, Australia

EUREKA²⁰¹⁷ ITALY

EUREKA Italy, the first stop of the EUREKA roadshow, on 15 September 2017 in Mestre (Venice), Italy. **EPEE** and **EVIA**, the organisers of the annual **EUREKA** conference, are launching the "EUREKA roadshow", a series of national events to discuss the challenges the HVAC-R industry faces across EU Member States. [Register here!](#)



Symposium for the celebration of the Montreal Protocol 30th Anniversary - From the safeguard of the ozone layer to the protection of the earth climate, 19 - 20 September 2017, Paris, France



Le salon SIFA (salon interprofessionnel du froid et ses applications), organisé par La Rpf et le groupe LSA / Usine Nouvelle, aura lieu du 3 au 5 octobre 2017 au Dock Pullman de Paris, France. Le SIFA est un salon-congrès portant sur les enjeux réglementaires, économiques, techniques et environnementaux relatifs au FROID dans les domaines du tertiaire, de la grande distribution, l'agroalimentaire et de l'industrie.

EUREKA²⁰¹⁷

EUREKA 2017: Heating, Cooling & Ventilation: Sustainable technologies for a better life, 11-12 December 2017, Berlin, Germany

2018



The 1st IIR International Conference on the Application of HFO Refrigerants, 2-5 September 2018, Austin Court Conference Centre, Birmingham, United Kingdom

Abstract Submission Deadline Coming Up on 2 October

There is still time to submit your abstract for the inaugural international conference on the application of HFO refrigerants. Abstracts are due on **2 October 2017** and are required to report on original research or on technical developments and their applications. With the phase-down programme now being implemented in Europe and

HFOs increasingly presenting a viable alternative, the conference will provide up to date information on these types of refrigerants. Papers exploring and reporting on the conference themes are invited, these include:

- characteristics of HFO refrigerants
- design issues for systems, components and controls
- safety issues (flammability risk analysis, design considerations, operating experience)
- legislation, codes of practise and standards
- responsible use and environmental considerations

The conference will also accept papers that include comparisons with other low and moderate GWP fluids such as R32, ammonia, CO₂ and hydrocarbons.

The event will take place at IET Birmingham Austin Court between 2 and 5 September 2018 and will provide a common arena for HFO refrigerants specialists and those having with interest in this topic including users, component manufacturers, product development specialist, researcher and development experts, system and equipment designers, senior managers and policy makers.

Click [here](#) for further information on call for papers



[The HVAC & Refrigeration Show](#), 23 - 25 January 2018, London, United Kingdom



[AIRAH Refrigeration 2018](#), 26 – 27 March 2018, Sydney, Australia



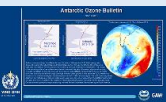
READING



[Twenty Questions and Answers About the Ozone Layer](#), presents complex science in a straightforward manner. It complements the [2014 Scientific Assessment Report of Ozone Depletion](#) by WMO and the U.N. Environment Programme.



[UNEP and USEPA: Promoting ozone and climate-friendly technologies in public procurement - a scoping study of Asia Pacific](#)



[WMO Antarctic Ozone 2016 Bulletins](#) - Containing information on the state of the ozone layer in the Antarctic at roughly two week intervals from August to November. The bulletins are based on data provided by WMO Members which operate ozone monitoring stations in the southern hemisphere and satellites to observe ozone globally.



The [EU F-Gas Regulation Handbook](#), Keeping Ahead of the Curve as Europe Phases Down HFCs - a free online resource for climate media and other concerned parties, published by the London-based Environmental Investigation Agency (EIA).



[Alternative Refrigerant Evaluation for High-Ambient-Temperature Environments: R-22 and R-410A Alternatives for Mini-Split Air Conditioners](#)



[AREA Guidance on minimum requirements for contractors' training & certification on low GWP Refrigerants](#) - AREA has updated its Guidance on minimum requirements for contractors' training & certification on low GWP Refrigerants.



[Free guide to F-gas changes](#) The European contractors association AREA has produced a timely guide to the F-gas regulations which clarifies the new rules, their impact and their practical application... [Read more](#)



The recent [Alternatives to HCFCs/HFCs in developing countries](#) with a focus on high ambient temperatures” study carried out by Öko-Recherche for the European Commission stresses that the refrigerant and blowing agent demand is expected to triple by 2030 in developing countries as a result of economic growth. A sector by sector analysis shows that a climate-friendly replacement for current and future of HCFCs and high GWP HFCs is possible in most applications ...



[Primer on Hydrofluorocarbons](#), Fast action under the Montreal Protocol can limit growth of HFCs, prevent up to 100 billion tonnes of CO₂-eq emissions by 2050, and avoid up to 0.5°C of warming by 2100. IGSD, January 2014, Lead authors: Durwood Zaelke, Nathan Borgford-Parnell, and Danielle Fest Grabiell. Contributing authors: Stephen O. Andersen, Xiaopu Sun, Dennis Clare, Yuzhe Peng Ling, and Alex Milgroom.



[Flammable Refrigerants Safety Guide](#), AIRAH - Many of the refrigerants traditionally used in refrigeration and air conditioning systems in Australia have been non-flammable, non-toxic, synthetic greenhouse gases (SGGs) that have a high global warming potential (GWP). These were typically synthetic refrigerants including CFCs, HCFCs and HFCs. Due to the growing national and international concern regarding the resulting atmospheric effects of SGGs, the use of alternative low GWP refrigerants is increasing. ...



[Recent Trends in Global Emissions of Hydrochlorofluorocarbons and Hydrofluorocarbons: Reflecting on the 2007 Adjustments to the Montreal Protocol](#). S. A. Montzka *†, M. McFarland ‡, S. O. Andersen §, B. R. Miller †||, D. W. Fahey †, B. D. Hall †, L. Hu †||, C. Siso †||, and J. W. Elkins †† Earth System Research Laboratory, National Oceanic and Atmospheric Administration, Boulder, Colorado 80305, United States ‡ DuPont Chemicals & Fluoroproducts, Wilmington, Delaware 19805, United States § Institute for Governance & Sustainable Development, Washington, D.C. 20007, United States || Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, United States.



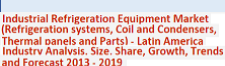
[Geothermal Heating and Cooling: Design of Ground-Source Heat Pump Systems-ASHRAE](#)



A first edition, the IIR guide “[CO₂ as a Refrigerant](#)” highlights the application of carbon dioxide in supermarkets, industrial freezers, refrigerated transport, and cold stores as well as ice rinks, chillers, air conditioning systems, data centers and heat pumps. This guide is for design and development engineers needing instruction and inspiration as well as non-technical experts seeking background information on a specific topic. Publication, IIR Technical Guide, 2014.



FREE [HVAC Optimisation Guide released](#) by AIRAH and the NSW Office of Environment & Heritage outlines 20 HVAC optimisation strategies and how they can be applied to the vast majority of commercial systems, both in older and modern buildings...



[Latin America Industrial Refrigeration Equipment Market Benefits from Region Flourishing Food and Beverage Production and Processing Market](#) – Trends and forecast 2013-2019.



[Solvents & Bio Solvents Market Outlook - Global Trends, Forecast, and Opportunity Assessment \(2014-2022\)](#)



[Chlorofluorocarbon Market: Global Industry Analysis and Forecast 2015 to 2021](#)



[Getting The World Off the Chemical Treadmill: A per capita convergence framework for an ambitious phase-down of HFCs under the Montreal Protocol](#), By: Umang Jalan, Research Associate, Climate Change Programme, Centre for Science and Environment



[The Importance of Ambition in the 2016 HFC Phase-Down Agreement](#). Download the full report from EIA, [here](#)



[Update on the Illegal Trade in Ozone-Depleting Substances](#) – The Environmental Investigation Agency (EIA) briefing to the 38th meeting of the Open-Ended Working Group of Parties to the Montreal Protocol, in Vienna, Austria, from July 18-21, 2016.



[F-Gas Regulation shaking up the HVAC&R industry](#). Commissioned by the Greens in the European Parliament, the study provides qualitative and quantitative analysis of the early impacts of the EU F-Gas Regulation on the European industry and evaluates its influences on other countries and regions in designing their own policies to curb HFCs.



"[The Road to Competence in Future Green Technologies](#)", the International Special Issue 2016-2017 of Centro Studi Galileo. Read/Download [pdf version](#) | [E-book](#)



The [2016 editions of ASHRAE's major refrigerants-related standards](#) have been published as a package with 30 new refrigerants and refrigerant blends added.



[Quest for climate-friendly refrigerants finds complicated choices](#), National Institute of Standards and Technology (NIST), 17 February 2017, Summary: Researchers have just completed a multiyear study to identify the 'best' candidates for future use as air conditioning refrigerants that will have the lowest impact on the climate.



The second issue of [The Natural Voice magazine](#), entitled 'Mainstreaming Natural Refrigerants' showcases examples of installations using natural refrigerants around the world, including in the Gambia, Jordan, South Africa, China, Thailand, Tanzania and Saudi Arabia.



[Industria & Formazione, no. 2/17](#), Preview of the journal Industry & Training in refrigeration and air conditioning, technical refrigeration and air-conditioning, Centro Studi di Galileo # 406 Technological innovations in cooling and air conditioning with special focus on the F-Gas new regulations, new refrigerants, components and systems, food storage and cold sector. Vol. XLI - No. 2-2017.



Refrigeration: An increasingly strategic issue for data centres - [Cooling data centres: A major economic challenge](#) Today, data centres play a key role in many businesses as information technology is becoming an increasingly strategic factor. Cooling can present a major economic challenge for data centres. If cooling is implemented incorrectly or is inadequate, the amount of energy required to cool a data centre can equal or exceed that used to operate the equipment. Larger data centres can use a staggering amount of energy just to ensure the day-to-day running of electronic equipment. As a result, these data centres can produce a great deal of heat, which require large-scale cooling systems in order to maintain efficient and continual operation... Browse through a selection of [articles and papers](#), by [iifir](#)



[shecco](#) GUIDE to Natural Refrigerants Training in Europe shows that training is readily available. [Read on r744](#)



[40 Years of Global Environmental Assessments: A Retrospective Analysis](#), J. Jabbour and C. Flachsland. Environmental Science & Policy



FactSheet - [Hazards during the Repair and Maintenance of Refrigeration Systems on Vessels](#).



[High-performance insulation materials market](#), June 2017



[EIA Applauds Bipartisan Effort to Tackle Super Pollutants, Including HFCs](#). Environmental Investigation Agency, 8 June 2017



[The Environmental Investigation Agency \(EIA\)](#), recently launched report: [Chilling Facts VII](#), [Chilling Facts I-VI](#) reports available [here](#)



ASHRAE Releases New Edition of [Principles of Heating, Ventilating and Air Conditioning](#). - Eighth edition of textbook updated based on the 2017 ASHRAE Handbook - The textbook is ASHRAE's recommended text for HVAC instruction and presents the fundamental concepts for HVAC systems and design.



[The Australian Institute of Refrigeration, Air Conditioning and Heating outlines the Future of HVAC in a Net-Zero World](#)



[The Dirtiest Contraband in Gibraltar](#), El Pais, 8 August 2017



“[Absorption Chillers Market: Global Industry Analysis and Forecast, 2017-2025](#),”... The demand for thermally-driven chillers in multiple industrial verticals is poised to grow in the immediate future. Considering the rising demand for electrical chillers in commercial, residential as well as industrial settings, the adoption of absorption chillers will gain traction at considerable rate. By consuming lesser energy than conventional electrical chillers, absorption chillers will also garner surplus demand for not using ozone-depleting chlorofluorocarbons (CFC) for chilling purposes. Persistence Market Research's latest report delivers key insights for the future of global [absorption chillers market](#), excerpts from which highlight that by the end of 2025, more than US\$ 2 Bn worth of absorption chillers will be sold throughout the globe...



MISCELLANEOUS

Announcement!

The UN Environment, OzonAction, in collaboration with Marco Gonzalez and Stephen O. Andersen are updating and expanding the Montreal Protocol Who's Who" as part of the celebration of the 30th Anniversary of the Montreal Protocol - which was agreed as 16 September 1987.



The new website will be launched during the upcoming Meeting of the Parties to the Montreal Protocol, Montreal, Canada, 20-24 November 2017.

We are pleased to invite you to submit your nomination*, and/or nominate an 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](#)

Looking forward to receiving the 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 men and women who made important contribution to the Montreal Protocol success and ozone layer protection.

▶ Contact : [Samira Korban-de Gobert](#), UN Environnement, OzonAction

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



How will the heat pump market move towards natural refrigerants? Eric Delforge talks about the energy-efficient properties of natural refrigerants when used in heat pump applications.

[Watch on r774's YouTube channel](#)



[UN knowledge platform launches live-tracking tools to review progress towards SDGs](#), UN Environment's dynamic online platform designed for sharing contextualized data...



New *International Journal of Refrigeration* service for IIR members - As of January 2017, not only will IIR members continue to receive the hard copy of the journal but IIR membership will now also give members access to the complete archives of the *International Journal of Refrigeration (IJR)* online. Designed with IIR members in mind, this new and practical electronic subscription gives members substantial advantages:

- Immediate and permanent access to the latest research and to IJR archive
- Access the latest articles as soon as they become available online.
- Browse, search and read each one of the nearly 4,500 papers since Volume 1, Issue 1.
- Unlimited access to seminal contributions to the field of refrigeration dating back to 1978.
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- Consult the research highlights overview of articles in volumes from 2012 onwards.

To access this new service, click "[activate my e-IJR subscription now](#)" and follow the instructions.



[International Observers - New AREA membership category](#) - Due to the significant worldwide interest in European legislative developments and the increase in competence of personnel who handle new refrigerants, AREA is pleased to introduce its brand new "International Observer" membership category. This provides a fantastic opportunity for non-European RACHP installer bodies the world, to benefit from the expertise and discussions within Europe through access to AREA. Contact: info@area-eur.be



The Mobile Air Conditioning Society (MACS) Worldwide has released the [MACS Mobile A/C Diagnostics app](#) powered by Shiftmobility® for use on all mobile devices. The MACS app includes comprehensive mobile A/C and engine cooling system specifications for cars and light duty trucks from 1960-present; A library of heavy duty vehicle specifications donated by MACS member companies; access to MACS training calendar and website, archived MACS *ACTION*™ magazines and *Service Reports*, MACS mobile A/C diagnostic checklists and a MACS member supplier directory. The MACS app is available only to MACS members in good standing. Each membership will receive one free download; and additional member downloads are \$60 each annually. The MACS app can be downloaded from the Google play or iTunes store



MONTREAL PROTOCOL
WHO'S WHO

The Montreal Protocol Who's who

See the latest nominations /

Nominate Ozone Layer Protection Champion

From Your Country /Region >>

<http://www.unep.fr/ozonaction/montrealprotocolwhoswho>

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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.

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