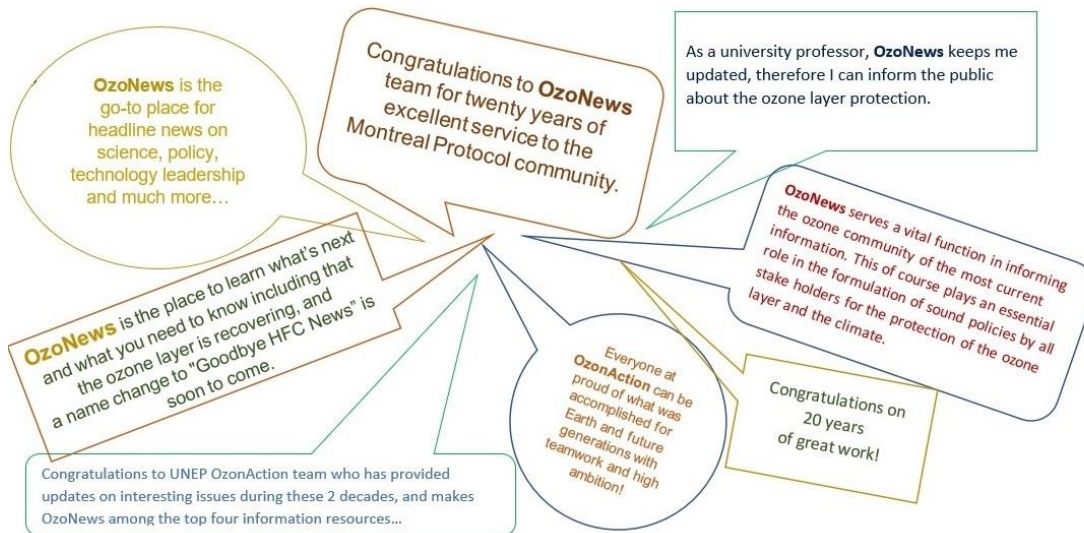


OzoNews

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

Volume XX | 30 January 2020



OzoNews team thanks all readers for their congratulation messages on **OzoNews 20th Anniversary**

Your continued interest, support and feedback throughout the years are invaluable to us.

Thank you!

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1. Kigali Amendment latest ratifications

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

Mozambique, 16 January 2020

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

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

[United Nations Treaty Collection](#)

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

One of the important requirements of the Kigali Amendment to the Montreal Protocol is that from 1st January 2019 (or two years later if required) an import and export licencing system for hydrofluorocarbons (HFCs) needs to be in place in each country that is Party to the Amendment. This applies to both Article 5 and non-Article 5 countries.



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

and export statistics are normally collected by customs officers using the international product nomenclature system - the Harmonized Commodity Description and Coding System, or Harmonized System (HS). However, until the HS is revised in 2022, all HFCs are contained in a single HS code which does not allow differentiation of the individual chemicals or of mixtures (also referred to as 'blends'). In advance of the release of the new version of the HS, there are actions which countries can take in the interim. The suggested approach is to establish additional digits in the national (domestic) HS codes to identify specific HFCs.



This factsheet explains and provides an example of how the recommendation of the World Customs Organization (WCO) on establishing additional digits in the existing 2017 national HS codes to identify specific HFCs could be implemented.

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

[Download the Factsheet >>>](#)

[UNEP, OzonAction](#)

3. FACTSHEET: Dealing with seized ODS - Options for Article 5 countries

In cases of illegal trade where the chemicals have entered the country or there are attempts to import contrary to the national controls (such as legislation on quotas and licensing systems, packaging, labelling and counterfeits), the country can be faced with a seizure of ODS or HFCs which they must deal with. National laws and the provisions of the import/export licensing system may prescribe what happens to seized ODS or HFCs.

In deciding how to deal with such seizures there are many factors that need to be taken into consideration. Customs and enforcement agencies should coordinate with the National Ozone Unit (NOU) to inform them of any seizure and to provide guidance in making decisions on what happens to the seized chemicals. The most appropriate option will naturally depend on the country-specific situation, where the ODS is seized/ confiscated and the costs involved.



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

[Download the Factsheet >>>](#)

[UNEP, OzonAction](#)



4. UNEP OzonAction Training Programme for National Ozone Officer

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



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

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

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

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



[Download the flyer >>>](#)

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

5. Substantial twentieth-century Arctic warming caused by ozone-depleting substances

The rapid warming of the Arctic, perhaps the most striking evidence of climate change, is believed to have arisen from increases in atmospheric concentrations of GHGs since the Industrial Revolution. While the dominant role of carbon dioxide is undisputed, another important set of anthropogenic GHGs was also being emitted over the second half of the twentieth century: ozone-depleting substances (ODS).

These compounds, in addition to causing the ozone hole over Antarctica, have long been recognized as powerful GHGs. However, their contribution to Arctic warming has not been quantified. We do so here by analysing ensembles of climate model integrations specifically designed for this purpose, spanning the period 1955–2005 when atmospheric concentrations of ODS increased rapidly.

We show that, when ODS are kept fixed, forced Arctic surface warming and forced sea-ice loss are only half as large as when ODS are allowed to increase. We also demonstrate that the large impact of ODS on the Arctic occurs primarily via direct radiative warming, not via ozone depletion.

Our findings reveal a substantial contribution of ODS to recent Arctic warming, and highlight the importance of the Montreal Protocol as a major climate change-mitigation treaty. [...]

Authors: L. M. Polvani, M. Previdi, M. R. England, G. Chiodo, and K. L. Smith

[Nature Climate Change, 20 January 2020](#)



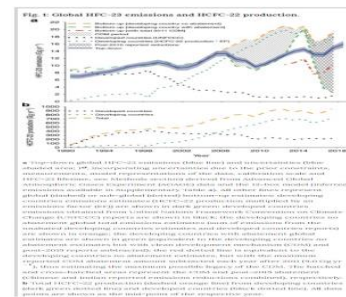
6. Increase in global emissions of HFC-23 despite near-total expected reductions

Abstract

Under the Kigali Amendment to the Montreal Protocol, new controls are being implemented to reduce emissions of HFC-23, a by-product during the manufacture of HCFC-22.

Starting in 2015, China and India, who dominate global HCFC-22 production (75% in 2017), set out ambitious programs to reduce HFC-23 emissions.

Here, we estimate that these measures should have seen global emissions drop by 87% between 2014 and 2017. Instead, atmospheric observations show that emissions have



increased and in 2018 were higher than at any point in history ($15.9 \pm 0.9 \text{ Gg yr}^{-1} \pm 0.9 \text{ Gg yr}^{-1}$).

Given the magnitude of the discrepancy between expected and observation-inferred emissions, it is likely that the reported reductions have not fully materialized or there may be substantial unreported production of HCFC-22, resulting in unaccounted-for HFC-23 by-product emissions.

The difference between reported and observation-inferred estimates suggests that an additional $\sim 309 \text{ Tg}^*$ CO_2 -equivalent emissions were added to the atmosphere between 2015 and 2017.

[*1 Tg = 1 million metric tonnes]

Authors: K. M. Stanley, D. Say, J. Mühle, C. M. Harth, P. B. Krummel, D. Young, S. J. O'Doherty, P. K. Salameh, P. G. Simmonds, R. F. Weiss, R. G. Prinn, P. J. Fraser & M. Rigby

[Nature Communications volume 11, Article number: 397, 21 January 2020](#)

7. Quantitative detection of iodine in the stratosphere

Significance

Aircraft measurements in the lower stratosphere indicate iodine is efficient at destroying ozone in the gas and particulate phases. Active iodine chemistry in the upper troposphere–lower stratosphere (UTLS) is the result of convective transport, and efficient multiphase reactions on ice and stratospheric aerosol. Our measurements provide guidance for future technological innovation, laboratory experiments, field observations, and model developments. Global models that simulate the recovery of the ozone layer do not currently consider iodine chemistry. Marine emissions of iodine have increased due to increasing surface ozone in recent decades. This human-induced and increasing iodine source from oceans propagates to the UTLS. Our results posit a possible link between surface air quality, stratospheric ozone loss, and radiative forcing in the UTLS.

Abstract

Oceanic emissions of iodine destroy ozone, modify oxidative capacity, and can form new particles in the troposphere. However, the impact of iodine in the stratosphere is highly uncertain due to the lack of previous quantitative measurements. Here, we report quantitative measurements of iodine monoxide radicals and particulate iodine ($I_{y,\text{part}}$) from aircraft in the stratosphere. These measurements support that 0.77 ± 0.10 parts per trillion by volume (pptv) total inorganic iodine (I_y) is injected to the stratosphere. These high I_y amounts are indicative of active iodine recycling on ice in the upper troposphere (UT), support the upper end of recent I_y estimates (0 to 0.8 pptv) by the World Meteorological Organization, and are incompatible with zero stratospheric iodine injection. Gas-phase iodine ($I_{y,\text{gas}}$) in the UT (0.67 ± 0.09 pptv) converts to $I_{y,\text{part}}$ sharply near the tropopause.

In the stratosphere, IO radicals remain detectable (0.06 ± 0.03 pptv), indicating persistent $I_{y,\text{part}}$ recycling back to $I_{y,\text{gas}}$ as a result of active multiphase chemistry. At the observed levels, iodine is responsible for 32% of the halogen-induced ozone loss (bromine 40%,



chlorine 28%), due primarily to previously unconsidered heterogeneous chemistry. Anthropogenic (pollution) ozone has increased iodine emissions since preindustrial times (ca. factor of 3 since 1950) and could be partly responsible for the continued decrease of ozone in the lower stratosphere. Increasing iodine emissions have implications for ozone radiative forcing and possibly new particle formation near the tropopause.

Authors: Theodore K. Koenig, Sunil Baidar, Pedro Campuzano-Jost, Carlos A. Cuevas, Barbara Dix, Rafael P. Fernandez, Hongyu Guo, Samuel R. Hall, Douglas Kinnison, Benjamin A. Nault, Kirk Ullmann, Jose L. Jimenez, Alfonso Saiz-Lopez, and Rainer Volkamer

[Proceedings of the National Academy of Sciences \(PNAS\), 28 January 2020](#)

AFRICA

8. Botswana introduces fees for permits of ODS

Botswana introduced payment fees for permits of ozone depleting substances (ODS), which, according to authorities, will have immediate effect on the import and export of the ODS.

“These gases destroy the ozone layer that primarily protects the Earth from the harmful ultraviolet rays from the sun that are hazardous to people’s lives and property,” said Onalenna Mokgachane, spokesperson for Ministry of Environment, Natural Resources Conservation and Tourism.

Mokgachane added that the fees will be in accordance with the Ozone Depleting Substances Regulations of 2014, which the country established and gazetted on Nov. 28, 2014 under the National Meteorological Services Act 2014.

The ODS are gases that are primarily used as coolants, such as hydrochlorofluorocarbons used in refrigeration and air-conditioning, while others are used as propellants, fumigants and fire extinguishers.

Most countries have adopted the Vienna Convention for the Protection of the Ozone layer signed in 1985 and the Montreal Protocol on Substances That Deplete the Ozone Layer in 1987, and Botswana entered into both treaties in 1992.

Under the protocols, Botswana is required to control, monitor, report on the consumption of the ODS, promote friendlier alternatives as well as raise awareness in the country to ensure compliance to the protocols.

[InfoSurHoy, 24 January 2020, By: Denis Bedoya](#)



ASIA PACIFIC

9. Fiji urged to adopt and ratify Kigali Amendment



PIDF (Pacific Islands Development Forum) highlighted its support for the adoption and ratification of the amendment noting that there are viable and cost-effective industrial alternatives to Hydrofluorocarbons.

Fiji needs to continue the momentum it set during its 23rd Conference of the Parties (COP23) leadership in Bonn, Germany, a parliamentary committee heard yesterday [16 January 2020]. It can do so by adopting and ratifying the Kigali amendment to the Montreal Protocol on Substances that deplete the ozone layer.

The amendment, which came into force on January 1, 2019 aims to achieve more than 80 per cent worldwide reduction in the manufacture and consumption of Hydrofluorocarbons (HFCs) by 2047. [...]

Business owners and consumers should also be incentivised to speed up the HFC phase-out process. The Government could also consider tax breaks as an incentive. [...]

[Fiji Sun, 17 January 2020, By: Fonua Talei](#)



10. New Zealand - Methyl bromide update January 2020

Methyl bromide 2020 deadline

Recapture or destruction of methyl bromide emissions at the end of fumigation will be compulsory from October 2020. Find out what it means for you and what we're doing as the deadline approaches.

What is methyl bromide?

Methyl bromide is a highly effective fumigant used for treating primary products for export – as well as imported goods – to control quarantine pests. It is a colourless, odourless, non-flammable gas that:

- is toxic to humans
- can damage the Earth's ozone layer.

New Zealand is a signatory to the Montreal Protocol aimed at controlling ozone-depleting substances. We're working with industry on finding an alternative to methyl bromide and ways to manage and reduce emissions by October 2020.

Current uses

Many importing countries require products like logs and timber to be treated (for example, by fumigation or heat treatment) to control quarantine pests. Fumigation of forest products for export accounts for about 94% of methyl bromide use in New Zealand. Fumigation with methyl bromide is the main treatment option for above-deck log exports to China, and is the only feasible option for log exports to India.

Fumigation of other export goods and imported goods to manage biosecurity risks account for the remaining 6% of use.

New requirements and potential trade effects

From October 2020, all methyl bromide fumigations must use recapture technology.

The export of logs to markets like China and India could be reduced significantly without an efficient recapture process or a substitute treatment available that is accepted by trading partners.

What we're doing

MPI is discussing various phytosanitary options with our trading partners. Research into effective alternative phytosanitary treatments such as ethanedinitrile (EDN) to replace methyl bromide has been completed. MPI has submitted the research results to key trading partners for assessment and negotiation.

The Stakeholders in Methyl Bromide Reduction Inc. (STIMBR) and the chemical company Draslovka have submitted an application to the Environmental Protection Authority (EPA) to register EDN for use in New Zealand.

[New Zealand Ministry for Primary Industries \(MPI\), January 2020](#)

NORTH AMERICA

11. Berkeley plans to phase out “ozone-depleting” refrigerant over next ten years

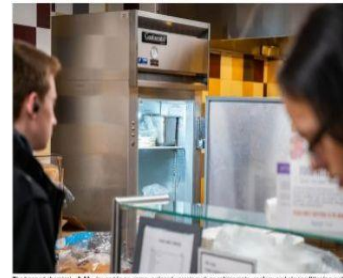
The college plans to stop using ozone-depleting refrigerant chemicals over the next 10 years as part of a nationwide phase-out of the substance that started in 2010, according to college officials.

The college will replace its current refrigerant chemical gas, R-22, with one that is more environmentally friendly, Director of Facilities Management Joseph Knoll told The Beacon in an interview.

This phase-out is part of The Montreal Protocol on Substances that Deplete the Ozone Layer, an international treaty signed in 1987 and designed to limit the use of ozone-depleting chemicals, including refrigerants. In 2010, the Environmental Protection Agency banned the production, use, and importation of R-22—also known as Freon—refrigerants, except for continuing service needs of existing equipment. On Jan. 1, they instituted a ban on the remaining production of R-22s. Any equipment that still uses R-22 will have to use stockpiled or recycled quantities that are already in the U.S.

R-22 is used in on-campus closed vessels such as refrigerants, coolers, and air-conditioning systems, according to Catherine Liebowitz, campus sustainability manager. [...]

Knoll estimated the college will phase out all R-22 on campus over the next 10 years. He added that the cooling systems themselves—located on college roofs, in basements, and in mechanical rooms—will eventually need replacement, allowing for a simpler switch of the



The banned chemical—R-22—is used in on-campus closed vessels such as refrigerants, coolers, and air-conditioning systems. Photo credit: Charles Wang

refrigerants that fuel them. He said this is a long-term process based on the condition and age of the equipment. [...]

Liebowitz added that the college recently implemented new chillers—cooling machines fueled by refrigerants—on the roof of the 216 Tremont building. She said these chillers require less electricity and use the current chemicals in a more energy-efficient way. In combination with the refrigerant swap, she said these changes will limit the negative environmental effects of the entire cooling system.

“With all of these different things, it adds up to just being more environmentally sound,” she said.

[The Berkeley Beacon, 28 January 2020, By Dana Gerber, Assistant News Enterprise Editor](#)

WEST ASIA

12. Egypt ozone protection program: A review of the activities

"البيئة": استعراض أنشطة البرنامج المصري لحماية الأوزون بمشاركة ممثلي الوزارات

صرحت الدكتورة نهلة الشاذلي، مسؤولة الإعلام والتوعية بوحدة الأوزون بوزارة البيئة، أنه شارك في اجتماع اللجنة الدائمة للأوزون، الذي عقد أمس الأربعاء، عدد كبير من المسؤولين على رأسهم ممثلو الوزارات والجهات الحكومية ومنظمات المجتمع المدني المعنية.



وأوضحت الشاذلي، في تصريح خاص لـ"البوابة نيوز"، اليوم الخميس، أن الاجتماع تناول بحث عدد من الملفات الحيوية بوحدة الأوزون، على رأسها مراجعة الآليات الخاصة بإحكام الرقابة على المواد المستنفذة للأوزون وفقا للالتزامات المصرية تجاه بروتوكول مونتريال وتعديلاته المختلفة، بالإضافة إلى استعراض الأنشطة الخاصة بالبرنامج المصري لحماية طبقة الأوزون والتي تم تنفيذها خلال الثلاثة أشهر الماضية.

وأشارت الشاذلي إلى أنه قد اطلع المشاركون باللجنة من الجهات المسؤولة المختلفة على أهم الأنشطة التي تم تنفيذها بواسطة وحدة الأوزون، مشيرة إلى أنه ناقش المسؤولون أثناء انعقاد اللجنة الدورية لوحدة الأوزون آلية استيراد غاز التبريد R22 خلال الفترة المقبلة، بالإضافة إلى الاطلاع على الطلبات الواردة من الشركات العالمية للثلاجات لاستيراد غاز التبريد R22، مشيرة إلى أنه تم صياغة القرارات ومناقشتها ودرجها ضمن محضر الاجتماع والتوقيع عليه من قبل الأعضاء للاجتماع تمهيدا لاعتماد المحضر والقرارات من قبل رئيس اللجنة.

[البوابة نيوز، 23 يناير 2020](#)

EUROPE & CENTRAL ASIA

13. EC fraud office makes illegal F-gas imports a priority

The fight against illegal imports of HFC refrigerants into the EU is said to have been made an operational priority for OLAF, the European Commission's anti-fraud office.



At a meeting in Brussels last week, OLAF is reported to have been attended by representatives from EU industry, DG TaxUD, which develops and carries out the Commission's policies on customer and taxation, and the Commission's environmental arm DG Clima.

Recognising that customs and environmental authorities as well as industry need to work together to counter cross-border fraud, OLAF maintains that the objective of the meeting was to listen, exchange information and share experiences.

OLAF says that the fight against the illegal imports of HFCs is one of its key operational priorities and "fully matches" the Commission's intention to make Europe the first climate neutral continent by 2050 under its European Green Deal.

"Such illegal activities harm the environment, generate illicit profits and losses of tax revenues and create unfair competition for legitimate business," OLAF states.

Industry and environmental groups have previously reported that the illegal trade of HFC refrigerants in contravention of the European F-gas regulations may account for as much as 20% of the legally allowable quota.

Although previously described as "small" and "insignificant" by the European Commission's environmental arm, DG Clima, the illegal trade has had a negative effect on EC tax revenues. It has been estimated that illegal imports through Greece alone – one of the countries at the forefront of the illegal trade – cost the Greek exchequer over €20m in lost VAT and taxes in 2018.

[CoolingPost, 26 January 2020](#)

14. Kyrgyzstan Parliament approved ratification of the Montreal Protocol amendments

The parliamentary committee on agrarian policy, water resources and regional development of Kyrgyzstan on Monday, 27 January considered and approved ratification of the amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer, which was adopted in the city of Kigali on October 15, 2016 ...



[AKIPRESS, 28 January 2020](#)

See also: 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](#)

15. Armenia to forbid production of substances that contribute to the destruction of the ozone layer

In Armenia, it will be prohibited to produce substances that contribute to the destruction of the ozone layer. At its January 24 sitting, the RA National Assembly amended the law "On Substances that Deplete the Ozone Layer" and related laws.



According to Deputy Minister of the Environment Irina Kaplanyan, the import of ozone-depleting materials from those countries will be banned who have not signed the relevant Montreal and Vienna Conventions. The export of such materials will also be banned in these countries, and the transit of ozone-depleting substances through the territory of Armenia will also be banned. "This legislative package, in fact, regulates the restrictions on the production, import, export and transit of ozone-depleting substances," Kaplanyan explained, adding that the package provides for liability for failure to comply with the requirements of the package of laws.

The Deputy Minister recalled that on March 27 last year, Armenia ratified the amended agreement to the Montreal Protocol on Substances that Deplete the Ozone Layer. The agreement was signed in the capital of Rwanda, Kigali, on October 15, 2016, and the package submitted is fully consistent with the specified international documents.

It should be noted that in March last year, the deputy minister noted that since 1990, Armenia has chosen the path to maintain the ozone layer and reduce emissions of harmful substances into the atmosphere. This path is not only due to the high-mountainous nature of the republic, which leads to increased ultraviolet rays, but also the global challenges that mankind has faced in connection with climate change. In 2010, the republic fully complied with its obligations under the first phase of the program, under which emissions of fluorine and chlorine hydrocarbons were significantly reduced. At present, Irina Kaplanyan continued, the second stage of the program continues, under which it is planned to completely abandon the use of hydrofluorocarbons.

Moreover, the second phase of the program is being implemented at a faster pace. Irina Kaplanyan emphasized that the agreement signed by 197 countries of the world in Kigali is the fifth in a row under the Montreal Protocol. It is envisaged that as a result of its application in the world, emissions of 105 million tons of harmful substances will be reduced. It is planned that before 2100 the air temperature in the world will drop by 0.4%. For Armenia, which is a developing state, the terms for implementing the provisions of the document are also set: by 2014, the republic should reduce emissions by 10%, by 2035 - by 30%, by 2040 - by 50% and by 2045 - by 80%.

Recall that in the capital of Rwanda, Kigali, representatives of 197 states that signed the Montreal Protocol on Substances that Deplete the Ozone Layer agreed to limit the production and emissions of greenhouse gases, in particular hydrofluorocarbons. Used mainly in refrigeration equipment and air conditioners, these gases are much more dangerous for the ozone layer of the earth than the same carbon dioxide. The first in 2019 to introduce restrictions is the United States - the second largest state in the world in terms of emissions of pollutants into the atmosphere. From 2024, China, the leader in the pollution of the planet, will begin to take measures. Countries hope they can reduce global warming by half a degree Celsius.

The deal, which involves the two largest economies in the world - the United States and China, divides the countries into three groups with different terms, during which they should reduce the use of hydrofluorocarbons, the greenhouse effect of which is 10 thousand times stronger than that of carbon dioxide. Under the agreement, developed countries, including

a large part of Europe and the United States, commit themselves to gradually reduce the use of hydrofluorocarbons, starting from a 10 percent decline by 2019, and by 85% by 2036. Two more groups of developed countries will stop increasing the use of hydrofluorocarbons by 2024 and 2028, and then will gradually reduce it. The deal, which was joined by 197 countries, crowned a series of measures aimed at combating climate change. In early October, the Paris Climate Agreement, concluded in 2015, crossed the important threshold of ratification thanks to support from India, Canada and the European Parliament.

[ArmlInfo, 24 January 2020, By: Alexandr Avanesov](#)

16. QinetiQ to build ozone-monitoring satellite for European Space Agency

British aerospace company QinetiQ received a 75 million euro (\$82.6 million) contract from the European Space Agency to build a small satellite for ozone measurements.

QinetiQ will build Altius, the Atmospheric Limb Tracker for Investigation of the Upcoming Stratosphere, at its [new cleanroom in Kruiabeke, Belgium](#), the company said Jan. 27.

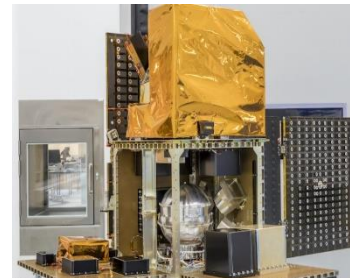
The satellite is scheduled to launch in 2023 from French Guiana, where European launch provider Arianespace conducts its missions. QinetiQ spokesperson Marta Lebron said a rocket has not yet been decided on for Altius, which is expected to weigh around 270 kilograms.

Altius was proposed by the Royal Belgian Institute of Space Aeronomy, and is mostly funded by Belgium, according to the European Space Agency.

QinetiQ will lead a team of companies from Belgium, Canada, Luxembourg and Romania to build the Altius satellite. Oudenaarde, Belgium-based OIP Sensor Systems is the prime contractor for the satellite instrument.

Altius will monitor the distribution and evolution of stratospheric ozone in the Earth's atmosphere using an instrument capable of ultraviolet, visible and near-infrared observations. [...]

[Space News, 27 January 2020, By: Caleb Henry](#)



Altius is expected to launch in 2023. Photo shows an engineering model of the P200 platform that QinetiQ will use to build the ESA satellite. Credit: QinetiQ

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

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

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

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

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

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

Eligible enforcement actions include the detection of an illegal shipment and the subsequent seizure, detention or sending back of the disallowed goods, as well as successful iPIC consultation preventing the issuance of export / import licenses for illegal or unwanted shipments.

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

Geographical scope and time period

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

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

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

[Learn more >>>](#)

FEATURED



OZONE SECRETARIAT



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



[THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL](#)

- [Documents and information note for the 84th meeting of the Executive Committee](#), Montreal, Canada, 16-20 December 2019
- [Executive Committee Primer – 2019](#) - An introduction to the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol
- [Report of the 83rd meeting of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol](#), Montreal, Canada, 27-31 May 2019
- [83rd meeting of the Executive Committee](#)
- [82nd meeting of the Executive Committee](#)

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[OZONACTION](#)



OzoNews is Turning 20!

The OzoNews 15 January 2020 issue marks 20 years of continued service of providing a regular and concise news update directly to your screen.

In January 2000, OzonAction launched its e-news service: 'OzoNews'. Twice every month OzoNews has been distributed electronically all around the world, bringing our

readers regular information and updates on implementation of the Montreal Protocol and ozone and climate protection, Science and technological advances, News stories, Montreal Protocol and Multilateral Fund updates, OzonAction and other Implementing Agencies meetings and activities, Upcoming events, and much much more ...

In January this year, after almost 600 issues of OzoNews, and thousands of articles from around the globe, OzonAction is delighted to bring you

The OzoNews 20th anniversary edition

On this occasion, OzonAction is pleased to present you with a new template, and a brief commemorative [video](#). Moreover, progressively we are making available the [early issues of OzoNews](#), starting from 2000.

The recent survey found OzoNews among the top four information resources, thanks to your continued interest, invaluable support and feedback throughout the years.

Contact: samira.degobert@un.org



OzonAction Factsheet: Article 7 Data Reporting on HFCs - When Countries Need to Start Reporting

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

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

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

[Download the Factsheet](#)

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



HS Codes for HFCs - Advice for countries in advance of the 2022 HS code update

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

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

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

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

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

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

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

[Download the publication](#)

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



Update on new refrigerants designations and safety classifications - factsheet

The purpose of this fact sheet is to provide an update on ASHRAE standards for refrigerants and to introduce the new refrigerants that have been awarded an «R» number over the last few years and introduced into the international market.

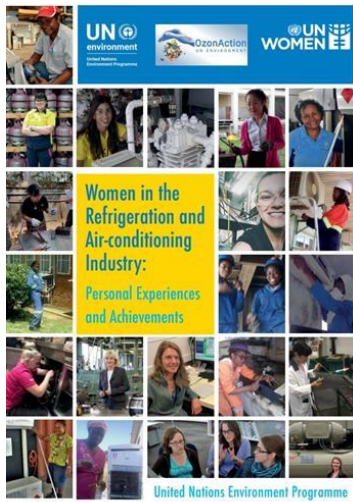
The United Nations Environment Programme (UNEP), represented by the OzonAction-Law Division, and ASHRAE have a Memorandum of Understanding to establish technical cooperation and mutual coordination toward providing professional technical services to the refrigeration and air-conditioning stakeholders (governmental, private, and public). The organizations work to ensure that up-to-date related technical information and standards are properly introduced and promoted.

Download the [Factsheet](#)

Contact:

[W. Stephen Comstock](#), Manager of Business Development EMEA, ASHRAE

[Ayman Eltalouny](#), Coordinator International Partnerships , UN Environment OzonAction

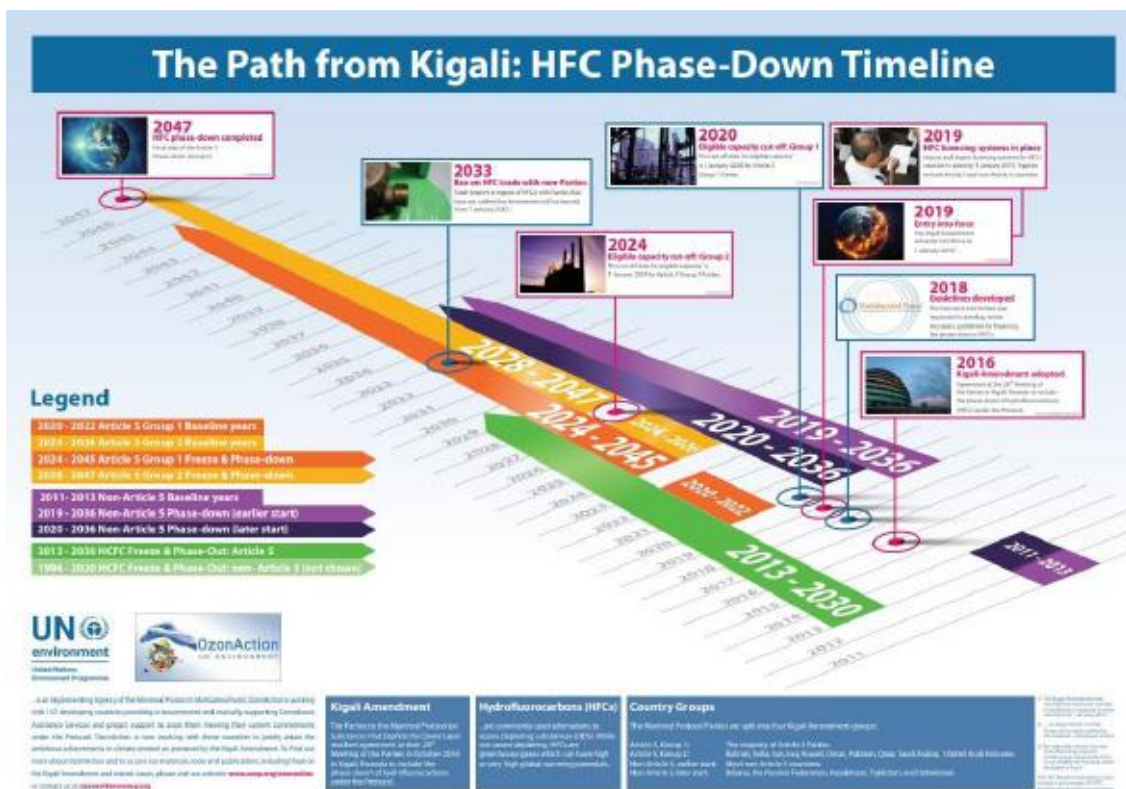


Read/Download

[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.

[Download the publication](#)



The Path from Kigali: HFC Phase-Down Timeline

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



Good Servicing: Flammable Refrigerants Quick Guide

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

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

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



Refrigerant Identifier Video Series

Guidance on how to identify refrigerants using a refrigerant identifier.

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

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

It is intended for use by Montreal Protocol National Ozone Officers, Customs and Enforcement Officers as well as technicians involved in the servicing and maintenance of refrigeration and air conditioning systems. The application features 10 short instructional videos on the following topics:

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

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



GWP-ODP Calculator Smartphone Application

- 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 [Apple IOS store](#) and [Google PlayStore](#). Search for “GWP ODP CALC” in the Playstore to install! **Download it Now!**

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



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

OzonAction Smartphone Application WhatGas? Available for [free](#) in the Google Play and Apple IOS Store Scan the QR code or search for “UNEP”, “OzonAction” or “WhatGas?”



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

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

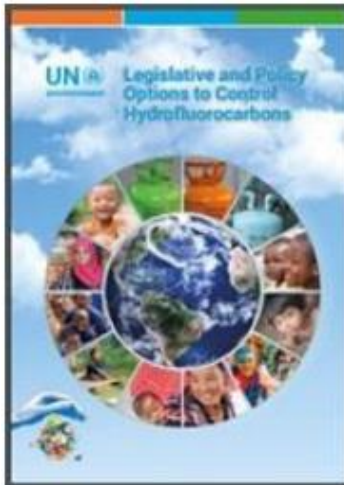
This application, consisting of short instructional videos on techniques, safety and best practice, serves as a complementary training tool for refrigeration and air-conditioning (RAC) sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training.

New videos on flammable refrigerants just added!

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

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

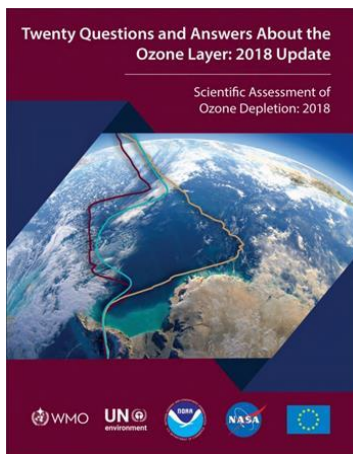
PUBLICATIONS



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

In order to follow and facilitate the HFC phase-down schedules contained in the Kigali Amendment, the Parties, including both developed and developing countries, will have to implement certain measures. This booklet contains a recommended set of legislative and policy options which the developing (Article 5) countries may wish to consider for implementation. It is intended to be a guide/tool for countries.

READING



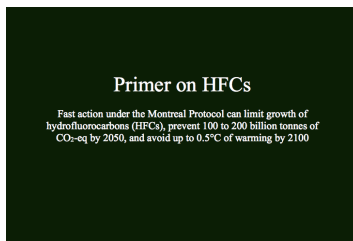
[Twenty questions and answers about the ozone layer: 2018 update](#), is a component of the Scientific Assessment of Ozone Depletion: 2018 report. The report is prepared quadrennially by the Scientific Assessment Panel (SAP) of the Montreal Protocol on Substances that Deplete the Ozone Layer.

Lead Author: Ross J. Salawitch

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

Read / Download:

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



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

Fast action under the Montreal Protocol can limit growth of hydrofluorocarbons (HFCs), prevent 100 to 200 billion tonnes of CO₂-eq by 2050, and avoid up to 0.5°C of warming by 2100.

Lead authors:

Durwood Zaelke, Nathan Borgford-Parnell, and Stephen O. Andersen.

Contributing authors:

*Kristin Campbell, Xiaopu Sun, Dennis Clare, Claire Phillips, Stela Herschmann, Yuzhe Peng
Ling, Alex Milgroom, and Nancy J. Sherman.*

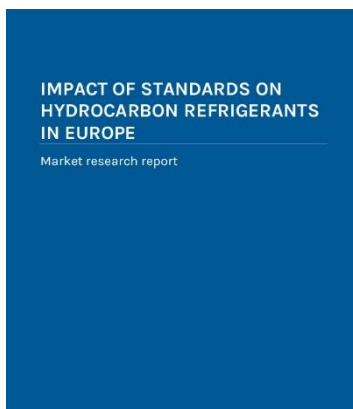


The [IIR International Dictionary of Refrigeration](#) Available in 11 languages, the complete version of the International Institute of Refrigeration (IIR) International Dictionary of Refrigeration is now freely accessible online. The IIR International Dictionary of Refrigeration offers researchers, industrialist or administrations the practical resources required to produce content related to refrigeration technologies in multiple languages.

This online tool allows you to find definitions, in English and French, of scientific and technical terms, as well as identify terms in the language of your choice and find corresponding translations in the 10 other languages.

The dictionary provides term searches in Arabic, Chinese, Dutch, English, French, German, Italian, Japanese, Norwegian, Russian and Spanish.

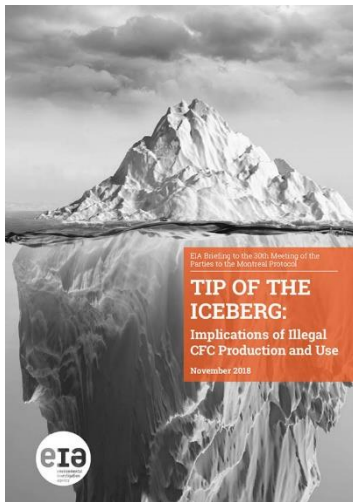
Access the International Dictionary of Refrigeration on the [IIR website](#)



[Impact of Standards on Hydrocarbon Refrigerants in Europe – Market research report.](#)

The market research report was realised for the EU-funded [LIFE FRONT](#) project. Amongst the main result of the market research:

- Current charge limits set in standards both restrict and obstruct the development of hydrocarbon technology
- Over 50% survey respondents already work with hydrocarbons to some extent
- Most of those planning to start working with hydrocarbons in the future will do that in 2019-2020 timeframe - revision of standards could have a major impact on the scale of this shift
- Large proportion of respondents indicated they manufacture equipment using multiple refrigeration circuits - allowing higher hydrocarbon charge limits per single refrigeration circuit would have a profound impact on cost and availability of larger units.



[Tip of the Iceberg: Implications of Illegal CFC Production and Use.](#)

The Environmental Investigation Agency (EIA) recently released report urges Parties to the Montreal Protocol to address a number of remaining unanswered questions, in particular the absence of comprehensive data regarding the size of current banks of CFC-11 in PU foam and other products or equipment.



[Cold Hard Facts 3 - Review of the Refrigeration and Air Conditioning Industry in Australia](#)

The refrigeration and air conditioning industry is the largest user of synthetic greenhouse gases and ozone depleting substances in Australia. Cold Hard Facts 3 provides an economic and technological assessment of the refrigeration and air conditioning industry in Australia in 2016. The report includes an analysis of the size and economic value of the industry, the equipment and refrigerant gas bank, trends in gas imports and equipment, and direct and indirect emissions in this sector. [...] This study provides a broad view of the composition, size and value of the industry, and projections for its future. This will assist industry and policy makers with management of ozone depleting substances as they are phased out, and synthetic greenhouse gases, including hydrofluorocarbons (HFCs) which are being phased down from January 2018.



[Ozone-depleting substances 2019 Aggregated data reported by companies on the import, export, production, destruction, feedstock and process agent use of ozone-depleting substances in the European Union, 2006-2018](#)

The 2019 edition of the European Environment Agency (EEA) report on ODS confirms that the EU has already achieved its goals on the phase-out of such substances under the Montreal Protocol. In particular, the report shows that in 2018, the consumption of ODS (an aggregated parameter that integrates imports, exports, production and destruction of ODS, except those for feedstock use) in the EU was negative (-1 505 metric tonnes), which means that more ODS were destroyed or exported than produced or imported. This was the case since 2010 with the exception of 2012. These negative values are the result of the phase-out according to Regulation (EC) No 1005/2009, which, in many aspects, goes further than the Montreal Protocol, in combination with rather high destruction rates and decreasing stocks. Companies in the EU have been consuming relatively small amounts of ODS under the Montreal Protocol.

Benefits of Energy Efficient and Low-Global Warming Potential Refrigerant Cooling Equipment

Authors:
Nihar Shah, Max Wei, Virginie Letschert, Amol Phadke

Energy Analysis and Environmental Impacts Division
Lawrence Berkeley National Laboratory

August/2019



This work was supported by the U.S. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy under Lawrence Berkeley National Laboratory Contract No. DE-AC02-08OR21400.



The Cooling Imperative

Forecasting the size and source of future cooling demand

A report by The Economist Intelligence Unit



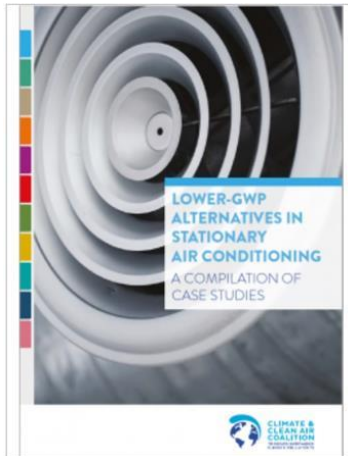
Sponsored by **KIGALI**

[Benefits of Energy Efficient and Low-Global Warming Potential Refrigerant Cooling Equipment](#)

Authors: Nihar Shah, Max Wei, Virginie Letschert, Amol Phadke.

Energy Analysis and Environmental Impacts Division
Lawrence Berkeley National Laboratory
August/2019

The Economist Intelligence Unit (EIU) newly launched report [The Cooling Imperative: Forecasting the size and source of future cooling demand](#) forecasts the size and source of future cooling demand out to 2030. Commissioned by the Kigali Cooling Efficiency Program (K-CEP), this report quantifies the cooling market in unit sales and financially and maps out what the transition to more efficient, climate-friendly cooling could look like.



[Lower-GWP Alternatives in Stationary Air Conditioning: A Compilation of Case Studies](#)

-The case studies in this booklet discuss several applications in the stationary air conditioning sector. The applications include chillers of natural refrigerants and hydrofluoroolefins (HFOs) as well as split-units which use hydrocarbons (HCs) as the refrigerant. The technologies presented in these case studies are only some examples of the many available options for zero and lower GWP substances. The examples take into account design criteria such as system performance, environmental impact and cost. All these refrigerants still have many challenges that should be considered in the design, for example their flammability, toxicity, lower efficiency in some cases, and cost. Balancing these challenges using a consistent and comprehensive methodology across all refrigerants and system types is essential in assessing alternatives...

[Climate and Clean Air Coalition \(CCAC\), 2019](#)



Latest issue of Centro Studi Galileo magazine, [Industria & Formazione, n. 10 - 2020](#) (in Italian language).



[The nationally determined contributions \(NDC\) support Facility for efficient, climate-friendly cooling](#). Launched in January 2020, the NDC Support Facility for Efficient, Climate-Friendly Cooling (NDC Support Facility) provides funding and guidance to organizations to support governments that want to integrate cooling solutions into the next round of their country's Nationally Determined Contributions (NDCs), which are expected to culminate at the 2020 UNFCCC climate negotiations (COP26) in Glasgow.

K-CEP hosted an information webinar on January 28th providing an overview of the program. Check out the [webinar recording](#) and [presentation slides](#).

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, OzonAction

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



New International Journal of Refrigeration service for IIR members

Access the complete archives of the International Journal of Refrigeration (IJR) online. Designed with IIR members in mind, this new and practical electronic subscription gives members substantial advantages:

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- See which papers, published in Elsevier or elsewhere, have cited any selected article.
- Consult the research highlights overview of articles in volumes from 2012 onwards.

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

International Observers - New AREA membership category



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

Contact: info@area-eur.be



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

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

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

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

Prepared by: Samira Korban-de Gobert, OzonAction
Reviewed by: Ezra Clark, OzonAction

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