

[View this email in your browser](#)



# OzoNews

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

Volume XX | 15 February 2020

## In this issue:

1. Kigali Amendment latest ratifications
2. The OzonAction new iPIC platform - The Informal Prior informed consent system (iPIC) has been completely overhauled and updated
3. Arctic warming linked to little-studied GHGs
4. Renewed call to ban disposable cylinders
5. Japan launches Fluorocarbons Initiative, contributing to global effort to solve the climate crisis
6. Primacy of Pakistan Customs' striking seizures and timely-interventions
7. Most industry stakeholders support HFC reduction bill
8. Fight against illegal imports of refrigerant gases into the EU
9. 12.5 tonnes of illegally imported refrigerant gases seized with OLAF's help

## GLOBAL

### 1. Kigali Amendment latest ratifications

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

**Lebanon, 5 February 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. The OzonAction new *iPIC* platform - The Informal Prior informed consent system (iPIC) has been completely overhauled and updated

*OzonAction is delighted to release the latest updated and streamlined version of the online Informal Prior-Informed Consent (iPIC) platform. Responding to comments and feedback we have changed how the system looks and operates.*

iPIC is a voluntary and informal mechanism of information exchange on intended trade between countries in ozone depleting substances (ODS) and hydrofluorocarbons (HFCs), mixtures containing these as well as products and equipment. It enables countries to share details of eligible importers and exporters with other member countries through a secure online platform. iPIC has become a global voluntary initiative used by more than 100 like-minded states who wish to strengthen the implementation of their national licensing system for ODS and HFCs.

iPIC has helped to clarify the status of many hundreds of suspicious or uncertain shipments since its inception and has been responsible for preventing hundreds of illegal, unauthorised and 'unwanted' shipments. iPIC has also facilitated the legal trade and prevented illegal or unwanted trade in thousands of metric tonnes of ODS including HCFCs, CFCs halons, and HBFCs as well as trade in HFCs and equipment.

The iPIC platform has been re-designed and improved, responding to comments and suggestions from regular users:

- Now includes HFCs and HFC mixtures
- Streamlined navigation and operation with an improved interface
- Simple and straightforward data entry

**UN environment programme** **The new *iPIC* platform** **OzonAction**  
The updated Informal Prior Informed Consent platform can assist you in Montreal Protocol implementation

**iPIC has had a complete makeover!**

- ✓ Now includes HFCs and HFC mixtures
- ✓ The new iPIC platform is much easier to use and navigate
- ✓ Improved interface, graphical displays and streamlined operation
- ✓ Straightforward data entry
- ✓ A new secure system of communication with trade partners
- ✓ Password-protected access with improved security for your confidence
- ✓ All countries can actively and effectively engage in the iPIC process
- ✓ An effective means to prevent illegal and unwanted trade in ODS and HFCs

Are you :  
An active iPIC user?  
A new national Ozone Officer?  
A member who does not actively use the system?  
A non-member?  
Interested to know more?

Then the new iPIC platform is for you!  
See more details overleaf...

**iPIC ONLINE**

- A new secure system of communication with trade partners
- Encrypted password-protected access with improved security
- Graphical display of main data (individual and global)

OzonAction encourages countries to proactively use the iPIC mechanism to assist in their efforts in Montreal Protocol implementation. Many countries include the use of iPIC as an element in their Institutional Strengthening projects. All countries have been invited by the Montreal Protocol Meeting of Parties to consider participation in iPIC as a means to improve information about their potential imports of controlled substances with the aim of reducing the difference between reports of imports and exports of ODS and helping to identify illegal trade\*.

See the [iPIC flyer](#) for more details - Visit the [iPIC website](#) to familiarise yourselves with the new features and functionalities. *Automatically re-set your password if required.*

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

\* Decision XXIV/12

[UNEP, OzonAction, February 2020](#)

### 3. Arctic warming linked to little-studied GHGs

A recent study by researchers at Columbia University has found that ozone depleting substances (ODS) -long-lived artificial halogen compounds, such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), responsible for the hole in the earth's stratospheric ozone - caused about a third of all global warming from 1955 to 2005, and half of Arctic warming and sea ice loss during that period. They thus acted as a strong supplement to carbon dioxide, the most pervasive greenhouse gas (GHG); their effects have since started to fade, as they have slowly dissolved and are also no longer produced following the Montreal Protocol of 1987.



Icebergs discharged from Greenland's Jakobshavn Glacier. Photo: Kevin Krajick/Columbia University

A 1985 research paper was the first to report the ozone hole over Antarctica and that it was caused by ODSs. Although the ozone-destroying effects of these substances are now widely understood, there has been little research into their broader climate impacts prior to this study.

Ozone-depleting substances were developed in the 1920s and 1930s and were used as refrigerants, solvents and propellants. Being entirely manmade, ODSs did not exist in the atmosphere before. Atmospheric concentrations of most ODSs peaked in the late 20th century and have been declining since. However, the new study finds that for at least 50 years the climate impacts of ODSs were extensive.

Because the Arctic is losing ice at a worrying pace, the Columbia researchers wanted to understand why the area is warming much faster than other regions. The team used climate models of global climate change to understand the effects of ODSs on Arctic climate, one with ODSs and the other without, both developed at the National Centre for Atmospheric Research (NCAR) of the United States.

With ODSs factored in, Arctic temperatures rose 1.59 °C. With ODSs excluded, the warming was only half as much, by 0.82 °C. Comparatively, the model indicated that global temperatures increased 0.59 °C with ODSs and 0.39 °C without. The researchers concluded that ODS greatly exacerbated Arctic warming for half a century, though the exact mechanism for why it is affected so disproportionately is not yet understood.

The results highlight the importance of the Montreal Protocol, which has been signed by nearly 200 countries, say the authors. “Climate mitigation is in action as we speak because these substances are decreasing in the atmosphere, thanks to the Montreal Protocol,” said Lorenzo Polvani, lead author of the study. “In the coming decades, they will contribute less and less to global warming.”

[Frontline, 14 February 2020, By: R. Ramachandran](#)

## AFRICA

### 4. Renewed call to ban disposable cylinders

Despite various heating, ventilation, air-conditioning and refrigeration (HVAC-R) industry participants contesting the banning of disposable gas cylinders in South Africa for years, there is no indication of a decision on the matter being reached.

South African Refrigeration and Air-Conditioning Contractors Association (Saracca) director Barney Richardson bemoans the availability of disposable cylinders in South Africa, stating that it is “a big problem”.

“We need to follow the example of many developed economies in this regard and phase out the use of disposable cylinders in SA soonest,” adds South African Institute of Refrigeration and Air-Conditioning (Sairac) president Marius La Grange, claiming that the increased pressure on all industries to be more conscious of their contributions to climate change makes it an urgent matter.

Disposable cylinders are low-cost, specially manufactured single-use containers made of thin sheet metal and are not certified for reuse. They are charged with refrigerant, then sold for use in servicing or commissioning equipment. Thereafter, they are discarded.



This leads to large quantities of scrap metal being generated, which might be more acceptable if scrap metal merchants were less reluctant to accept the depleted cylinders.

“You can’t simply dump them in a landfill without evacuating them first, because it’s illegal. Moreover, scrap metal merchants often won’t accept them because of the residual gas inside, which makes them dangerous,” Richardson explains.

La Grange adds that these disposable containers are never emptied completely.

“To get 100% of the refrigerant out of the cylinder, it would need to be exposed to a portion of the refrigeration system below atmospheric pressure – in a vacuum.”

He adds that this is harmful to most systems and does not often result in completely empty containers when a system is already charged. The balance of the synthetic refrigerants remaining in the cylinders is released into the atmosphere when the containers are scrapped.

“The volumes per cylinder might seem insignificant but consider the millions of disposable cylinders used and it adds up to a significant direct impact on global warming,” he says.

The vapour heel represents about 3% of the refrigerant charge, whereas the liquid heel represents up to 8%.

In a report submitted to the then Department of Environmental Affairs by refrigerant distributor A-Gas in August 2015, it was estimated that about 225 000 disposable cylinders are sold in South Africa every year, of which about 70% are filled with R22, a hydrochlorofluorocarbon (HCFC).

The report states that the heel remaining in the cylinders after disposal is anywhere between about 400 g – about 2.94% of the original charge – and 680 g – about 5% of the original charge. This equates to a significant amount of ozone depleting substances, including carbon dioxide and other harmful emissions, being released into the atmosphere if the cylinders are not properly disposed of.

There is also the estimated 3 150 m<sup>3</sup> scrap metal produced, which often ends up in landfill.

Richardson explains that proper disposal is a somewhat arduous procedure, which a large number of end-users neglect to follow. It requires that the cylinders be thoroughly evacuated of all residual gas through the implementation of a total vacuum, and then punctured to ensure that they cannot be reused. This needs to be carried out carefully by qualified professionals.

“Sometimes, however, end-users modify the one-way valves on the cylinders so that they can be reused, which is extremely dangerous and illegal,” he warns.

This process involves bypassing an integral safety device built into the disposable cylinder by the manufacturer to prevent over-pressurisation. This practice can lead to explosions.

Further, it is difficult to assess the consistent quality of the gas when it is delivered in disposable cylinders.

“Consistent refrigerant quality with disposable cylinders is difficult to guarantee. Disposable cylinders necessitate spot checks within a batch to try ensure that the refrigerant quality is consistent,” La Grange says, adding that customs and environmental officials would have a much simpler task checking large shipping-sized containers.

Globally, the illegal trade in chlorofluorocarbon and HCFC refrigerants relies heavily on disposable cylinders to operate. La Grange claims that banning all disposable cylinders globally would go a long way towards a reduction in illegal trade.

Richardson notes that, although the Department of Environment, Forestry and Fisheries (DEFF) is still actively considering the ban in consultation with industry stakeholders, it is facing vocal pushbacks from end-users who claim that it would damage the economy and take away jobs.

For example, in an open letter to the DEFF, published in HVAC-R industry publication Cold Link Africa in 2018, HVAC-R services provider AC&R Components owner Trevor Dyer claims that the call to ban disposable cylinders is not about protecting the environment at all, but rather an underhanded bid for certain industry participants to gain a larger market share.

“I don’t think we should accommodate an informal sector that re-gasses motor vehicle air-conditioners – for example – without attending to the reason for the leak, at the cost of the environment,” La Grange rebuts.

He says that, ideally, synthetic refrigerants in disposable cylinders should not be sold over the counter to those not in possession of the required South Africa Qualification and Certification Committee gas registration.

The alternative to disposable cylinders is to supply refrigerants in reusable cylinders, also known as reclaim cylinders, which are in short supply, according to Dyer, and which could lead to hundreds of businesses not having their refrigeration service needs met by the HVAC-R industry.

Conversely, Richardson believes that it is merely end-users, who use the disposable cylinders on a daily basis, wanting to do the job in the easiest way possible.

However, he is confident that, eventually, the ban on disposable cylinders will be implemented.

La Grange believes there is much potential for the local industry to provide supplies and services when disposable cylinders “inevitably” become illegal.

“Certified reusable containers would be needed, and they would need to be recertified periodically. They would need to be cleaned and properly evacuated for reuse regularly,” he says.

He believes that this would translate to training centres having greater demand for their specific services as well, to ensure that the local industry and small business owners can provide these services at a high standard.

[Engineering News, 14th February 2020 BY: Darren Parker](#)

ASIA PACIFIC

## 5. Japan launches Fluorocarbons Initiative, contributing to global effort to solve the climate crisis



*Air conditioners and refrigerators emit super-pollutants magnitudes worse for the climate than carbon dioxide. Japan and the Climate and Clean Air Coalition are working to get rid of them.*

As the world warms demand for cooling is growing. Over the next three decades, it's estimated that 10 air conditioners will be sold every second. Without action, these air conditioners will—ironically—dramatically heat up the planet. If not properly disposed of, the gases used in cooling equipment can dramatically exacerbate global warming, triggering a brutal cycle that increases the demand for cooling, in turn, further warming the planet.

The most common gases used in cooling are manufactured refrigerants known as fluorinated gases. The more prevalent are Hydrofluorocarbons (HFCs), powerful greenhouse gases, some of which are thousands of times worse for the climate than carbon dioxide (CO<sub>2</sub>). Moreover, cooling requires immense amounts of energy, gobbling ten percent of global electricity today. This electricity is often generated by coal fired power plants, major emitters of carbon and toxic pollutants. If drastic measures are not taken, emissions from cooling could increase by 90 percent by 2050.

Proper management of the entire HFC lifecycle is critical because HFCs leak out at every stage of a cooling equipment's lifespan: in factories when it's built, every day when it's in use, when it's being repaired, and at the end of its life when it is destroyed or abandoned in landfills. While the Montreal Protocol, through the Kigali Amendment, is now managing upstream emissions through an HFC phasedown, and groups like the Climate and Clean Air Coalition's new Efficient Cooling Initiative are working to address emissions and efficiency during the useful life of equipment, there has always been a serious management gap in the last stage.

At the recent United Nations Climate Change meeting in Madrid, Spain (COP 25), Japan's Minister of the Environment, Shinjirō Koizumi, launched the Fluorocarbons Life-Cycle Management Initiative to deal with the issue. Japan recognizes, and hopes other countries also acknowledge, that HFCs are not only a great liability, they're a great opportunity for stemming catastrophic warming.

"People pay so much attention to CO<sub>2</sub> and net zero emissions by 2050. But, can we ignore fluorocarbons?" Mr. Koizumi asked. "If we do not take any further measures, Fluorocarbon emissions will significantly increase and, consequently, the equivalent of 72 billion tons of CO<sub>2</sub> from fluorocarbons will be released into the atmosphere. To achieve net zero emission targets, actions for fluorocarbons are inevitable."

Japan has historically provided strong leadership on the issue. In 2001 it became the first country to legally regulate the recovery and destruction of HFCs when it enacted the Fluorocarbons Recovery and Destruction Law.

Mr. Koizumi also acknowledged that the cooling sector can play another significant role in climate protection by moving toward more energy efficient technologies.

“Japanese companies already have cooling technology with extraordinary energy-saving capacity and they are working to spread this technology and also disseminate energy saving natural refrigerant equipment that doesn’t use fluorocarbons throughout the world,” Mr. Koizumi said.

Speaking at the launch, Alexandra Bonnet, Deputy Director for European and International Affairs at the Ministry for an Ecological and Solidary Transition, France, said the move to efficient cooling is important.

“We stand in the middle of a vicious circle: the world is warming so we need more cooling but that cooling causes more warming,” Ms. Bonnet said. “We need to help countries leapfrog past this vicious circle. Industry has the solutions...we need to find the right ones and deliver them.”

The Climate and Clean Air Coalition (CCAC) welcomed Japan’s continued leadership on HFCs.

“Japan has been a real leader within the Coalition since the very beginning. Every time we talk about HFCs, our partners in Japan talk about the importance of managing lifecycle emissions,” said Dan McDougall, Senior Fellow at the CCAC said at the launch. “We look forward to working with Japan to spread this initiative throughout the region and globally.”

Mr. Koizumi announced that they’ve received support from 11 countries and international organizations and 10 Japanese companies and organizations for their initiative.

Chile joined Japan saying that while Chile is not historically a large emitter, the country is seeing its HFC emissions increasing—something that is true of many low- and middle-income countries. Because of this, Chile announced it has started a pilot program on HFC management and are interested in strengthening their Nationally Determined Contribution targets (their international commitment to reduce emissions) by including HFC targets. A representative from the Maldives also expressed support for the initiative.

There is greater momentum than ever before on HFC management and energy efficiency, making now a critical time for concerted action. Japan and the CCAC are committed to continuing to push governments, businesses, and civil society actors to implement policies and regulations to manage HFCs at every stage of their life cycle—measures that will help catalyse the dramatic actions needed across the board and around the world to prevent catastrophic levels of warming.

“Actions to solve global environmental issues began with the success of fluorocarbon measures carried out by all countries to protect the ozone layer,” Mr. Koizumi said. “I believe we can also roll out actions to build a circular economy through life-cycle management, including recovery and destruction, from Japan to the world—starting with fluorocarbons, then plastics, then CO<sub>2</sub>, and from there to all actions on climate change.”

In 2019, Japan, France, and Nigeria launched the CCAC’s Efficient Cooling Initiative to raise awareness about opportunities for efficient cooling and mobilize political support for action at the highest levels. The initiative hosted two ministerial round tables to discuss the need to phase down HFCs while improving the energy efficiency of cooling equipment in order to achieve the Paris Agreement target to keep global temperature rise well below 2 degrees Celsius. The initiative also works to increase the visibility and accessibility of alternative refrigerants and technologies for all countries.



Japan's initiative is bolstered by the success of other global compacts that Japan and the CCAC have provided leadership on. The first is the Kigali Amendment to the Montreal Protocol, an international resolution to reduce greenhouse gases from the cooling sector, which went into force in January of 2019. Nations promise to reduce HFCs by over 80 percent over the next 30 years and to innovate the energy efficiency of cooling equipment. If fully implemented, it could avoid up to 0.4°C of global warming. The Montreal Protocol itself is considered one of the most successful environmental agreements of all time, having helped almost entirely phase out products that were destroying the ozone layer.

The newest of these agreements is the Biarritz Pledge through which heads of state attending the G7 meeting in Biarritz, France pledged to support CCAC's Efficient Cooling Initiative by phasing out HFCs and increasing energy efficiency through measures such as developing national cooling plans, using energy performance standards and labelling, and facilitating market access for efficient and affordable cooling technologies. France and Japan are among the 15 countries who have signed the pledge.

[The Climate and Clean Air Coalition \(CCAC\), January 2020](#)

## **6. Primacy of Pakistan Customs' striking seizures and timely-interventions**



Looking through the lenses of fleeting times, this year's slogan of World Customs Organization of "Customs Fostering Sustainability for people, prosperity and planet", seems to resonate with few noteworthy developments of the preceding year. In bolstering these WCO objectives, Pakistan Customs has tremendously played a pivotal role in combating the scourge of illicit trade and smuggling of goods and cash, keeping under invoicing and over-invoicing-in-check, protecting the masses from spurious medicines/psychotropic/intoxicating drugs and counterfeit products, and shielding the ozone layer from emission of hazardous chemicals. [...]

In another significant case of a largest seizure of a novel kind for Pakistan, customs authorities confiscated 18,000 kilogrammes of the smuggled refrigerant (R-22 also known as HCFC-22 refrigerant, a powerful ozone-depleting substance and greenhouse gas) at Karachi Port in mid-October, as was also reported in United Nations Environment Programme publications, 2019.

Countries around the world are phasing out hydrochlorofluorocarbons like R-22 under the Montreal Protocol, the treaty that protects the ozone layer. According to the latest Scientific Assessment of Ozone Depletion, actions taken under the Montreal Protocol are resulting in steady, long-term decreases in the atmospheric abundance of controlled ozone-depleting substances (ODS) and the ongoing recovery of stratospheric ozone at a rate of 1 to 3 percent per decade since 2000.

"All credit to Pakistan's customs and the National Ozone Unit in the Ministry of Climate Change, for taking action to prevent this destructive shipment from getting to its intended destination. The ozone layer has been healing thanks to the Montreal Protocol, strict

regulations against ozone-depleting substances like R-22 and strong enforcement", remarked Dechen Tsering, UN Environment's Regional Director for Asia and the Pacific [...]

[Business Recorder, 28 January 2020, By: Umair Zahid](#)

## NORTH AMERICA

### 7. Most industry stakeholders support HFC reduction bill

There is strong support in the heating, ventilation, air-conditioning, and refrigeration (HVACR) industry for a bill in the U.S. Congress that would significantly reduce the nation's use of hydrofluorocarbons (HFCs), one of the world's most common refrigerants and a powerful greenhouse gas (GHG).



Under the American Innovation and Manufacturing Leadership Act of 2020 (AIM Act) (H.R. 5544), the production and consumption of HFCs would be phased down by 85% by 2036 compared with the average produced and consumed between 2011 and 2013. The HVACR sector says it is comfortable with the economic and technical viability of environmentally friendlier refrigerants that are available to replace HFCs. This view is also held by several major business associations, at least one leading environmental group, and both Democratic and Republican lawmakers.



Industry endorsement of H.R. 5544 is motivated to a large extent by substantial progress U.S. companies have made in developing a class of climate-friendlier chemicals called hydrofluoroolefins (HFOs). The business sector believes enactment of the bill will power a surge in new economic growth, including as many as 33,000 new HVACR jobs and a strong competitive position internationally. [...]

the bill contemplates many of the same regulatory measures the EPA has been implementing for years during the phaseout and replacement of CFCs and HCFCs. Accordingly, if enacted, it would seem likely that new implementing regulations would present few surprises to the regulated community. At the hearing, Cindy Newberg, director of the Agency's Stratospheric Protection Division, subtly indicated that her division would be well prepared to put the bill to work.

“If signed into law, the AIM Act would require the EPA to do many of the same types of activities for HFCs that we have done and continue to do for the ozone-depleting substances,” said Newberg.

Written testimony from the hearing is available [here](#)

[EHS daily advisor, 5 February 2020, By: William C. Schillaci](#)

## EUROPE & CENTRAL ASIA

### 8. Fight against illegal imports of refrigerant gases into the EU

*A conference on the fight against illegal imports of refrigerant gases into the EU took place in Brussels on 23-24 January. It was organised by the European Anti-Fraud Office (OLAF) in close cooperation with two Commission departments, DG TAXUD and DG CLIMA. The fight against the illegal imports of*



*hydrofluorocarbons (HFCs) into the EU is one of the operational priorities for the European Anti-Fraud Office. It fully matches one of the key priorities of the new Commission: making Europe the first climate neutral continent by 2050, “the European Green Deal”.*

Refrigeration is an essential part of everyday life. Food is chilled, frozen, stored, transported and displayed in refrigerated units. Houses, offices, cars, trains, planes are refrigerated. The gases used in refrigeration equipment are often HFCs. These gases were introduced as replacements for ozone depleting substances. HFCs do not deplete the ozone layer but are potent greenhouse gases, often with a high global warming potential.

To address this issue, an EU Regulation adopted in 2014 established a phase-down to progressively reduce the quantity of HFCs placed on the market. Since 2015, the climate impact of the HFCs sold on the Union market has already been reduced by almost half.

The phase-down is having an expected side effect: the market shortage created by the phase-down has increased the price of HFCs. This situation has generated opportunities for parallel trade and the emergence of a black market.

However, the biggest attraction for criminals is the market of counterfeit refrigerants. These are often impure, hazardous and are sold at discounted prices. Trade in counterfeit refrigerants is on the rise and brings adverse consequences: poor performance, costly damage to machinery and equipment and, most worryingly, safety hazards resulting in

explosions and loss of human life - some years ago, a number of refrigerated shipping containers, containing counterfeit refrigerant gas, exploded killing several port workers.

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

The conference brought together representatives from EU industry, experts from the EU national customs administrations and from the ministries of environment. The objective was twofold:

- to listen and gather information from industry and other stakeholders that could help us with our work;
- to share experience and strengthen the exchange of information among customs authorities and the competent environmental authorities.

To handle cross-border fraud, customs and environmental authorities as well as industry need to work together with the support of the European Commission.

The fight against the illegal import of HFCs into the EU is one of the operational priorities for the European Anti-Fraud Office. It also fully matches one of the key priorities of the new Commission: making Europe the first climate neutral continent by 2050, "the European Green Deal".

The conference was funded from the Hercule III financial programme managed by OLAF, which is specifically dedicated to fighting fraud, corruption and any other illegal activities affecting the financial interests of the EU.

[European Commission, European Anti-Fraud Office \(OLAF\), 24 January 2020](#)

---

### **9. 12.5 tonnes of illegally imported refrigerant gases seized with OLAF's help**

In close cooperation with OLAF [European Anti-Fraud Office], the Italian Customs Agency seized 12.5 tonnes of fluorinated greenhouse gases, so called hydrofluorocarbons (HFCs) last week. The seizure follows OLAF's pledge to make the fight against the illegal imports of HFCs into the EU one of its operational priorities, fully matching one of the key priorities of the new Commission: making Europe the first climate neutral continent by 2050, "the European Green Deal".

The Italian Customs Agency seized 1 098 cylinders containing HFC gas (R134a, R410a and R404a) in the region of Lombardy on 5-6 February 2020. This successful operation was the result of intelligence received by the European Anti-Fraud Office (OLAF) and of close operational cooperation between OLAF and the Italian Customs Agency.

The products seized have a high Global Warming Potential (GWP), estimated to be thousands of times more than their own mass, approximately 26 269 tonnes of CO<sub>2e</sub>, as per the CO<sub>2e</sub> calculation formula in Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-gases).

Tonnes of CO2 Equivalent and GWP			
HFC	GWP	Kg. Seized	Tonnes CO2e
R134a	1.430	4.060	5.805,80
R410a	2.088	6.570	13.718,16
R404a	3.922	1.720	6.745,84
			<b>26.269,80</b>

According to calculations by the Italian Customs Agency, this total amount of carbon dioxide corresponds to CO<sub>2</sub> emitted by more than 100 small cars (110 CO<sub>2</sub> g/km), along a distance of almost 239 million kilometres.

HFC gases were introduced as replacements for ozone depleting substances, and are often used in refrigerated units. HFCs do not deplete the ozone layer but are potent greenhouse gases, often with a high global warming potential.



The fight against the illegal import of HFCs into the EU is one of the operational priorities for OLAF, in line with the key priority of the Commission to make Europe the first climate neutral continent by 2050, "The European Green Deal". [...]

[European Anti-Fraud Office \(OLAF\), 11 February 2020](#)

### 5<sup>th</sup> 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**

- [31<sup>st</sup> Meeting of the Parties to the Montreal Protocol](#),  
4 - 8 November 2019, Rome, Italy
- [Bureau Meeting of the 30th Meeting of the Parties to the Montreal Protocol](#),  
3 November 2019, Rome, Italy

- [63<sup>rd</sup> Meeting of the Implementation Committee under the Non-Compliance Procedure of the Montreal Protocol](#),  
2 November 2019, Rome, Italy
- [41<sup>st</sup> Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol](#), 1 - 5 July 2019,  
1 - 5 July 2019, Bangkok, Thailand
- [62<sup>nd</sup> Meeting of the Implementation Committee under the Non-Compliance Procedure of the Montreal Protocol](#),  
29 June 2019, Bangkok, Thailand

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



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

## The UN Environment Assessment Panels

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

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

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

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



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

[Documents and information note for the 84<sup>th</sup> 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 83<sup>rd</sup> meeting of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol](#), Montreal, Canada, 27-31 May 2019
- [83<sup>rd</sup> meeting of the Executive Committee](#)
- [82<sup>nd</sup> meeting of the Executive Committee](#)

[Learn more >>>](#)



## 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 20<sup>th</sup> 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](mailto:samira.degobert@un.org)



**OzonAction Factsheet: Proposed additional HS code sub-headings for HFCs in advance of the 2022 HS code update - 'Cheat Sheet'**

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

[Download the Factsheet](#)

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



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

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

[Download the Factsheet](#)

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

## UNEP OzonAction Training Programme for National Ozone Officer

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

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

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

For this reason, OzonAction has completely transformed and updated its NOO training programme to assist NOUs 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.





## [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

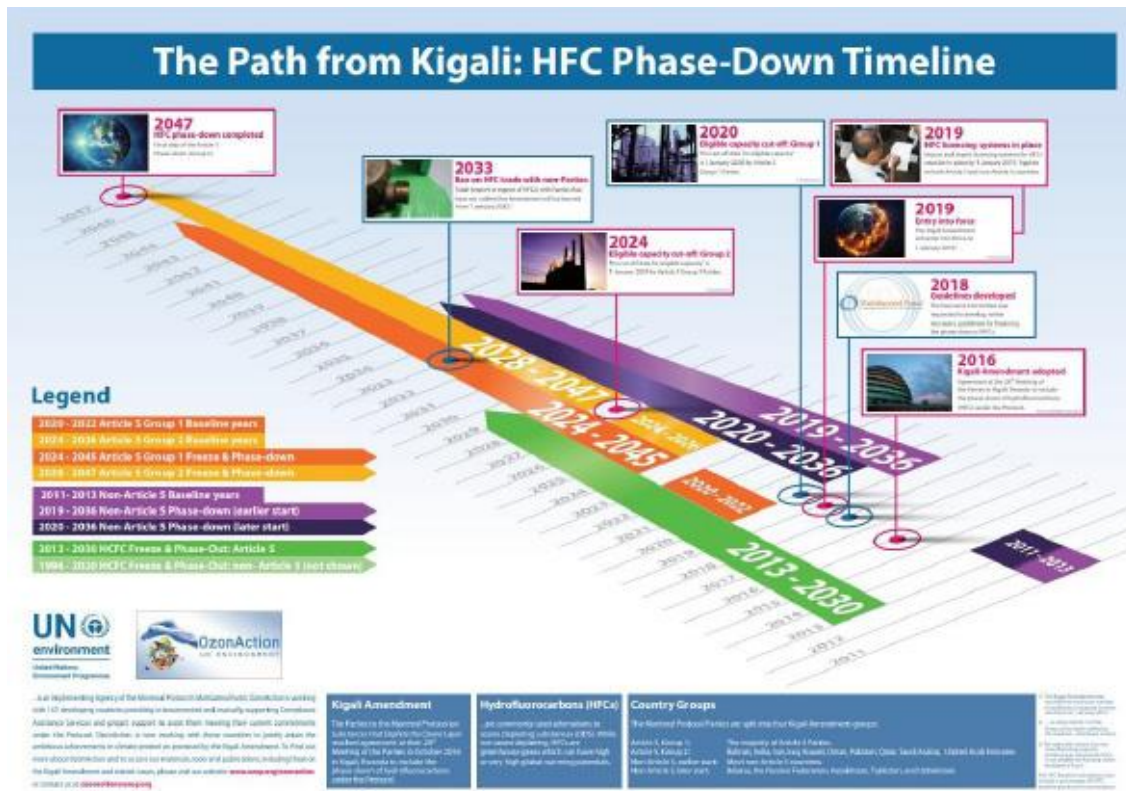
[Ayman Eltalouny](#), Coordinator International Partnerships , UN Environment OzonAction



## 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 CO<sub>2</sub>-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.

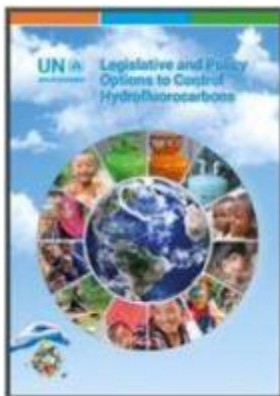
This application, consisting of short instructional videos on techniques, safety and best practice, serves as a complementary training tool for refrigeration and air-conditioning (RAC) sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training.

#### **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

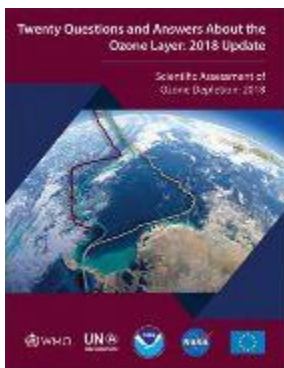


### [Legislative and Policy Options to Control Hydrofluorocarbons](#)

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 CO<sub>2</sub>-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.

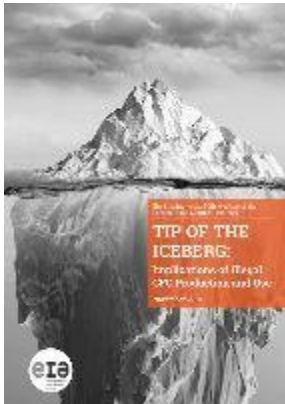
Access the International Dictionary of Refrigeration on the [IIR website](#)



[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 1994-2019](#)

The 2019 edition of the European Environment Agency (EEA) report on ODS confirms that the EU has already achieved its goals on the phase-out of such substances under the Montreal Protocol. 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



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 28<sup>th</sup> 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:

- 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.
- Keep up-to-date with subscriptions to customized e-alerts on New Volumes, Topics and saved Searches. Enhanced content and functions
- Easily export references, citations and abstracts.
- Print, download or share articles with colleagues or peers.
- 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](mailto:info@area-eur.be)



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

#### Disclaimer:

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

The views expressed in articles written by external authors are solely the viewpoints of those authors and do not represent the policy or viewpoint of UNEP. While UNEP strives to avoid

inclusion of misleading or inaccurate information, it is ultimately the responsibility of the reader to evaluate the accuracy of any news article in OzoNews. The citing of commercial technologies, products or services does not constitute endorsement of those items by UNEP.

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

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

If you wish to submit articles, invite new subscribers, please contact:  
Samira Korban-de Gobert,  
Tel. (+33) 1 44.37.14.52,  
[samira.degobert@un.org](mailto:samira.degobert@un.org)



[why did I get this?](#) [unsubscribe from this list](#) [update subscription preferences](#)

UNEP · 1 rue Miollis · Bat. VII · Paris 75015 · France