

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 October 2020

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GLOBAL

1. Kigali Amendment latest ratifications

Congratulations to the latest countries which have ratified the Kigali Amendment:

Cabo Verde, 28 October 2020
Malaysia, 21 October 2020
San Marino, 20 October 2020 A
Bolivia (Plurinational State of), 9 October 2020
Russian Federation, 3 October 2020 A



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. Contingency meeting plans for 2020-2021: update

As we continue to live and work under the shadow of the COVID-19 pandemic, restrictions on travel and the convening of large meetings remain in place. The Ozone Secretariat, after consulting the bureaux of the eleventh meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and the Thirty-First Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, the co-chairs of the forty-second meeting of the Open-ended Working Group (OEWG42), as well as many parties, suggests to conduct the combined twelfth meeting of the Conference of Parties to the Vienna Convention and the Thirty-Second Meeting of Parties to the Montreal Protocol (COP12/MOP32) online.



Meetings in 2020

Proposed arrangements for COP12(I)/MOP32 in November 2020

The combined twelfth meeting of the Conference of the Parties to the Vienna Convention, part I, and the Thirty-Second Meeting of the Parties to the Montreal Protocol (COP12(I)/MOP32) will be convened as an online meeting with a reduced agenda. **The preparatory segment will take place from Monday, 23 November 2020 to Thursday, 26 November 2020, and the high-level segment will take place on Friday, 27**

November 2020 from 2 - 4 p.m. EAT each day with possibility of an additional extra hour should parties decide to have additional time.

COP12 will be held in two parts. Part I will be convened this year to decide on the budget of the Vienna Convention Trust Fund for **2020 (revised)** and 2021 only. All the other agenda items that refer to the Convention will be addressed in COP12 part II in 2021.

- MOP32 will address few issues as found in [the agenda of the meeting](#)

Preparatory work will be needed in order to better prepare parties and facilitate their discussions during the online [meeting](#). The [online forum](#) will be the forum used for the preparatory work on the specific agenda items of COP12(I)/MOP32 and will be open from 1 October 2020.

The related meetings that will take place immediately prior to COP12(I)/MOP32 are:

- the sixty-fifth meeting of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol, online, 16-18 November 2020;
- the joint meeting of the bureaux of the eleventh meeting of the Conference of the Parties to the Vienna Convention and the Thirty-First Meeting of Parties to the Montreal Protocol, online, 21 November 2020.

Meetings in 2021

OEWG42 part II, on replenishment of the Multilateral Fund for 2021-2023

A second part of OEWG42 focusing on the issue of replenishment may be convened as a face-to-face meeting in March 2021 to discuss the need for and content of a supplementary report. The Secretariat has made a tentative booking for the OEWG42 part II on replenishment to be held on 15 and 16 March 2021 in Montreal, Canada.

The parties may task the Technology and Economic Assessment Panel to prepare a supplementary report in time for consideration by the parties at the forty-third meeting of the Open-ended Working Group (OEWG43) in July 2021.

If a face-to-face meeting in the first quarter of 2021 is not possible due to the pandemic, then the suggested timeline will be adjusted accordingly.

OEWG43: Bangkok, 12-16 July 2021

The forty-third meeting of the Open-ended Working Group (OEWG43) is scheduled to be held from 12-16 July 2021 in Bangkok. All the agenda items that were deferred from the OEWG42 would be included in the agenda of OEWG43. In addition, any other issue that the parties may wish to discuss in 2021 can also be included.

The sixty-sixth meeting of the Implementation Committee will be held on 11 July 2021.

COP12(II)/MOP33: Nairobi (tentative), 25-29 October 2021 (tentative)

Part II of COP12 will address all issues including the recommendations of the eleventh meeting of the Ozone Research Managers (ORM11), which is now rescheduled to be convened in April 2021, matters related to the trust fund for monitoring and research and the budget of the Vienna Convention Trust Fund for the triennium 2022-2024. The Thirty-

Third Meeting of the Parties (MOP33) will address all issues that MOP32 would have addressed in 2020 if a full-scale, physical meeting had been held, plus any new issues that may arise.

Other related meetings to be convened immediately prior to COP12(II)/MOP33 are:

- the sixty-seventh meeting of the Implementation Committee, 23 October 2021
- the joint meeting of the bureaux of the twelfth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Second Meeting of the Parties, 24 October 2021

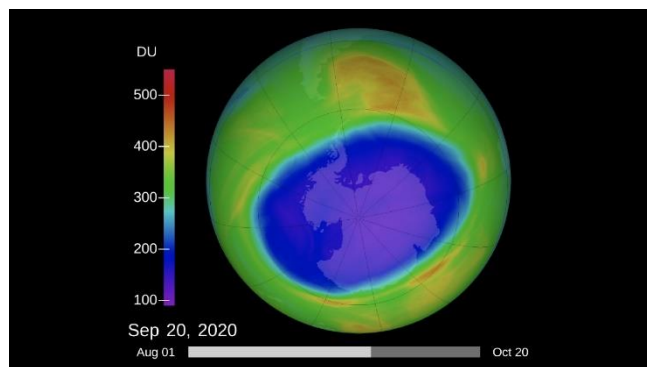
Eleventh Meeting of the Ozone Research Managers (ORM11)

The **ORM11, part I, will be held online on 7-8 October 2020** to discuss only the issue of international monitoring programmes, namely the gaps in the global coverage of atmospheric monitoring of substances controlled by the Montreal Protocol.

ORM11, part II, will be held from on 14 to 16 April 2021 in Geneva to discuss all remaining issues set out in the agenda of the meeting taking also stock of the discussion on the gaps in monitoring of controlled substances discussed in ORM11(I). The recommendations will be passed on for the consideration of COP12(II).

[The United Nations Environment Programme, Ozone Secretariat, 21 September 2020](#)

3. Large ozone hole recorded over Antarctic for 2020, but Montreal Protocol efforts have minimized the damage



Cold temperatures and strong winds combined to create one of the deepest and largest holes in the ozone layer in recent years, but efforts to phase down ozone-depleting chemicals mean the hole is much smaller that it could have been, scientists from NASA and the National Oceanic and Atmospheric Administration (NOAA) said today.

NASA and NOAA track the ozone layer throughout the year and determine when the hole reaches its annual maximum extent. The annual ozone hole for 2020 reached its peak at about 9.6 million square miles (or 24.8 million square kilometres), roughly three times the

size of the United States, on 20 September. Similarly, measurements from the European Space Agency confirm the same as of 2 October this year.

This is the 12th-largest hole in 40 years of satellite records, with the 14th-lowest ozone readings in 33 years. The measurements stand in stark comparison to 2019, which saw the smallest ozone hole to date over the Antarctic. In 2019, the hole hit 6.3 million square miles (16.4 million square kilometres) in early September, then shrank to under 3.9 million square miles (10 million square kilometres) during September and October.

The small hole in 2019 came as a result of warm temperatures in the stratosphere and a weak polar vortex. These conditions stopped the formation of polar stratospheric clouds, within which ice crystals catalyse the destruction of ozone, with the help of sunlight. However, declines in levels of ozone-depleting chemicals controlled by the Montreal Protocol prevented the 2020 hole from being as large as it could have been.

“From the year 2000 peak, Antarctic stratosphere chlorine levels have fallen about 16 per cent towards the natural level,” said Paul A. Newman, chief scientist for Earth Sciences at NASA's Goddard Space Flight Center in Greenbelt, Maryland. “The hole would have been about a million square miles larger if there was still as much chlorine in the stratosphere as there was in 2000.”

The Montreal Protocol was set up in 1987 to protect human health and the environment by closing the hole in the ozone layer. With the universal support of 198 nations, the Montreal Protocol led to the phase-out of almost 99 per cent of ozone-depleting substances.

While the measurements this year may seem worrying, the overall trend is towards the ozone hole slowly closing. Estimates say that it will return to pre-1980 levels by mid-century.

Annual fluctuations in ozone levels, within the downward trend, are predominantly due to weather conditions.

During the Southern Hemisphere spring season (August - October) the ozone hole over the Antarctic increases in size, reaching a maximum between mid-September and mid-October. When temperatures high up in the atmosphere (the stratosphere) start to rise in late Southern Hemisphere spring, ozone depletion slows, the polar vortex weakens and finally breaks down, and by the end of December ozone levels have returned to normal.

So, while the current ozone hole area is still large compared to the 1980s, atmospheric levels of anthropogenic ozone-depleting substances have slowly declined since 2000. Parties implementing the Montreal Protocol have also positively impacted ozone levels, with upper stratospheric ozone levels increasing 1 to 3 per cent every ten years since 2000.

However, ozone levels remain high enough to produce significant ozone loss, demonstrating their long life and the need for continued vigilance and efforts under the Montreal Protocol to prevent any illegal emissions of ozone-depleting substances.

For a more in-depth analysis of the state of the ozone for 2020 and the work of both NASA and NOAA please visit:

<https://ozonewatch.gsfc.nasa.gov/>
<https://www.esrl.noaa.gov/gmd/hats/>

See also >>>

[NASA and NOAA Scientists Develop Method to Create Continuous Ozone Climate Data Record](#), NASA Center for Climate Simulation, October 2020, By Jarrett Cohen, *NASA Goddard Space Flight Center*

[Large, Deep Antarctic Ozone Hole Persisting into November](#), 30 October 2020, By Theo Stein, National Oceanic and Atmospheric Association, and Ellen Gray, NASA's Earth Science News Team

[Antarctic ozone hole is one of the largest and deepest in recent years](#), European Space Agency (ESA), 19 October 2020

4. Operation DEMETER VI thwarts transboundary shipments of illegal waste and ozone depleting substances

In their capacity as the principal regulatory border agency, Customs administrations around the world are mandated to monitor and control cross-border movements of environmentally sensitive commodities (ESCs), and ensure compliance with trade-related provisions stipulated by Multilateral Environmental Agreements (MEAs). These include the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention), and the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol).

The various DEMETER operations, with the first one dating back to 2009, have become synonymous with global Customs enforcement efforts aiming at enforcing unique ESC and MEA requirements. During Operation DEMETER VI, focus fell on illegal shipments of hazardous waste, with an emphasis on plastic waste, as well as on substances controlled by the Montreal Protocol, including hydrofluorocarbons, or HFCs, which contribute to global warming and climate change.

The Secretary General of the World Customs Organization (WCO), Dr. Kunio Mikuriya, said "Operation DEMETER VI confirmed the WCO's commitment to work closely with its partners to fight against illegal waste and ozone depleting substance trade." He added that this Operation demonstrated the importance of collective enforcement actions and the global Customs community's support for the WCO's theme for the year 2020: Customs fostering Sustainability for People, Prosperity and the Planet.

Various partners rallied in support of Operation DEMETER VI, with 73 Customs administrations joining forces. The WCO Secretariat, the Regional Intelligence Liaison Offices (RILOs) for Asia/Pacific and Western Europe, as well as China Customs all played leading roles in the Operation, establishing the Operational Coordination Unit in the Asia/Pacific RILO based in Seoul, Korea. The European Anti-Fraud Office (OLAF) also supported the Operation by assisting WCO Members with enhanced risk information.

In addition, the other nine WCO RILOs, the WCO-United Nations Office on Drugs and Crime (UNODC) Container Control Programme, INTERPOL, Europol, the EU Network for Implementation and Enforcement of Environmental Law (IMPEL), the Secretariat of the Basel Convention as well as the staff of the United Nations Environment Programme (UNEP) OzonAction ensured a collective approach in support of Operation DEMETER VI.

Operation DEMETER VI

131 seizures, including:

- Almost **99,000 tonnes** of waste and an additional **78,000 pieces** of waste materials (not weighed),
- Approximately **42 tonnes** of substances controlled by the Montreal Protocol

73 Customs Administrations joining forces

- **92% of metal waste (90,872 tonnes)**,
- **7% of various types of plastic waste (6,859 tonnes)**,
- machines and electric/electronic waste,
- waste from production and manufacturing,
- other industrial waste,
- contaminated used clothing,
- etc.
















Using risk indicators and focusing on pre-identified routings and hotspots, Customs officers managed to control suspicious shipments, stop unlicensed trade and seize illegal waste and substances controlled by the Montreal Protocol. Despite the measures in place to counter the Covid-19 pandemic imposing some restrictions on Customs operational capacity, this concerted enforcement effort resulted in a total of 131 seizures, including:

- Almost 99,000 tonnes of waste and an additional 78,000 pieces of waste materials (not weighed), as well as
- Approximately 42 tonnes of substances controlled by the Montreal Protocol.

Five countries reported most of the seizures of waste products: Belgium, Canada, China, Poland, and Denmark, while most of the seizures of substances controlled by the Montreal Protocol were performed in Bulgaria, Croatia, Denmark, and Poland.

About 92% of the seized waste commodities consisted of metal waste (90,872 tonnes), and about 7% consisted of various types of plastic waste (6,859 tonnes). Other commodities seized included machines and electric/electronic waste, waste from production and manufacturing, other industrial waste, contaminated used clothing, municipal waste, used tyres, waste solar panels, paper waste, textile waste, and mixed wood waste.

Concerning the seized substances controlled by the Montreal Protocol, nearly 75% were HFCs (over 31 tonnes), which are mostly used in refrigeration and air conditioning systems, in the manufacture of foams and insulating materials, as well as fire extinguishing agents. Although HFCs are non-ozone depleting gases, they are very potent greenhouse gases that contribute to global warming and climate change.



42 tonnes of seized substances controlled by the Montreal Protocol
Photo: Courtesy of Bulgaria Customs



Photo: Courtesy of Poland Customs

Under the Kigali Amendment, Montreal Protocol Parties are required to gradually phase down HFC production and use. The first reductions commenced in 2019 for most developed countries, which will be followed by a halt of HFC production and consumption levels between 2024 and 2028.

The efforts by the WCO and its partners to address environmental risks will continue to intensify, with more enforcement initiatives planned for the future.

French version "[L'Opération DEMETER VI contrecarre les envois transfrontières de déchets illicites et de substances appauvrissant la couche d'ozone](#)"

[The World Customs Organization \(WCO\), 29 October 2020](#)

5. The future of Arctic sea-ice biogeochemistry and ice-associated ecosystems

Abstract

The Arctic sea-ice-scape is rapidly transforming. Increasing light penetration will initiate earlier seasonal primary production. This earlier growing season may be accompanied by an increase in ice algae and phytoplankton biomass, augmenting the emission of dimethylsulfide and capture of carbon dioxide. Secondary production may also increase on the shelves, although the loss of sea ice exacerbates the demise of sea-ice fauna, endemic fish and megafauna. Sea-ice loss may also deliver more methane to the atmosphere, but warmer ice may release fewer halogens, resulting in fewer ozone depletion events. The net changes in carbon drawdown are still highly uncertain. Despite large uncertainties in these assessments, we expect disruptive changes that warrant intensified long-term observations and modelling efforts.

[Nature, 27 October 2020, Authors: Lannuzel, D., Tedesco, L., van Leeuwe, M. et al.](#)

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Perspective | Published: 27 October 2020

The future of Arctic sea-ice biogeochemistry and ice-associated ecosystems

Delphine Lannuzel¹ | Letizia Tedesco, L. | Pat Wonggan

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Abstract

The Arctic sea-ice-scape is rapidly transforming. Increasing light penetration will initiate earlier seasonal primary production. This earlier growing season may be accompanied by an increase in ice algae and phytoplankton biomass, augmenting the emission of dimethylsulfide and capture of carbon dioxide. Secondary production may also increase on the shelves, although the loss of sea ice exacerbates the demise of sea-ice fauna, endemic fish and megafauna. Sea-ice loss may also deliver more methane to the atmosphere, but warmer ice may release fewer halogens, resulting in fewer ozone depletion events. The net changes in carbon drawdown are still highly uncertain. Despite large uncertainties in these assessments, we expect disruptive changes that warrant intensified long-term observations and modelling efforts.

AFRICA

6. Ghana Govt to conserve 465GWh in next decade with introduction of ECOFRIDGES

Government is projecting to save over 465 Gigawatt hours (GWh) of electricity in the next 10 years with the launch and introduction of the ECOWAS Refrigerators and Air Conditioners Initiative (ECOFRIDGES).

With the same initiative, households, on the other hand are projected to save about GH¢1,300 [US \$ 223] a year, by replacing old air conditioners with new ones, rating 3-star and above.



At a ceremony in Accra to launch the ECOFRIDGES project, the Director, Renewable & Nuclear Energy at the Energy Ministry, Wisdom Ahiataku-Togobo, said the introduction of ECOFRIDGES took over 12 months of effort in research and design of a sustainable financial mechanism that will enable customers to acquire energy-efficient and climate-friendly ACs and refrigeration appliances.

The scheme, however, brings financial institutions and vendors together to provide flexible payment terms to workers who purchase the products.

Currently, Ecobank, Fidelity, Absa Bank, Cal Bank and Letshego have enrolled to offer ECOFRIDGES in their business scheme in order to accelerate adoption of energy-efficient and climate-friendly domestic cooling appliances.

“ECOFRIDGES addresses a significant hurdle in the market uptake of new energy-efficient appliances, improves standards of clearing secondhand appliances on the market, and makes it possible for people to use air conditioners and fridges” Mr Ahiataku explained.

The Director of Renewable Energy, Energy Efficiency, Energy Commission, Kofi Agyarko, noted, “This programme positions Ghana as an African leader in advancing sustainable development, helping assure a better quality of life for our people while advancing the climate goals of the Paris Agreement and the Kigali Amendment to the Montreal Protocol”

He however appealed to Ghanaians to desist from purchasing used electrical appliances on the Ghanaian market.

Executive Secretary of the Energy Commission, Oscar Amonoo-Neizer, described the ECOFRIDGES initiative as a timely intervention particularly at a time that the Commission is heightening the campaign against home-used electrical appliances.

He said the initiative would save consumers money on their electricity bills.

ECOFRIDGES) is a joint project by the Governments of Ghana and Senegal, the United Nations Environment Programme's United for Efficiency (UNEP U4E) initiative and the Basel Agency for Sustainable Energy (BASE).

Through ECOFRIDGES GO, local financial institutions aim by 2023 to unlock at least US\$11 million in financing in Ghana to support the purchase of over 15,000 more sustainable cooling appliances and entice the replacement of old existing equipment.

[Ghana Web, 24 October 2020](#)

7. Gambia National Environment Agency trains refrigeration technicians in Upper River Region

The National Environment Agency (NEA) recently concluded a three day technicians training programme tailored to suit refrigeration & air conditioning technicians operating within URR. The exercise, a module in both theory and practicals was presided over by the Regional Governor Samba Bah and the Deputy Executive Director of the NEA Dr. Dawda Badgie.



The conclave which was held at the conference hall of Basse Area Council, covered different topics ranging from environmental safety of flammable refrigerants, identification of unsafe conditions, storage, transportation, usage & handling of flammable refrigerants and principles of equipment operation especially the new recovery machine and vacuum. Also taught at training dialogue covered evacuation of recovery machine, recovery kits connection and procedures.

As part of the training exercise and as well as a practical ground, over 25 air conditioning units and systems were serviced at Basse Regional Health Centre as a goodwill gesture.

Samba Bah, the Governor of Upper River Region disclosed in his opening remarks that the "training on Ozone Depleting Substances (ODS) is very important and timely as Environmental issues are currently a global concern. We therefore need to learn from each other particularly on environmental matters that affect all of us." He pointed out.

The emission of controlled refrigerants like Hydrochlorofluorocarbons (HCFCs) according to Governor Bah, do not only deplete the ozone layer but also contribute to the warming of the earth. He further disclosed that the said refrigerants are used in offices, fish processing factories, hotels, etc. to name but a few. "As technicians therefore, you have a stake in the fight against the consumption of such refrigerants. I hope by the end of day-three of the training, you would have learnt a lot about how to use the said refrigerant during the

servicing of your refrigeration and air conditioning systems”. Governor Bah challenged the technicians.

In declaring the training workshop open, Governor Bah called on the participants to share the knowledge learnt with other technicians who did not have the opportunity to be present. He further used the opportunity to thank the NEA on behalf of President Adama Barrow for organising such an important workshop in his Region. He finally challenged the participants to keenly pay attention and actively participate during the deliberations.

Dr. Dawda Badgie, the Deputy Executive Director of the National Environment Agency disclosed that his agency has been partnering with technicians for a long time in the protection and preservation of the Ozone layer.

“The Ozone Layer is a very important resource in the stratosphere protecting life on earth from Ultra Violet B Radiation. When exposed to UVB we can develop skin cancer. Our immune system is suppressed, the marine creatures are affected, the fact that their food stuff known as phytoplankton is destroyed and the photosynthetic process in plants is also retarded leading to low yields,” Dr. Badgie explained.

He said the training aimed at building capacity on how to collaborate as refrigeration and air conditioning technicians in the fight against the depletion of the Ozone Layer; share knowledge on HCFC phase-out and HFC phase down activities, and strengthen information network on trading and consumption of refrigerants within the region. “It is important to note that as technicians you are a major stakeholder in this fight so we really need your support.

During the three day training you will be updated on the progress made by the Ozone Project particularly on the phasing out of Ozone Depleting substances and indeed on new challenges of phasing out HCFCs which is part of the Hydrochlorofluorocarbons Phase-out Management plan (HPMP). HCFCs are mainly used in our fish processing factories, in hotels, households and offices to name but a few. These refrigerants have a potential in warming the earth and at the same time contribute to the depletion of the Ozone Layer.”

Momodou Mendy, senior lecturer from GTTI, who led the training process, revealed that “some of you have already attended similar training programmes but you still need to know that new technologies are emerging and alternative refrigerants are also being introduced and tested in our markets. Your customers including us would count on you on the safety use of such refrigerant as some of them are highly flammable.”

[The Point, 21 October 2020, By Sheikh Alkinky Sanyang](#)

EUROPE & CENTRAL ASIA

8. Special Report: Roadmap for R290 split system air conditioners

The European Commission has released a report recommending the use of propane (R290) in small split-system air conditioners, with the future possibility of a maximum GWP of 150 for new equipment.



In a report entitled *The availability of refrigerants for new split air conditioning systems that can replace fluorinated greenhouse gases or result in a lower climate impact*, the European Commission called for the end of R410A in small split systems.

“It appears technically possible to avoid F-gases today in new single split air conditioning with a cooling capacity below 7kW by using the refrigerant R290 (propane), unless national legislation or codes prohibit its use,” the report said.

Labelling the current regulatory landscape as “unjustified” the report calls for barriers to be removed to allow the introduction of more climate-friendly refrigerants.

Europe has been quick to adopt the “mildly flammable” R32 in small splits with the European Commission claiming the refrigerant had achieved an 80 per cent market share in most countries by 2019.

Legislative amendments are still required in a number of countries but around 60 per cent of split systems put on the French market in 2019 were using R32. A roadmap has been established and manufacturers are said to be committed to using a refrigerant with GWP <750 in split systems with a refrigerant charge <3kg before 2022.

“A further significant reduction of the GWPs of alternatives to eg below 150 may be possible in small single split systems in the medium term,” the report said.

In 2019, the F-gases contained in split systems represented 74 per cent of all F-gases imported into the EU in pre-charged equipment (measured in CO₂ equivalent) and small single-splits themselves made up 38 per cent of all F-gases imported in equipment.

Many of these systems are reversible air-to-air heat pumps.

The EU is aiming for climate neutrality by 2050. The most relevant European standards for refrigeration, air conditioning and heat pumps are EN 378, as well as the product standard IEC EN 60335-2-40 (for air-conditioning systems).

“They impose restrictions that do not appear justified for safety reasons (anymore). Thus they need further updating in line with technological development and based on empirical appreciations of the actual risks showing that acceptable safety levels can be maintained while using flammable refrigerants,” the report said. [...]

The latest news on the global refrigerant landscape will be presented at CCN Live on November 12, 2020. [REGISTER](#) for this free virtual event.

[Climate Control News, 27 October 2020, By Sandra Rossi](#)

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 >>>](#)

ASIA & THE PACIFIC

9. Conservation and Environment Protection Authority, Customs collaborate on border efforts (Papua New Guinea)

As part of the collaboration, CEPA [Conservation & Environment Protection Authority] and its National Ozone Unit have been conducting a number of customs training for PNG Customs officers.



CEPA managing director, Gunther Joku, said such a partnership was the way forward to ensure there is effective enforcement of controlled substance at the PNG borders.

“So what’s important is that CEPA provides training for their officers to be aware of CEPA’s controlled substance,” Joku explained.

“They must be made aware of what’s controlled by CEPA under the various laws and legislations and conventions we have and under such partnership and arrangement, they can do checks and enforcements on our behalf at the borders to protect PNG against the import of prohibited substances.”

He further explained that CEPA is implementing an international agreement to reduce harmful gas emissions into the atmosphere to combat global warming.

“It is the result of the convention that PNG had signed in the Montreal protocol to phase out ozone depleting substances and part of the Vienna Convention to protect the ozone layer. Work on this partnership started in 2016 but the actual work on the implementation started

in 1993 and part of that effort led to establishing the Climate Change Development Authority,” Joku said.

The MD said work to implement these conventions led to CEPA establishing a strong partnership with the industry and other state agencies such as the PNG Customs to address the use of ozone depleting substances in refrigeration appliances, air condition units, fire extinguishers and other equipment.

CEPA National Ozone Unit officer, Kathrina Mogia, said the training proved effective as they received more alerts from PNG Customs officers on suspicious imports this year and hopes that this partnership will continue to improve enforcement efforts going into the future.

Certificates were awarded to Customs officers in a small ceremony to acknowledge their efforts for alerting CEPA on suspicious imports and confiscation and disposal of controlled substances like Ozone Depleting Substances (ODS).

CEPA also has a memorandum of understanding (MoU) with the PNG Refrigeration and Air Conditioning Association (RACA) to monitor and use gases that are not harmful to the ozone layer.

Photo: CEPA and PNG Customs senior management team and officers during the presentation of certificates and affirmation of their partnership and commitment at the Customs office in Port Moresby recently.

[ENN Papua New Guinea, 30 October 2020](#)

10. Fiji on track to phase-out HCFCs



The Department of Environment is amending the Ozone Depleting Substances Regulations to include Annex F of the Montreal Protocol.

From January, the Department will be enforcing the new licensing and permitting system for Hydrofluorocarbon or HFC gases which are non-ozone depleting but have high global warming potential.

Fiji ratified the Kigali Amendment in June and in doing so, reaffirmed its commitments under the Protocol and the global goal of the UN Framework Convention on Climate Change.

Director Environment Sandeep Singh says Fiji is committed to stabilizing greenhouse gases to a level that will prevent dangerous interference with the climate.

These issues were highlighted during a two-day Enforcement Officers training on managing and monitoring ozone-depleting substances in Nadi.

Officers were taught how to check imports and exports for items containing ozone-depleting substances, such as air-conditioning units.

[FBC News, 28 October 2020, By Ritika Pratap](#)

11. Department of Environment and Natural Resources warns households against use of disinfectants with HFCs (Philippines)



As disinfectants become one of the most in-demand products in the market due to the coronavirus pandemic, Department of Environment and Natural Resources (DENR) Secretary Roy Cimatu has aired its warning to Filipino households against the use of disinfectants containing hydrofluorocarbons (HFCs), which are considered the fastest growing greenhouse gases (GHG) that contribute significantly to climate change.

Aside from disinfectants, HFCs are also used in hair sprays, deodorants, and insecticides to act as propellant.

“By choosing not to buy products containing HFCs, consumers will be reducing GHG levels and sending a message to companies not to continue to use the propellant in their products,” Cimatu said.

The DENR chief issued the statement in support of the awareness-raising efforts of its Environmental Management Bureau, through the Philippine Ozone Desk (POD).

POD facilitates and coordinates projects and policies on the phaseout of ozone-depleting substances (ODS) pursuant to the country’s commitment to the Montreal Protocol on Substances that Deplete the Ozone Layer and the Kigali Amendment to the Montreal Protocol.

The Kigali Amendment is an international agreement to gradually reduce the consumption and production of HFCs, which replaced the ozone-destroying chlorofluorocarbons (CFCs) previously used in air conditioners and refrigerants.

However, HFCs were later found to be powerful GHG that can be hundreds to thousands of times more potent than carbon dioxide in contributing to climate change per unit of mass.

POD public awareness officer Joylan Nephi Babia said that while most of the aerosols available in the market today are free from ODS, some products still use the alternative HFCs which contribute to global warming.

Babia warned that HFCs have “high or very high” global warming potentials ranging from 12 to 14,800.

He cited in particular HFC 134a used as propellant in disinfectant sprays, which has a “global warming potential of 1,300 on a 100-year time scale.”

“While HFCs are not ODS, HFCs are known to aggravate global warming,” Babia said as he urged consumers to look closely at the labels of disinfectant sprays they will buy, and “as much as possible, use these products sparingly.”

He also advised consumers to use instead disinfectant sprays that use either LPG or hydrocarbons such as propane, butane, and isobutane as propellant, saying these are more environment-friendly having low global warming potentials.

Since HFCs are vital alternative to CFCs, they cannot be removed from the market immediately.

[Manila Bulletin, 27 October 2020, By Ellalyn De Vera-Ruiz](#)

12. India bans split air conditioner imports

The Indian government has banned the import of split system air conditioners and self-contained units, including window units in a bid to boost domestic production.

The notification issued by the Directorate General of Foreign Trade (DGFT) on Thursday bans the import of units “with refrigerant” for shipments with shipment codes HS 84151010 and 84151090. These refer to units of a kind designed to be fixed to a window, wall, ceiling or floor, self-contained or split-system.

To be published in the Gazette of India Extraordinary Part-II, Section-3, Sub-Section (II)
Government of India
Ministry of Commerce & Industry
Department of Commerce
Directorate General of Foreign Trade

Notification No. 41/2015-2020
New Delhi, Dated: 15 October, 2020


Subject: Amendment in import policy of items under ITC HS Codes 84151010 and 84151090 of Chapter 84 of ITC (HS), 2017, Schedule – I (Import Policy).

S.O.(E): In exercise of powers conferred by Section 3 of FT (D&R) Act, 1992, read with paragraph 1.02 and 2.01 of the Foreign Trade Policy, 2015-2020, as amended from time to time, the Central Government hereby amends the Import Policy of items under ITC HS Code 84151010 and 84151090 of Chapter 84 of ITC (HS), 2017, Schedule – I (Import Policy).

ITC HS Code	Item Description	Present Policy	Revised Policy	Revised Policy Condition
84151010	Split System	Free	Prohibited	Only import of Air Conditioners with refrigerants is 'Prohibited'
84151090	Other	Free	Prohibited	Only import of Air Conditioners with refrigerants is 'Prohibited'

3. **Effect of the Notification:** Import Policy of Air Conditioners with refrigerants under HS codes 84151010 and 84151090 is amended from 'Free' to 'Prohibited'.

This issues with the approval of Minister of Commerce & Industry.


15/10/2020
(Amit Yadav)
Director General of Foreign Trade &
Ex- officio Addl. Secretary to the Government of India

(File No. 01/89/180/23/AM-20/PC-2[A]/E-23395)

The population of India is still relatively poor, with only around 5% of households owning an air conditioner. However, with changing lifestyle, increased urbanisation, better power supply and rising wealth, the Indian market is expected to increase substantially from its current level of around 4 million units per year.

While air conditioning imports into India are thought to stand at around 30%, the ban is unlikely to affect the major foreign players. Daikin, LG, Johnson Controls Hitachi, Samsung,

Carrier Midea, Panasonic and others already have factories in the country, competing alongside major Indian manufacturers like Blue Star and Voltas.

[CoolingPost, 17 October 2020](#)

NORTH AMERICA

13. US EPA protection of stratospheric ozone: Determination 36 for Significant New Alternatives

The Director of the Office of Atmospheric Programs signed the following document on October 21, 2020, and the Agency is submitting it for publication in the Federal Register (FR). [...]

SUMMARY: This determination of acceptability expands the list of acceptable substitutes pursuant to the U.S. Environmental Protection Agency's (EPA) Significant New Alternatives Policy (SNAP) program. This action lists as acceptable additional substitutes for use in the refrigeration and air conditioning, foam blowing, and fire suppression sectors. [...]

I. Listing of New Acceptable Substitutes

This action is listing as acceptable additional substitutes for use in the refrigeration and air conditioning, foam blowing, and fire suppression sectors. This action presents EPA's most recent decision to list as acceptable several substitutes in different SNAP end-uses. New substitutes are:

- Hydrochlorofluoroolefin (HCFO)-1233zd(E) in industrial process refrigeration (new and retrofit equipment);
- R-515B in centrifugal and positive displacement chillers and industrial process air conditioning (new equipment);
- Blends of 10 to 99 percent by weight hydrofluoroolefin (HFO)-1336mzz(Z) and the remainder hydrofluorocarbon (HFC)-152a in polystyrene: extruded board stock and billet;
- HFO-1336mzz(E) in a number of foam blowing end-uses;
- Methylal in rigid polyurethane (PU) spray foam (high-pressure two-component, low pressure two-component, and one-component foam sealants); and
- HCFO-1233zd(E)/C6-perfluoroketone blend in total flooding fire suppression (normally occupied and unoccupied spaces).

EPA's review of certain substitutes listed in this document is pending for other uses.

Listing decisions in the end-uses and applications in this document do not prejudice EPA's listings of these substitutes for other end-uses. The substitutes being added through this action to the acceptable lists for specific end-uses have a similar or lower risk than other substitutes already listed as acceptable in those end-uses. However, certain substitutes

The Director of the Office of Atmospheric Programs signed the following document on October 21, 2020, and the Agency is submitting it for publication in the Federal Register (FR). While we have taken steps to ensure the accuracy of this Internet version of the document, it is not the official version. Please refer to the official version in a forthcoming FR publication, which will appear on the Government Printing Office's GPO website.
<https://www.epa.gov/office-atmospheric-programs> and on Regulations.gov (<https://www.regulations.gov>) in Docket No. EPA-HQ-OAR-2003-0118. Once the official version of this document is published in the FR, this version will be removed from the Internet and replaced with a link to the official version.

ENVIRONMENTAL PROTECTION AGENCY 6500-50-2

40 CFR Part 82

[EPA-HQ-OAR-2003-0118; FRL-10036-19-OAR]

RIN 2060-AG12

[Protection of Stratospheric Ozone: Determination 36 for Significant New Alternatives](#)

Policy Program

AGENCY: Environmental Protection Agency (EPA).

ACTION: Determination of acceptability.

SUMMARY: This determination of acceptability expands the list of acceptable substitutes pursuant to the U.S. Environmental Protection Agency's (EPA) Significant New Alternatives Policy (SNAP) program. This action lists as acceptable additional substitutes for use in the refrigeration and air conditioning, foam blowing, and fire suppression sectors.

DATES: This determination is applicable on [insert date of publication in the Federal Register].

ADDRESSES: The EPA established a docket for this action under Docket ID No. EPA-HQ-OAR-2003-0118 (continuation of Air Docket A-91-42). All electronic documents in the docket are listed in the index at www.regulations.gov. Although listed in the index, some information is not publicly available, i.e., Confidential Business Information (CBI) or other information whose

may have a higher overall risk than certain other substitutes already listed as acceptable or acceptable subject to restrictions. In such cases, those already-listed alternatives have not yet proved feasible in those specific end-uses to date.

For additional information on SNAP, visit the SNAP portion of EPA's Ozone Layer Protection website at: www.epa.gov/snap. Copies of the full lists of acceptable substitutes for ozone-depleting substances (ODS) in all industrial sectors are available at www.epa.gov/snap/substitutes-sector. [...]

[The US Environmental Protection Agency \(EPA\), 21 October 2020](#)

14. First-of-its-kind Study compares costs of natural & low-GWP refrigerant systems

As food retailers in the US face growing refrigerant regulations, the need for tools and resources that provide clarity on the cost of natural and low global warming potential (GWP) refrigerant technologies is becoming increasingly apparent. A new study comparing the upfront and ongoing costs of various natural and low-GWP refrigerant systems has provided a first-of-its-kind resource that could help build a pathway towards that clarity for retailers.



Authored by DC Engineering - an engineering design firm based in Meridian, Idaho – the study was commissioned by a national chain grocer and aimed to equip the grocer to make informed system selection decisions. The grocer chose to remain anonymous but agreed to make the study results public.

“This study is a great example of the kind of transparent and comprehensive cost comparison food retailers are looking for,” said Danielle Wright, executive director of NASRC [the North American Sustainable Refrigeration Council]. “As regulatory pressures increase, retailers need more tools like this to effectively compare their options.”

“With the ever-changing tapestry of refrigerant compliance issues, we have found end-users need clear, fact-based guidance on the most suitable system for their long-term operational success,” said Glenn Barrett, engineering manager at DC Engineering. “Both the first cost and lifecycle costs of different system designs are heavily impacted by the system options and features utilized. Providing a baseline of the client’s key parameters, and then adhering to those parameters, is imperative to achieving a meaningful comparison.”

The study compared both the upfront costs of installation and ongoing cost of energy for four different refrigeration system designs serving a 40,000 square foot market with a 900 MBH load. The baseline design was a 3-rack system using R-448A, which was compared to three other system designs:

- A CO₂ transcritical system utilizing a single rack and an adiabatic gas cooler
- A micro-distributed system using R-448A and utilizing an adiabatic fluid cooler and a hydronic loop for heat rejection

- A micro-macro-distributed system using R-290 for standardized cases and CO₂ for specialty cases and utilizing an adiabatic fluid cooler and a hydronic loop for heat rejection

To obtain competitive installation pricing, the four system designs were bid across five regions using multiple contractors and OEMs. As a result, over 50 competitive bids were reviewed to analyze first costs. The bids were averaged to compare the variation of the case, equipment, and installation costs across each of the four system designs. Overall, the CO₂ transcritical design resulted in the lowest first cost, even when compared to the baseline HFC system.

“It’s important to remember that this study reflects one retailer’s experience and is not necessarily representative of other retailers,” said Wright. “We’ve heard from a number of our retailer members that they are still experiencing significant cost premiums for CO₂ transcritical systems.”

Energy performance was also modeled for each of the four system designs using a combination of Pack Calculation Pro, Excel, and other tools. Weather data was incorporated from each of the five regions and all system loads were kept constant for the purpose of comparison. The results reflected energy penalties in every region for all alternative system types, ranging from 9% to 122% above the HFC baseline system.

“It was very interesting to see how energy use differed between the various real world, commercially available, designs,” said Barrett. “It was particularly interesting – and encouraging – to see how the thermodynamic efficiency advantages of natural refrigerant solutions played out when compared to a very efficient HFC, multiple suction group, rack design using industry best practices. The study substantiated our view that natural refrigerant designs are both viable and varied to meet most any facility conditions but can indeed be improved to maximize energy efficiency.”

This study is an important first step towards providing retailers the tools they need to effectively compare their options. Looking ahead, NASRC plans to build on this study to incorporate additional system types and baseline assumptions, as well as energy performance data from the field.

“Our hope is that this study will serve as an important blueprint that can be expanded to include other system designs and field data,” said Wright. “NASRC’s goal is to help coordinate that expansion to drive more clarity for retailers.”

[Click here](#) to read the full report.

[The North American Sustainable Refrigeration Council \(NASRC\), 27 October 2020](#)

FEATURED



Ozone for life: 35 years of ozone layer protection

World Ozone Day, held on September 16, the world celebrates 35 years of the Vienna Convention and 35 years of global ozone layer protection.

[Learn more](#)

[Overview for the meetings of the ozone treaties in 2020-2021](#)

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

Recent Meetings:

- [42nd Meeting of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer \(OEWG 42\)](#), 14-16 July 2020 | Online
- [31st 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
- [63rd Meeting of the Implementation Committee under the Non-Compliance Procedure of the Montreal Protocol](#), 2 November 2019, Rome, Italy



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](#)

Provisional agenda of the 85th meeting of the Executive Committee

The Eighty-fifth Meeting of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol, has been postponed due to the coronavirus disease (COVID-19).

The 85th meeting has been postponed until immediately after the 42nd meeting of the Open-ended Working Group (OEWG), and will be held in Montreal for a duration of four days, from 19 to 22 July 2020, on the understanding that the meeting might be further postponed or cancelled in light of the evolution of the COVID-19 pandemic.

[Provisional Agenda](#)



[The Multilateral Fund for the Implementation of the Montreal Protocol, April 2020](#)

Click [here](#) for the Executive Committee upcoming and past Meetings.

Recent meetings:

- [84th meeting of the Executive Committee](#)
- [83rd meeting of the Executive Committee](#)
- [82nd meeting of the Executive Committee](#)
- [Executive Committee Primer – 2019](#) - An introduction to the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol



[OZONACTION](#)

Your National Ozone Officer,

On behalf of the United Nations Environment Programme (UNEP) OzonAction, I would like to express our deep appreciation to your country for its continued high-level commitment to implement the Montreal Protocol on Substances that Deplete the Ozone Layer, including during this challenging time such as what the world is now facing with the COVID-19 pandemic.

I want to re-assure you that during this very difficult period, OzonAction's Compliance Assistance Programme (CAP) – like the rest of UNEP – remains open for business. Our CAP teams in Bangkok, Manama, Nairobi, Panama City, and Paris continue to work with great dedication and diligence to support Article 5 countries with meeting their compliance, reporting and project-related needs. Our internal processes are all functioning well, including those related to finance and administration. Our CAP teams continue to provide technical and project support. Our programme obligations, namely national reviews, are still ongoing and our monitoring mechanisms are still operating and available to support your work.

The COVID-19 pandemic and social distancing requirements, a number of our Regional Networks and Technical Working Groups have been postponed. We assure that the CAP teams are working as diligently as possible to complete this together and to schedule all implementation activities at the earliest opportunity. In the meantime, our Regional Coordinators are continuing with the National Network activities to promote awareness of ozone and ozone-related issues. Contact Officers.

Just like you and your colleagues, our CAP teams have had to adjust both their personal lives and work arrangements to meet these new conditions. All of our staff are now working remotely through a homebased arrangement, ensuring the continued delivery of support to your countries. There are no exceptions with work either in Paris and in UNEP headquarters through video conferencing, email and phone. There are all online and available for communication with all National Ozone Units.

Since 1988, UNEP OzonAction has been your close partner in the implementation of the Montreal Protocol and we look forward to our close partnership in the future. We will continue to work together with you and your country's implementation partners who will continue to work together to meet the challenges ahead.

OzonAction is here to support you, if you have any needs, challenges, or if you need us to share your situation, please reach out and contact the member of OzonAction, including the Regional CAP teams or contact:

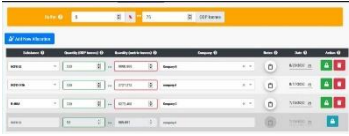
For safe and easy contact, your feedback and your valuable inputs:

Yours sincerely,
James S. Curlin
Acting Head, OzonAction

[COVID-19 pandemic: Letter from James S. Curlin, Acting Head, OzonAction, to the National Ozone Officers](#)

On behalf of the United Nations Environment Programme (UNEP) OzonAction, I would like to express our deep appreciation to your country for its continued high-level commitment to implement the Montreal Protocol on Substances that Deplete the Ozone Layer, including during very challenging times such as what the world is now facing with the COVID-19 pandemic. I would like to re-assure you that during this very difficult period, OzonAction's Compliance Assistance Programme (CAP) – like the rest of UNEP – remains open for business. Our CAP teams in Bangkok, Manama, Nairobi, Panama City, and Paris continue to work with great dedication and diligence to support Article 5 countries with meeting their compliance, reporting and project-related needs. Our internal processes are all functioning well, including those related to finance and administration. Our CAP teams continue to provide technical

and policy support. Our information clearinghouse, capacity building services, and refrigeration and air conditioning partnerships are still developing and distributing tools and information to support your work. [...] [Read/download](#)



HCFC Quota and Licence Tracker - UNEP OzonAction launches a new desktop application to assist with HCFC licences and quotas

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

To access the tools:

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

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

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



IIR and UNEP OzonAction release the French and Spanish versions of the ‘Cold Chain Technology Briefs’

As part of their cooperation to support the needs of different stakeholders in developing countries to fulfil their commitments under the Montreal Protocol, the International Institute of Refrigeration (IIR) and UNEP OzonAction today released the French and Spanish versions of their popular Technology Briefs on the Cold Chain. The original English versions are also available for download from the OzonAction website.

Download:

- [Cold Storage and Refrigerated Warehouse](#)
- [Commercial, Professional and Domestic](#)
- [Fishing Vessel Application](#)
- [Refrigeration in Food Production and Processing](#)
- [Transport Refrigeration](#)

The new updated OzonAction GWP-ODP Calculator Application

“Quickly, efficiently and accurately convert between values in metric tonnes, ODP tonnes and CO₂-equivalent tonnes”

Data are extremely important for the Montreal Protocol community, and the data reporting formats for both A7 and CP have changed recently, to a large degree triggered by the Kigali Amendment. HFCs, blends, CO₂-equivalent values, etc, now have to be addressed much more frequently by Ozone Officers during their daily work. Sometimes the terminology and values are complex and can be confusing, and it helps to have it all the official facts and figures in one place. Conversion formulas need to be applied to calculate CO₂-eq values from both GWP and metric tonne values. This free app from OzonAction is a practical tool for Ozone Officers to help demystify some of this process and put frequently-needed information at their fingertips.



What’s new in the app:

- An updated more user-friendly interface
- Multilingual interface: English, French and Spanish
- A new **Kigali Amendment mode** - in this mode the GWP values used to calculate the refrigerant blends/mixtures only include GWP contributions from components that are controlled HFCs

- Latest updated ODP and GWP values from the recent reports from the Montreal Protocol technology and scientific expert panels as well as the Intergovernmental Panel on Climate Change (IPCC) reports
- References added for sources of all values
- New refrigerant mixtures (with ASHRAE -approved refrigerant designations)

The new and updated UNEP OzonAction **GWP-ODP Calculator** application will help you to convert between values in metric tonnes, ozone depleting potential (ODP) tonnes and CO₂-equivalent tonnes of substances controlled by the Montreal Protocol and their alternatives.

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

Operation of the application is very simple — just select a substance from the dropdown list and enter the known value in the appropriate field; the calculator will automatically perform the conversion between metric tonnes, ODP tonnes and/or CO₂-equivalent tonnes and display the corresponding converted values. The ODP, GWP and information about the substance is provided. For mixtures, the components of the mixture and their relative proportions (metric, ODP, CO₂- equivalent tonnes) are also calculated.

The updated **GWP-ODP Calculator** application now includes a new Kigali Amendment mode. The app can now be used in two different modes: the regular "Actual Values" mode and the "Kigali Amendment" mode. In the Kigali Amendment mode, the GWP values provided are those specified in the Kigali Amendment to the Montreal Protocol, i.e. GWP values are only assigned to controlled HFCs. In this mode the GWP values used to calculate the refrigerant blends/mixtures only include GWP contributions from components that are controlled HFCs. The user can effortlessly switch between modes.

The OzonAction GWP-ODP Calculator uses standard ODP values and GWP values as specified in the text of the Montreal Protocol to make the conversions. Other ODP and GWP values from the recent reports of the Montreal Protocol Technology and Economic Assessment Panel and Scientific Assessment Panel as well as the Intergovernmental Panel on Climate Change (IPCC) are used when appropriate, with references to sources of all values used. The app includes new refrigerant mixtures (with ASHRAE- approved refrigerant designations).

This application is designed primarily for use by Montreal Protocol National Ozone Units and other related stakeholders. The application was produced by UN Environment Programme (UNEP) OzonAction as a tool principally for developing countries to assist them in meeting their reporting and other commitments under the Protocol and is part of the OzonAction work programme under the Multilateral Fund for the Implementation of the Montreal Protocol.

If you already have the application installed on your device, be sure to update to benefit from the new features. The app can be viewed in English, French or Spanish.

Using the application:



Smartphone Application: Just search for “GWP-ODP Calculator” or UNEP in the Google Play store or use the QR code – free to download! If you already have the application installed on your device, be sure to update to benefit from the new features.



Desktop Application: GWP-ODP Calculator is also available online on the OzonAction [website](#)



Watch the new short introductory tutorial **video** on the GWP-ODP Calculator - available now on [YouTube](#)

Read/download the [flyer](#) for more information

RAC Technician Videos - Full length films!

OzonAction is very pleased to release two ‘full length’ videos for refrigeration and air-conditioning (RAC) sector servicing technicians: on 1) Techniques, Safety and Best Practice and 2) Flammable Refrigerant Safety.

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



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

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

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


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



You can watch these videos on the OzonAction YouTube Channel:

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

- [Flammable Refrigerant Safety](#)

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



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

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

The UNEP OzonAction WhatGas? application has been updated and improved

New features:

- An updated more user-friendly interface
- Multilingual interface: English, French and Spanish
- HFCs and HFC containing mixtures
- Latest updated ozone depleting potential and global warming potential values from the recent reports from the Montreal Protocol technology and scientific expert panels as well as the Intergovernmental Panel on Climate Change; as well as the standard ODP and GWP values as specified in the text of the Montreal Protocol
- References to sources of all values used
- New refrigerant mixtures (with ASHRAE approved refrigerant designations)
- Values for ‘actual GWP’ and ‘Kigali Amendment context’ GWP for pure substances and mixtures (i.e. only including GWP values/components assigned to controlled hydrofluorocarbons - HFCs).



The WhatGas? application is an information and identification tool for refrigerant gases: ozone depleting substances (ODS), HFCs and other alternatives. It is intended to provide a number of stakeholders, including Montreal Protocol National Ozone Officers, customs officers, and refrigeration and air-conditioning technicians with a modern, easy-to-use tool that can be accessed via mobile devices or the OzonAction website to facilitate work in the field, when dealing with or inspecting ODS and alternatives, and as a useful reference tool. If the user requires additional information or assistance in identifying a refrigerant gas they are inspecting or that is described in the relevant paperwork, this can be easily obtained by consulting the application.

Using the application:

If you already have the application installed on your device, be sure to update to benefit from the new features.

Smartphone Application: Just search for “WhatGas?” or UNEP in the Google Play store or use the QR code – free to download!



Desktop Application: WhatGas? is also available online on the OzonAction [website](#)

For more information: Watch the new short introductory tutorial [video](#) on WhatGas? available on [YouTube](#)

See/download the [WhatGas? flyer](#)

Over 10,000 installations on Android and iOS devices to date!

Refrigerant Cylinder Colours: What has Changed

A new UNEP OzonAction factsheet on the new AHRI revised guideline on a major change to refrigerant cylinder colours

One of the ways in which refrigeration cylinders are quickly identified is by cylinder colour. Although there was never a truly globally-adopted international standard, the guideline from the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) although not required by law was used by the vast majority of industry and chemical producers around the world. This guideline was intended to support manufacturers, engineers, installers, contractors and users, and was also widely used by customs and enforcement officers and National Ozone Officers (NOOs) to help identify the contents of cylinders.

In recent years, the number of refrigerants has dramatically increased, particularly as chemical producers continue to develop numerous new refrigerant mixtures for various applications. This fast-rising number of refrigerants created some concern since as more and more colours were used, the potential for misidentification of cylinders of similar colours increased. It was therefore decided by AHRI that for the benefit of the industry the guideline should be updated. This was to ensure continuation of correct identification and safe use of refrigerants based on clear and distinct product markings and labels. The revised guideline, first published in 2015, removes paint colour assignments for refrigerant containers and specifies that all refrigerant containers should have the same paint colour from 2020 onwards. This colour is a light green/grey, called "silk grey" (RAL 7044⁴). This guideline also provides a means by which colours can be assigned to printed materials, such as printed labels on refrigerant containers; these colours generally follow the familiar AHRI colours previously used for refrigerants.

It is very important that the range of stakeholders in the refrigeration and air-conditioning industry as well as NOOs and customs and enforcement personnel are aware of this change. **Cylinder colours can no longer be relied on as a means to identify the type of refrigerant in a container.** The principal method of cylinder identification now needs to be the container labels and markings. It is important to note that **flammable refrigerants** should include a red band on the top of the cylinder.



NOOs and technicians should be aware of this change and inform national stakeholders, as well as familiarising themselves with relevant container labels and markings for refrigerants. It will be important to inform and train customs officers of this change as colour codes have always been a helpful way to identify refrigerants. Given the possibility of mislabelled or counterfeit refrigerants in cases of doubt/suspicion, it is recommended to verify the type of refrigerant using a refrigerant identifier

For more information read/download the [factsheet](#)

Update on new refrigerants designations and safety classifications

The latest version of the factsheet providing up to date information on refrigerant designations and safety classifications is now available (April 2020 update).

The factsheet, produced by [ASHRAE](#) in cooperation with [UN Environment Programme OzonAction](#) is updated every 6 months.

The purpose is to provide an update on ASHRAE standards for refrigerants and to introduce the new refrigerants that have been awarded an “R” number (or ASHRAE designation) over the last few years and which have been introduced into the international market.

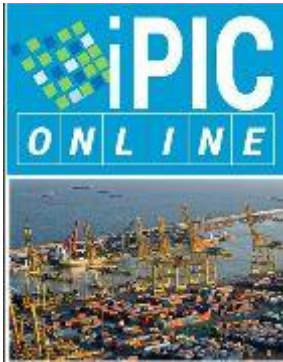
Read/download the [factsheet](#)

The factsheet, as well as more information on ASHRAE-UNEP joint activities and tools, is also available on the [ASHRAE UNEP Portal](#).

Contact:

- [Ayman Eltalouny](#), OzonAction, UN Environment Programme
- [W. Stephen Comstock](#), Manager of Business Development EMEA, ASHRAE





OzonAction's iPIC system helps prevent an illegal shipment of 72 tonnes of HCFC-22

Collaboration between China and Thailand using OzonAction's informal Prior Informed Consent (iPIC) system has resulted in the prevention of a huge consignment of ozone-depleting and climate damaging hydrochlorofluorocarbons (HCFCs). Those chemicals, which are primarily used as refrigerants for air conditioners and fridges, are controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer and are being phased out by all countries according to a specific timeline.



The OzonAction new iPIC platform - The Informal Prior informed consent system (iPIC) has been completely overhauled and updated - *OzonAction 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. See the [iPIC flyer](#) for more details - Visit [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.



[Servicing tail for HCFCs: What is it & why does it matter?](#)

This concept of a servicing tail, while allowed under the Montreal Protocol might not always be consistent with the phase-out targets specified under the HCFC Phase out Management Plan (HPMP) funding agreements agreed by Article 5 countries with the Executive Committee when receiving funds for HCFC phase out, where countries are obliged to meet these targets as specified in the agreement.

Details and explanations are provided in this [Policy Brief](#).

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



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 in 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](#)

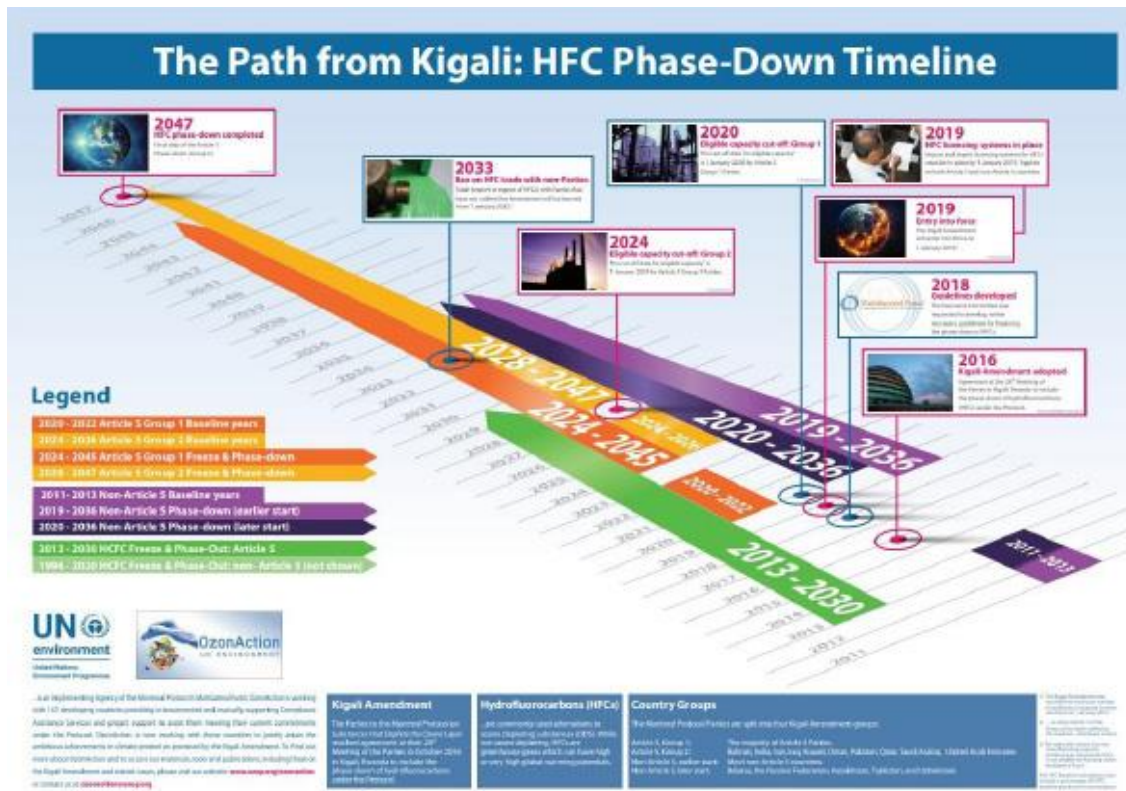
Contact: [Ezra Clark](#), UNEP, OzonAction



[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 Programme 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.

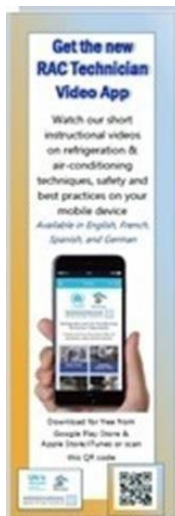
This new OzonAction video series consists of short instructional videos showing how to use and maintain a refrigerant identifier.

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



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.

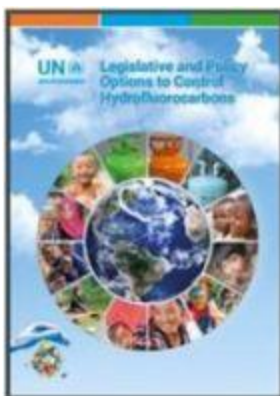
This application, consisting of short instructional videos on techniques, safety and best practice, serves as a complementary training tool for refrigeration and air-conditioning (RAC) sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training.

New videos on flammable refrigerants just added!

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

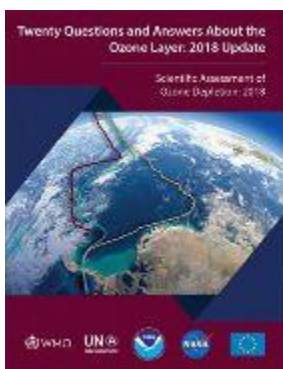
OzonAction Multimedia Video Application: Refrigeration and Air-conditioning Technician Video Series [Available in the Android Play Store](#) and [Apple Store/iTunes](#). (Just search for “OzonAction”, or scan this QR code)

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.



[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.

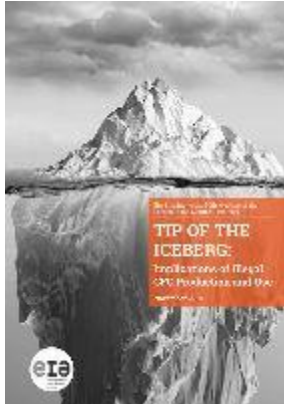
Access the International Dictionary of Refrigeration on the **[IIR website](#)**



[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](#)

[...] 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. [...]



[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



[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. 8 - 2020](#)

(in Italian language).



[Accelerate #110](#) features a cover story on Clean Cooling, a new approach to HVAC&R.



“[World Guide to Transcritical CO₂ Refrigeration](#)”, a free three-part resource looking at the global market penetration and potential of this natural refrigerant technology. As the use of transcritical CO₂ refrigeration systems increase at an exponential rate around the world, it has become apparent that there is a great need for reliable information from a neutral source. The newly included Part 3 focusses on specific trends relating to industrial applications and on the global transcritical CO₂ market in the future. It includes survey information, partner case studies and interviews, and “thought leader interviews” with important individuals from the industry.

MISCELLANEOUS



I am in the Montreal Protocol Who's Who... Why Aren't You?

The United Nations Environment Programme, OzonAction, in collaboration with Marco Gonzalez and Stephen O. Andersen are updating and expanding the “**Montreal Protocol Who's Who**”.

We are pleased to invite you to submit your nomination*, and/or nominate Ozone Layer Champion(s). **The short profile should reflect the nominee's valuable work related to the Montreal Protocol and ozone layer protection.**

Please notify and nominate worthy candidates through the on-line form We look forward to receiving your

nomination(s), and please feel free to contact our team for any further assistance concerning your nomination.

Take this opportunity to raise the profile of women and men who made an important contribution to the Montreal Protocol success and ozone layer protection.

- View the «Montreal Protocol Who's Who» [Introductory video](#)
- Contact : [Samira Korban-de Gobert](#), UN Environment Programme, OzonAction

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

New International Journal of Refrigeration service for IIR members



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[Role of economic instruments for the sound management of chemicals and waste](#)

The Strategic Approach to International Chemicals Management (SAICM) is a global policy framework which aims to protect human health and the environment from the unsound management of chemicals and waste. A key obstacle that has been limiting SAICM's success at the national level has been the inability of stakeholders to secure adequate financial resources in their efforts to manage chemicals and waste safely throughout the entire value chain. In this context, this policy brief provides an overview of existing cost recovery mechanisms and economic policy instruments being used around the world today to mobilize resources and internalize some of the external costs arising from the unsound management of chemicals and waste.



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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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