

OzoNews

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

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GLOBAL

1. Kigali Amendment latest ratifications

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

[Angola, 16 November 2020](#)

[Eswatini, 24 November 2020](#)

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

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

[United Nations Treaty Collection](#)



2. Parties to the Montreal Protocol adjust to the COVID pandemic

2020 will be remembered for many things, but primarily for a virus that thrust the world into a global pandemic, creating an unprecedented health crisis, a stranglehold on world economies and social and welfare impacts we have yet to fully understand. The widespread impact of COVID-19 required organizations to undergo some radical rethinking of how to continue operating, not least the parties to the Montreal Protocol and the Ozone Secretariat.



Realizing that face-to-face meetings would be impossible, the Secretariat, on consultations with parties and other ozone stakeholders, was quick to implement a contingency plan for meetings scheduled for 2020. As a result, the forty-second Open-ended Working Group Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer and the combined twelfth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer (part I, part II would have to take place in 2021) and Thirty-Second Meeting of the Parties to the

Montreal Protocol on Substances that Deplete the Ozone Layer (COP12(I)/MOP32) would have to take place fully online.

However, simply deciding to hold the meetings online was not a straightforward solution. The Secretariat needed to ensure that all parties had full participatory access to the chosen platform and that any connectivity and internet issues were addressed well in advance. The year that also marked the 35th anniversary of the Vienna Convention was going to be crucial to get right for the online meetings of the Montreal Protocol and the Vienna Convention.

Key financial and operational decisions needed to be made in 2020. Without an agreement on the budgets of the Vienna Convention and Montreal Protocol Trust Funds for 2021, the Secretariat would not have had a budget to work with, but also critical-use nominations needed to be agreed on, and importantly, the Montreal Protocol's Multilateral Fund for the Implementation of the Montreal Protocol needed replenishing for the next triennium (2021-2023).

Under the constraints of an online meeting, in order for parties to be able to find consensus to the point of adopting decisions on these matters, the agenda had to be reduced and significant online preparatory work had to be carried out. In support of this, an online forum was created in which parties were able to scrutinize and comment on the report on the evaluation of the critical use nominations of the Methyl Bromide Technical Options Committee of the Technology and Economic Assessment Panel (TEAP) and on the budget documents prepared by the Secretariat in advance of the online meeting.

Online informal meetings on budgets were also convened by the co-chairs of the preparatory segment of the COP/MOP. The parties also consulted in their regional groups and bilaterally to prepare for making nominations to the Montreal Protocol bodies and to the TEAP for 2021. Without this significant preparatory work, it would not have been possible to advance the discussion smoothly and with minimal time at the COP/MOP itself.

The COP/MOP decided that the unspent budget balance from the current 2018-2020 triennium, could be rolled over for use in 2021, enabling the Fund to continue operating, pending a decision on the 2021-2023 replenishment later in 2021. Parties also agreed, among others, the critical-use exemptions, the Trust Fund budgets of the Vienna Convention and the Montreal Protocol, as well as on the membership of Montreal Protocol bodies for 2021 endorsing nominations put forward for the Implementation Committee, Executive Committee and the co-chairs of the Open-ended Working Group. Re-nominations for the membership of the TEAP's co-chairs were endorsed, with the terms for nominated Senior Experts limited to one year, pending a review at the next 2021 in-person meeting.

As per usual practice, prior to the COP/MOP, the meeting of the sixty-fifth Implementation Committee met, also online, to prepare draft decisions related to non-compliance under the Montreal Protocol which were also adopted by the MOP32. In addition, the parties and ozone stakeholders also had the opportunity to attend a total of 15 online side events held either side of the daily sessions. Comprising a range of different ozone-related topics, these virtual side events proved to be very popular, and were on average better attended than previous in-person events.

So, while 2020 turned out to be a challenging year on many levels, when it came to organizing meetings that had previously been face-to-face, the parties to the Montreal Protocol showed the world that it could adapt and adopt new working modalities to ensure that key issues were addressed online. As a result of the significant pre-meeting preparatory work and embracing a spirit of cooperation and consensus, the parties were able to adopt 14 decisions crucial to the ongoing work of the Montreal Protocol; making the COP12(I)/MOP32 the first UNEP-administered global environmental agreement to do so virtually and ensuring that the protection of the ozone layer continues. More so, the ozone family has shown once again that by adapting accordingly, it is possible to find solutions to what may seem at first to be an insurmountable problem.



Moving forward, the Secretariat sincerely hopes that the parties and ozone stakeholders can meet again in 2021 in person. Until then, we would like to wish you all a peaceful and healthy festive season, and all the best for 2021.

Megumi Seki, Acting Executive Secretary, [Ozone Secretariat](#), Invited article, December 2020

See also >>> [Summary of the Combined Twelfth Meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer \(Part I\) and Thirty-Second Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, 23-27 November 2020 | Online](#)

Download the report in [PDF](#) format / Visit IISD/ENB for [daily coverage](#) of this meeting

3. Multilateral Fund's post-COVID-19 recovery response



The COVID-19 pandemic has wreaked havoc on people's health and economic security around the world. The economic impact of lockdowns has left many developing countries vulnerable to further financial decline. Many of those countries are beneficiaries of the Multilateral Fund for the Implementation of the Montreal Protocol (referred to as Article 5 countries). Their continued efforts to restore the ozone layer, mitigate climate change and protect the environment are at risk.

COVID-19 has had an unprecedented adverse impact on the manufacturing and trade of a range of consumable products because of supply constraints and a fall in demand. Cooling applications are one example. Converting cooling applications to ozone- and climate- friendly technologies is a cornerstone of the work of the Multilateral Fund, which is expected to be temporarily undermined by the pandemic. Recovery will be slow, and it will take time before output and manufacturing can be brought back to pre-pandemic levels.

The Multilateral Fund recognizes the urgency of this moment and the role it can play in post-COVID-19 recovery measures to support the environmental protection efforts of Article 5 countries and to contribute to the economic sectors that rely on the substances needed for cooling applications like refrigeration and air-conditioning that are essential for human health and welfare.

In this context, the Multilateral Fund's response involves immediate action to reinforce its role of providing financial and technical assistance to Article 5 countries to sustain the implementation of their phase-out activities under the Montreal Protocol and to contribute to economic recovery post-COVID-19. The Executive Committee has given a high priority to the continued operations of the Fund by establishing an effective intersessional approval process that has provided over US \$35 million. The funds are being used for continued support to the national ozone units in implementing phase-out activities at the country level; for continued conversion of manufacturing lines, including refrigeration and air-conditioning manufacturing lines to low-to-zero global-warming-potential alternative technologies not relying on controlled substances; and for technical assistance to technicians so that they can apply better servicing practices and sustain their livelihood despite the downturn in the economy. This funding is expected to provide economic stimulus that will allow these small enterprises to remain in operation.

Much-needed international cooperation has continuously been provided through the Multilateral Fund to governments of Article 5 countries to support them in establishing policies that will support their recovery efforts, especially for sectors in which people's livelihoods are directly affected by the pandemic. The bilateral and implementing agencies of the Fund continue to identify near-term priorities and approaches for capacity-building, information exchange and implementing training projects in these countries despite the challenges of travel restrictions. Their efforts have resulted in innovative virtual on-line solutions ensuring that countries continue to be assisted during this time.

The Multilateral Fund will continue its work to heal and restore the ozone layer, which is protecting the planet from the side effects of excessive ultraviolet radiation, despite the challenges of the new reality created by the pandemic.

Convening of the 85th and 86th meetings

In light of the outbreak of the coronavirus disease (COVID-19), the Secretariat developed a contingency plan for conducting the 85th and 86th meetings of the Executive Committee ("contingency plan"), for consideration by the Executive Committee. Taking into account the evolving situation of the COVID-19 pandemic around the world, the contingency plan was revised and updated, accordingly. After giving due consideration to the latest updated contingency plan of 20 July 2020, and further to a consultation with the Chair and the Vice-Chair, the Executive Committee agreed:

(a) To hold its 85th and 86th meetings back to back from 8 to 12 March 2021, in Montreal, Canada, noting that:

(i) The 85th meeting would be a short meeting (up to two hours) to adopt a revised provisional agenda, to take note of Secretariat activities and the status of contributions and disbursements of the Multilateral Fund (as at 31 May 2020), and to adopt the draft report of the meeting, which will consist of those items approved under the intersessional approval process established for the 85th meeting;

(ii) The 86th meeting would commence immediately after the closure of the 85th meeting, and would address both the remaining agenda items from the 85th meeting, and all items of the 86th meeting;

(b) To implement an intersessional approval process (16 to 27 November 2020) for the 86th meeting for certain documents, reports and project proposals, through a password-protected forum under the Secretariat's meeting portal to collect comments and decisions from Executive Committee members, on an exceptional basis due to the COVID 19 pandemic and without setting a precedent;

(c) To organize virtual informal meetings for members of the Sub-group on the Production Sector;

(d) To include in the report of the 86th meeting, relevant information and decisions resulting from the intersessional approval process.

The Secretariat will continue doing its utmost to reduce to a minimum the impact on the operation of the Multilateral Fund in light of the COVID-19 pandemic.

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

4. K. Madhava Sarma & K. Ramalakshmi Montreal Protocol Science Champion Award

The K. Madhava Sarma and K. Ramalakshmi Montreal Protocol Science Champion Award is designed to promote science-based investigations to strengthen the Montreal Protocol. The award is sponsored by the [Institute for Governance & Sustainable Development](#) (IGSD), a non-governmental organization based in Washington, D.C., and Paris that works to promote just and sustainable societies and to protect the environment by advancing the understanding, development, and implementation of effective and accountable systems of governance for sustainable development.

The Award includes a US\$ 5,000 research stipend plus sponsorship of economy air travel and expenses to attend one of the week-long meetings of the Montreal Protocol where the findings of the sponsored work will be presented in a side event. These meetings include the Open Ended Working Group (OEWG), which is typically mid-year; the Meeting of the Parties (MOP) which is typically end-of-year; and the Ozone Research Managers Meeting (ORM), which is typically mid-year.

Nomination Deadline: 15 January 2021, with decision by 31 January 2021.

The screenshot shows the official announcement for the K. Madhava Sarma & K. Ramalakshmi Montreal Protocol Science Champion Award. The page is titled "K. Madhava Sarma & K. Ramalakshmi Montreal Protocol Science Champion Award" and is dated November 9, 2020. It describes the award's purpose, the sponsor (IGSD), and the prize details (US\$ 5,000 stipend and travel). It also lists the nomination deadline (15 January 2021) and the decision date (31 January 2021). The page includes sections for "Qualification" (eligible candidates must be a research scholar or higher and not be a member of the Montreal Protocol Executive Board), "Judging Criteria" (research must strengthen the Montreal Protocol with policy-relevant findings), and "Award Jury" (listing members like Professor Stephen O. Henderson, Dr. David Sarda, and others). The page concludes with contact information for the awarding manager at award@igsd.org.

Additional information on qualifications, judging criteria and downloadable application form available [here](#)

For questions and submission, contact [Giselle Gonzalez](#), Sarma & Ramalakshmi Fellowship Manager

AFRICA

5. Africa's clean cooling centre of excellence moves closer to boosting farmers livelihoods

The Rwandan Government has formally launched the new African Centre of Excellence for Sustainable Cooling and Cold Chain (ACES) that is hosted in-country by the University of Rwanda.

At the inception meeting, a high-level cross-department team was established to lead the Centre's development. In collaboration with the core technical partners – the University of Birmingham and UN Environment Programme's United for Efficiency (UNEP U4E) – progress in setting up the centre has quickened with the official endorsement of planned activities.



University of Rwanda site designated for ACES

ACES will help get farmers' produce to market quickly and efficiently – reducing food waste, boosting profits and creating jobs as well as look to improve cold-chains for vaccines and health, now recognised globally as a key challenge for Covid-19 immunisation.

ACES brings together multi-disciplinary UK and in-country expertise with commercial partners to develop and demonstrate ways of delivering affordable lowest carbon emissions cooling and cold-chain systems while meeting Africa's social and economic cooling needs. Associated "Living Labs" will conduct state-of-the-art research and offer technical assistance, demonstrations and knowledge transfer. The first Living Lab is anticipated in rural Rwanda, with others to follow in additional countries.

Dr. Mujawamariya Jeanne d'Arc, Rwanda Minister of Environment, commented: "*The Rwanda Cooling Initiative with UNEP U4E has assisted the development of National Cooling Strategy in 2019 and it is now providing the foundation for ACES, which will bring together talent from across Africa to develop and deploy world-class cooling solutions. The Rwandan government supports the establishment of the Centre with our partners over the months and years ahead.*"

Researchers from the University of Birmingham, Cranfield University, London South Bank University and Heriot Watt University are applying their expertise with rural cooling and

cold-chain, backed by funding from the UK Department for Environment, Food and Rural Affairs (Defra).

The project's first cooling needs and gap assessment report is nearing completion, after in-country interviews with representatives from agricultural co-operatives and communities across Rwanda, as well as key Ministries, private companies and NGOs. With analysis of energy consumption and sources, food and value losses, facilities and equipment, refrigerants and cold chain demand, the report will help guide the design of ACES. [...]

[United for Efficiency, 8 December 2020](#)

6. Un séminaire sur l'élimination des substances appauvrissant la couche d'ozone - Côte d'Ivoire

Un séminaire relatif à l'élimination des substances appauvrissant la couche d'ozone organisé, lundi 7 décembre 2020, à Bondoukou (Nord-est, région du Gontougo), à l'initiative du ministère de l'Environnement et du Développement durable.

Ce séminaire, qui s'achèvera vendredi [11 décembre], est destiné aux agents de douanes, de la Police, Gendarmerie, Eaux et Forêts et aux contrôleurs du ministère du Commerce, techniciens de froid sur les technologies nouvelles de la réfrigération et de la climatisation.

Il vise à leur donner des rudiments nécessaires pour l'élimination, en Côte d'Ivoire et dans le Gontougo en particulier, de la consommation des substances qui appauvrissent la couche d'ozone et l'atteinte de la réduction de la consommation des Hydrochlorofluorocarbone (HCFC) de 100% au 1er janvier 2030. [...]

Ce séminaire s'inscrit dans le cadre de l'application du Protocole de Montréal relatif à des substances qui appauvrissent la couche d'ozone, ratifié par la Côte d'Ivoire le 30 novembre 1992.

[Abidjan Net, 8 décembre 2020](#)



LATIN AMERICA AND CARIBBEAN

7. Cursos de capacitación en materia de hidrocarburos y sistemas de refrigeración - México

Se impartirán cursos sobre reducción de gases que afectan la capa de ozono; también se dotará de equipo a los laboratorios de los planteles.



Las Secretarías de Educación Pública (SEP) y de Medio Ambiente y Recursos Naturales (Semarnat) firmaron un convenio de colaboración, por tres años, para impartir cursos de capacitación en materia de hidrocarburos y sistemas de refrigeración en Centros Tecnológicos del Mar (CETmar).

Se acordó la entrega de equipo y herramientas para los laboratorios de los cinco CETmar beneficiados, que se ubican en Campeche, Baja California Sur, Veracruz y Chiapas, detalló la SEP en un comunicado.

La representación de la Semarnat informó que la dependencia impartirá los cursos sobre la eliminación del consumo de los hidrofluorocarbonos, que forma parte del compromiso de México con el Protocolo Montreal para reducir y eliminar los gases de efecto invernadero.

En el programa colaborativo, en el que participarán técnicos en refrigeración y aire acondicionado, se prevé la capacitación de 20 nuevos instructores que, posteriormente, formarán parte de la red de profesores que impartirán los cursos de buenas prácticas.

Además, prevén lograr la capacitación de dos mil técnicos en el sector, así como la entrega en donación de 500 juegos de equipos y herramientas a los técnicos capacitados para que apliquen las buenas prácticas y eliminen el consumo de las sustancias agotadoras de la capa ozono.

El subsecretario de Educación Media Superior, Juan Pablo Arroyo Ortiz, indicó que se debe capacitar a productores y personas que desean encontrar en la explotación primaria una forma de vida.

En ese sentido, añadió que los alumnos de los planteles beneficiados deben entender que la ciencia es compleja, que no es lineal ni de conceptos separados que después se olvidan.

“Hay que entender cómo funcionan las cosas y después investigar por qué funcionan y preguntarse las grandes dudas que tiene el hombre, para poder entender la naturaleza”, refirió.

También sostuvo que el convenio de colaboración entre la SEP y la Semarnat aporta mejor capacitación a los jóvenes en una asesoría técnica, al mismo tiempo que brinda una perspectiva de vida, ayudando al cuidado del ambiente y al desarrollo de una vida sana en sociedad.

[24 Horas, 13 diciembre 2020](#)

Leer también >>> Gobierno de México, Secretaría de Educación Pública, **[Boletín No. 321](#)** "Firman SEP y Semarnat acuerdo para capacitar alumnos y docentes de Centros

Tecnológicos del Mar".

Relacionados [Fotografías](#) y [Video](#)

8. Así funciona el Distrito Térmico que ahora extenderá sus redes de aire acondicionado limpio - Colombia

En medio de talleres y almacenes de repuestos, un edificio se destaca entre los otros y rompe la monotonía del paisaje en el sector de La Bayadera, en el centro de Medellín. Aunque no es muy elevado, sobresale por su diseño, con plantas que cuelgan desde su terraza y amplias aceras. Aunque realmente, su potencial está en su interior.



Desde allí salen hoy algo más de tres kilómetros de tubería subterránea que conduce agua fría hacia varios edificios. Al tiempo, recoge el agua que se calienta durante el proceso de generación de aire acondicionado. Así, de manera sencilla y limpia, funciona el Distrito Térmico La Alpujarra, sobre el cual se empezó a pensar en 2012, cuando el sistema de refrigeración o aire acondicionado de los edificios de la Alcaldía de Medellín y la Gobernación de Antioquia se estaba quedando obsoleto y ya no cumplía con los parámetros ambientales.

“El Ministerio de Ambiente, a través de la Unidad Técnica de Ozono, planteó entregar un dinero para hacer ese cambio, entonces EPM intervino con la propuesta de hacer un sistema diferente, con la centralización de la producción de agua fría en un solo edificio y no con la instalación de un chiller (equipos de enfriamiento de agua para aire acondicionado) en cada edificio”, recuerda Juan Carlos Gómez Calle, gerente de Gas de EPM para la región metropolitana.

La idea de EPM caló en las entidades locales y en el Ministerio, pues además de significar una reducción de gastos en mantenimiento, también representaba una mejora de las condiciones ambientales. [...]

Como la generación del Distrito Térmico es de 3.600 toneladas de refrigeración, aún tiene capacidad para atender a otros clientes. Por eso, ya se construyeron otros 1.200 metros de tubería (600 de agua fría y 600 de agua caliente) para que a comienzos de 2021 el servicio llegue a la sede principal de EPM, a Plaza Mayor y al Museo del Agua.

“Frente a otros sistemas, estamos eliminando hasta el 100 % de sustancias agotadoras de la capa de ozono que se usan para el enfriamiento, porque nosotros utilizamos amoníaco que, por ser natural, no genera este tipo de afectación. Y también reducimos hasta en un 30 % los gases de efecto invernadero”, explica Juan Carlos Gómez. [...]

[Centrópolis, 9 diciembre 2020](#)

NORTH AMERICA

9. California introduces first-in-nation rules to reduce climate “super pollutants” from commercial refrigeration, air conditioning equipment

The California Air Resources Board recently approved first-in-the-nation [rules](#) to curb the impact of hydrofluorocarbon (HFC) refrigerants. HFCs are synthetic gases that are used in a variety of applications, but mainly to replace ozone-depleting substances in aerosols, foams, refrigeration and air-conditioning.

HFCs are considered to be super pollutants because they trap heat in the atmosphere thousands of times more effectively than carbon dioxide, the most prevalent greenhouse gas.

California is required to reduce HFC emissions 40% below 2013 levels by 2030 under Senate Bill 1383. The regulations approved by CARB are the most comprehensive of their kind in the world.

The new rules affect commercial and industrial, stationary refrigeration units, such as those used by large grocery stores, as well as commercial and residential air conditioning units. This equipment often leaks refrigerants over time. In other cases, emissions are released when the equipment is dismantled and destroyed at the end of its useful life.

CARB estimates the regulations will achieve annual reductions by approximately 3.2 million metric tons of GHGs in 2030 and, with a cumulative reduction of more than 62 million metric tons by 2040, the equivalent of taking more than 12 million cars off the road.

Prior to 2018, California was the only state that regulated HFCs. Sixteen other states have now passed legislation, based on California’s rules, or are in the process of doing so.

The new rules signal the beginning of the first refrigerant recycling program to put responsibility for compliance with manufacturers. CARB will now move forward immediately with a new rulemaking limiting purchase or use of new high-global warming potential (GWP) refrigerant, and a partnership with other states and the federal government to design a national program. California will then work towards 100% refrigerant recovery and recycling.

Technology exists that makes it possible for new facilities to use refrigerants with very low-GWP today, such as carbon dioxide or ammonia. Additionally, the next generation of synthetic refrigerants with lower GWPs are under rapid development. Starting in 2022, new facilities will be required to use refrigerants that can reduce their emissions by up to 90%. The intent of the new rules is to eliminate the use of very high-GWP refrigerants in every sector that uses non-residential refrigeration systems. Compliance begins for most home air conditioning equipment in 2025.

California introduces groundbreaking program to reduce climate “super pollutants”
Landmark regulation addresses commercial refrigeration, air conditioning equipment

DATE December 10, 2020	DESCRIPTION Today the California Air Resources Board approved landmark rules to curb the impact of powerful artificial refrigerants that pose a growing danger globally to efforts to contain the severe impacts of climate change.
RELEASE NUMBER 20-20	The refrigerants, known as hydrofluorocarbons or HFCs, are considered to be super pollutants because they trap heat in the atmosphere thousands of times more effectively than carbon dioxide, the most prevalent greenhouse gas. These new rules serve as a national model for super pollutant reduction.
CONTACTS Cleve Czapiga Office of Communications cleveland@carb.ca.gov (916) 717-0602	“Chemical refrigerants are top-emitting super pollutants and the fastest growing source of climate gases in the world today,” said CARB Chair Holly C. Wilshire. “And as the earth grows warmer, people will need to cool their homes and their buildings even more than we do today. We need safer alternatives to be deployed as fast as possible.”
CATEGORIES Topics: Climate Change Programs: Stationary Hydrofluorocarbon Reduction Initiatives: Refrigerant Management Program	California is required to reduce HFC emissions 40 percent below 2013 levels by 2030 under Senate Bill 1383. The regulations approved by CARB today are the most comprehensive of their kind in the world, and will help, in the long run, to curb global warming.

These rules will contribute to meeting the goal of carbon neutrality. CARB estimates the regulations will achieve annual reductions by approximately 3.2 million metric tons of GHGs in 2030 and, with a cumulative reduction of more than 62 million metric tons by 2040, the equivalent of taking more than 12 million cars off the road. Potential benefits in avoided climate impacts could cover more than 37 billion through 2040.

Prior to 2018, California was the only state that regulated HFCs. Sixteen other states have now passed legislation, based on California’s rules, or are in the process of doing so.

The rules approved today also signal the beginning of the first refrigerant recycling program to put responsibility for compliance with manufacturers. The recycling will help decrease an avoidable global program that can serve as a national model. CARB will now move forward immediately with a new rulemaking limiting purchase or use of new high-global warming potential (GWP) refrigerants, and a partnership with other states and the federal government to design a national program. California will then work towards 100 percent refrigerant recovery and recycling.

Technology exists that makes it possible for new facilities to use refrigerants with very low-GWP today, such as carbon dioxide or ammonia. Additionally, the next generation of synthetic refrigerants with lower GWPs are under rapid development. Starting in 2022, new facilities will be required to use refrigerants that can reduce their emissions by up to 90%. The intent of the new rules is to eliminate the use of very high-GWP refrigerants in every sector that uses non-residential refrigeration systems. Compliance begins for most home air conditioning equipment in 2025.

EUROPE & CENTRAL ASIA

10. New report identifies a 0.4Mt CO₂e emissions reduction in 2025 from efficiency gains and NatRef adoption

A new public report by the EU-funded Refrigerants, Naturally! for LIFE (RefNat4LIFE) project has identified considerable GHG emissions savings for small food retailers in Europe that adopt natural refrigerants and energy-efficiency improvements.

The report – “Towards sustainable cooling in the European organic and small food retail sector – Status, technology needs and expectations,” shares what is considered the first-ever approximation of refrigeration, air-conditioning, and heat pump (RACHP)-related emissions within this sector in Europe.

An executive summary as well as the full report can be accessed [here](#).

The study looks at all European food store types up to 1,000m² (10,764ft²) in sales area in five countries, with special relevance to small organic food stores below 400m² (4,306ft²) sales area.

Stores with best-practice energy efficiency improvements, and an accelerated conversion of RACHP appliances to low-GWP, natural refrigerants, are expected to achieve additional emission reductions in the range of 0.4Mt (mega metric tons) CO₂e in 2025 compared to a baseline (business-as-usual) scenario, according to the report.

Cumulative RACHP-related emissions savings from 2021 to 2025 are projected to amount to 1.1Mt CO₂eq. More than half of the total projected RACHP emission mitigation potential for the five project countries in 2025 is attributed to German small food retailers, followed by those in Spain.

The study is derived from two online surveys of end users and RACHP contractors, and complementary personal interviews from October 2019 to April 2020 with small food retailers representing 1,061 stores in Europe.

Collected information was fed into a comprehensive modeling exercise covering business-as-usual and mitigation scenarios for GHG emissions projected to 2025.



The number of small food retail stores in Europe was estimated at an accuracy margin of +/-30%, and the projection relies on data and indicators defined prior to the COVID-19 pandemic. Nonetheless, the resulting data is unique, as it is regarded as the first-ever approximation on RACHP-related emissions from small food retail stores in Europe.

The energy-performance of an appliance is one key selection criterion when purchasing a new RACHP system, according to the report. The application of wider system energy conservation features – including doors on cooling cabinets, heat recovery, or thermal insulation in existing small stores was found to be rather low.

Promoting climate-friendly cooling

Launched in June 2019 and partially financed by the EU, the RefNat4LIFE project will run until December 2021. The aim of the project is to promote the uptake of climate-friendly cooling alternatives among end users of RACHP equipment and service providers throughout Europe.

“However, RefNat4LIFE actions will only be effective if based on solid data about current and future RACHP use in Europe’s small food retail sector,” explained Britta Paetzold, Project Manager at German independent environmental consulting firm HEAT GmbH. The report was written with other lead authors Nina Masson and Jascha Moie – both from HEAT – with inputs from the project partners.

“As such data had largely been missing, a market study was implemented to gather insights into a sector often disregarded in European and national statistics,” says Paetzold. This was essential to get a better understanding of the number of stores in the small food retail sector; the structure of the sector; its economic position and challenges; and the potential for GHG emissions savings in this sector, she added.

The report brings together expertise from eight partners from Belgium, Germany, the Netherlands, Portugal and Spain representing organic food retail, the RACHP contracting and servicing sector, and the natural refrigerants industry perspective (contributed by shecco, publisher of this website and project partner).

The full public report includes the following chapters:

- 1 Introduction, Climate Impact of Small Food Retail & Project Goals
- 2 The European Small Food Retail Sector
- 3 The European Organic Food Retail (OFR) Sector
- 4 RACHP use in the European OFR and small food retail sector
- 5 Recommendations & Outlook

For more information, visit www.refnat4LIFE.eu or email Info@refnat4life.eu

[r744, 2 December 2020, By Ilana Koegelenberg](#)



11. Preventing illegal trade in ozone depleting substances - Armenia

On November 26, 2020, a series of training courses on «Preventing Illegal Trade in Ozone Depleting Substances» for customs officers was launched within the framework of the second phase of the non-investment component of the HPMP stage II and «Institutional Strengthening and Capacity Building» Program.

The first meeting took place in the Southern Customs House in Sisian, with the participation of Armenak Melkonyan, Chief Customs Inspector in charge of the Montreal Protocol related issues at the State Revenue Committee, and the NOU Armenia experts.

The following topics were introduced to the participants:



- Ozone layer issues and ozone depleting substances;
- Ozone depletion issue;
- Preventing illegal trade in ODS;
- Illegal trade cases;

- Identification of ODS and products containing ODS;
- Basic safety requirements working with refrigerants.

The theoretical part of the training was followed by the hands-on session during which the specialists assisted by the RAC expert, had the opportunity to determine cylinder gas composition using a gas analyzer on the spot.

Within the framework of the investment component of the HPMP, it is planned to purchase gas analyzers in 2021, which will be provided to the Customs Service in order to prevent illegal trade of ODS more efficiently.

The training courses are planned to be carried out according to the following schedule:

- November 27-Meghri customs point-department of the Southern Customs House;
- December 1 - Northern Customs House;
- December 2- Bagratashen Customs Checkpoint Division of Eastern Customs House Department;
- December 3 – Gogavan-Privolnoye Customs Checkpoint Division, and Ayrum-Jiliza Customs Checkpoint Division of Eastern Customs House Department;
- December 8 - Ararat Customs House.

70 customs officers were trained during the meetings: 21 women and 49 men.

[Armenia National Ozone Unit, 26 November 2020](#)

12. HFC phase-down: challenges and lessons learned in Austria

Maria Purzner, Expert at Environment Agency Austria, shares her experience on the challenges and lessons learned in Austria for the HFC phase down.

Introduction to HFC legislation in Austria

F-gas regulations in Austria represent a long and ambitious, but rewarding, process in policymaking. F-gases have been subject to control since the early 2000s: in 2002, the Austrian government issued the first Ordinance of the Federal Minister for Agriculture and Forestry, Environment and Water Management on bans and restrictions on HFCs, perfluorocarbons (PFCs), and sulphur hexafluoride (SF6). Whilst PFC and SF6 usage control worked well, and led to immediate measures by industry, control of the use of HFCs represented more of a challenge. HFC use was controlled by allowing a maximum load for different types of equipment – with room for exceptions – and a requirement on reporting the uses of HFCs, which was more challenging to control, given the number of small enterprises working in the field (around 1,200 in a country with a population of 8 million). Whilst the use of PFCs, as well as SF6, decreased over the years, HFC usage continued to increase.

In 2006, the first version of the European Union (EU) regulation (EU Reg. 842/2006) introduced further controls on the use of HFCs – it should be noted that EU regulations are directly applicable in the national law of member states. The main provision outlined that in order to avoid emissions of HFCs, refrigerants should be handled only by certified, i.e. trained maintenance and service technicians, who understand the importance of the containment of HFCs during transport, storage, application and decommissioning, avoiding leakage (through leakage checks) and the careful handling of refrigerants. Imports and the production of HFCs were regulated through obtaining a quota, which allowed for monitoring of the amounts of HFCs placed on the EU market.

Another important issue was the ban on non-refillable containers for refrigerants. This ban led to a more “local” approach in retailing on the one hand, as importing refrigerants in refillable cylinders meant having to send them back empty, which increased shipping costs. However, on the other hand, avoiding non-refillable cylinders being disposed of as scrap metal meant that excess refrigerants were either destroyed or recycled instead of emitted.

In 2014, the current version of the EU regulation (EU Reg. 517/2014) was issued, which came with significant additions to the 2006 version. The provisions for certifications were extended in a way that refrigerants could only be traded between certified companies or personnel. This led to a surge of issued certificates: in 2014, approximately one fifth of all



1,250 companies (the majority being 1-2 person companies) were certified, in 2019, approximately 99% of all known companies were certified.

Challenges in the quota system

Austria then had to tackle the challenge of managing quotas. Several trading companies, as well as end users (research institutes, equipment producers) tried to obtain a quota; however, as the grandfathering principle is applied in Austria, these companies were unable to obtain the full quota they wanted. The grandfathering principle means that companies that had a quota before 2015 are to be treated with priority, and the remaining amounts to be split between newcomers. The existence of quotas has led to a market of quota trading, which was curbed by illegal imports of HFCs into the common market.

Unforeseen vs expected market developments

The most important novelty of the 2014 regulation was the planned phase-down on the total of HFCs used in the European market: in 2015, 100% of HFCs were allowed (based on the baseline of 2008-2012 in CO₂ equivalents), in 2016-2018, 93%, and in 2019, 63% of the baseline. This led to several unexpected situations in Austria: Industry representatives in 2015 were optimistic that the phase-down would pose no problem and that the industry was ready.

However, high prices of new (and flammable) hydrofluoroolefins (HFOs) or HFO-HFC blends had not been taken into account, as well as the price increase of existing HFCs, especially those with a high Global Warming Potential (GWP) such as R410A. This resulted in industry representatives trying to obtain an exemption for the refrigeration, air conditioning and heat pump sector from the regulation, which was not approved by the Ministry in charge. Their argument was that a shortage of HFCs could lead to dangerous situations, for example hospitals running out of refrigerants and that the increase in price of refrigerants was a competitive disadvantage.

However, the total amount of refrigerants placed on the market is not attributed to individual EU member states, but trade between member states is possible. Some member states were more advanced in their phase-down measures, which meant that there was no shortage of refrigerants on the common market. Refrigerants had simply become more expensive, which was the expected result and incentive for the industry to think ahead and apply alternatives.

Overall, the experience from Austria indicates that the phase-down hit smaller companies harder than bigger ones, simply because they had not taken the regulation seriously, or had not been aware of changes.

Regularly updated training is the key to success

Another challenge to be overcome in Austria was that of new training requirements due to the changed market. Previously, the use of flammable or toxic refrigerants had not been an adequate part of most training curricula: trainees or technicians trying to specialize in non-halogenated (natural) refrigerants, such as hydrocarbons, ammonia or CO₂ faced only a small choice of positions, as well as training programmes. This led to several initiatives looking at increasing possibilities for training programmes for zero- or low GWP refrigerant alternatives, as well as some companies that understood the signs of the time and profited from the provisions of the F-gas regulation.

As for training on the safe use of alternative refrigerants, they need to be ongoing, and an emphasis needs to be put on all aspects of energy efficient cooling, i.e. maintenance, leakage control, choice of refrigerant and planning of equipment.

Remaining challenges and new opportunities

What remains unsolved to date is an intrusion of illegally imported amounts of refrigerants into the market, particularly R134a and R410a. This was due to the wording of the regulation and the fact that only the initial placing of banned refrigerants onto the EU market was punishable. "Legally" obtained (i.e. purchased) amounts could not be fined, leading to a situation where a possible fine was lower than the profit made with even small amounts being imported in private cars. Several EU member states are trying to apply additional laws to be able to fine whoever acquires illegally imported refrigerants.

Lastly, Austria, like many other European countries, experiences heat waves during summer, which led to a surge in the sales of energy inefficient, small equipment, such as mobile room air conditioners and mono-split equipment. Solutions are necessary and need preparation, taking into account passive measures, including shading and ventilation, and active measures, such as district cooling and the use of energy networks, whilst preserving facades in historical city centres.

A lot remains to be done, but the good progress already made and the big impact these measures have on our environment keeps us motivated.

UNIDO Montreal Protocol newsletter, [issue no. 3](#), December 2020

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

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

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

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

The award aims to recognize and offer encouragement to customs and enforcement

officers and their respective organizations for successful prevention of illegal or unwanted trade in HCFCs / HFCs. This also includes equipment or products containing or relying on the use of HCFCs / HFCs.

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

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

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

Geographical scope and time period

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

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

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

[Learn more >>>](#)

FEATURED



OZONE SECRETARIAT



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

Dear 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 reassure you that during this very difficult period, OzonAction's Compliance Assistance Programme (CAP) – and 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.

Our technical activities and project delivery requirements, as a member of our Regional Networks and Thematic Working Groups, remain unchanged. What changed is that the CAP teams are working on contingencies plans to continue this essential and high-priority work as the situation evolves, in the meantime, our Regional Coordinators are continuing with the Regional Network activities to promote exchange of information and experiences between Ozone Officers.

Just like in previous occasions, our CAP teams have had to adjust their personal lives and work arrangements to meet these new conditions. All of our staff are now working remotely through a teleworking arrangement to ensure the continuous delivery of support to your countries. They are also communicating with each other in Paris, and in UNEP headquarters through video conferences, email and phone. They are all active and available for communication with all National Ozone Officers.

Since 1987, UNEP OzonAction has been your close partner in the implementation of the Montreal Protocol and we will continue to work with you on your country's compliance journey. We will continue to work with you during challenging times such as during this pandemic.

OzonAction is here to support you, if you have any needs, challenges, or feedback with us, please email ozonaction@unep.org and contact the nearest office member of OzonAction. Including the Regional CAP teams in Paris.

We safely welcome promotion, your families and your colleagues' health.

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 reassure 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](#)

Substance	Quota (Q1 2020)	Quota (Q2 2020)	Quota (Q3 2020)	Quota (Q4 2020)	Quota (Q1 2021)	Quota (Q2 2021)	Quota (Q3 2021)	Quota (Q4 2021)	Quota (Q1 2022)	Quota (Q2 2022)	Quota (Q3 2022)	Quota (Q4 2022)
HCFC-22	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
HCFC-123	500	500	500	500	500	500	500	500	500	500	500	500
HCFC-141b	200	200	200	200	200	200	200	200	200	200	200	200
HCFC-142b	100	100	100	100	100	100	100	100	100	100	100	100

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 mis-labelled 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 hydrochlorofluoro-carbons (HCFCs). Those chemicals, which are primarily used as refrigerants for air conditioners and fridges, are controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer and are being phased out by all countries according to a specific timeline.



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](#)

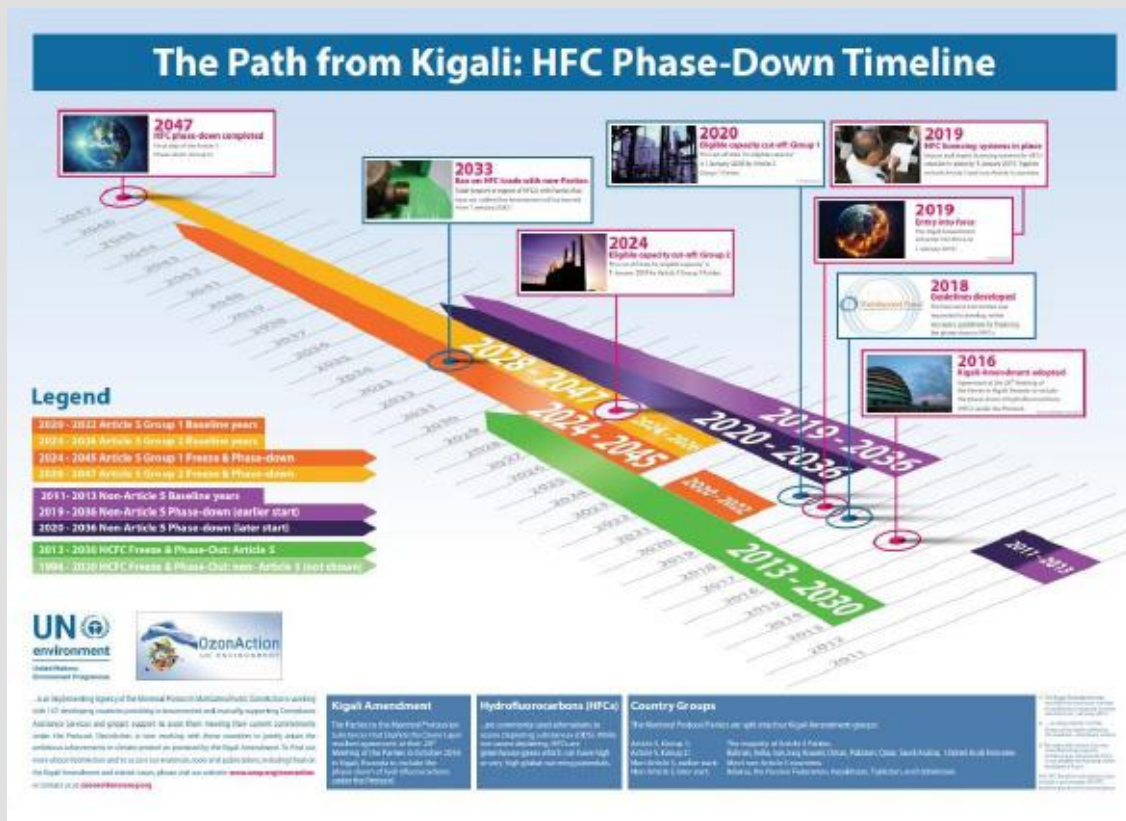
Contact: [Ezra Clark](#), UNEP, OzonAction



[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.

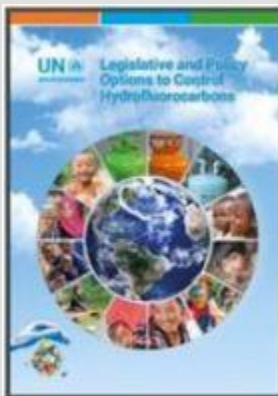
This application, consisting of short instructional videos on techniques, safety and best practice, serves as a complementary training tool for refrigeration and air-conditioning (RAC) sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training.

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)

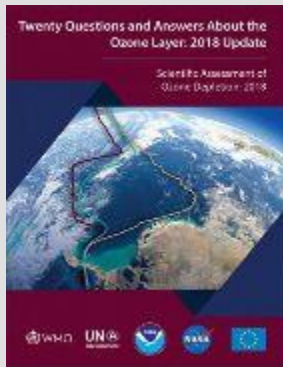
PUBLICATIONS



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

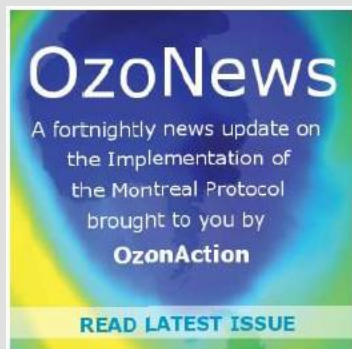
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[The Cold Chain: A logistical challenge at the heart of the distribution of the Covid-19 vaccine](#) - Gérald Cavalier - President of the Science and Technology Council of the International Institute of Refrigeration, President of the French Association of Refrigeration, President of the Cemafruid Tecnea Group - shares his perspective on the pivotal role that the cold chain will continue to play in the battle against the Covid-19 pandemic and the race to provide a vaccine worldwide... [learn more >>>](#)



[Ozone layer destruction and ways of its recovery](#) G N Akhobadze 2020 IOP Conf. Ser.: Mater. Sci. Eng. 962 042009



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

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

Prepared by: Samira Korban-de Gobert, OzonAction

Reviewed by: Ezra Clark, OzonAction

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