

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. Ozone Secretariat, High-Level Segment of COP12(I)/MOP32

Opening remarks by Inger Andersen, Executive Director, United Nations Environment Programme.

Excellencies, ladies, and gentlemen

Allow me first to extend my deep appreciation to the President of COP11, Ms. Nicole Folliet and to the President of MOP31, the Honorable Mr. Martin Alvin Da Breo, for their tireless leadership in support of the [Vienna Convention](#) and the [Montreal Protocol](#).

I also wish to express a warm welcome to the incoming COP11 President Cheikh Sylla of Senegal and the MOP32 President Paul Krajnik of Austria. I thank you both for taking on this leadership and wish to assure you that we at UNEP will do all we can to ensure strong and continued support to the Convention and the Protocol.



Allow me also to congratulate the Parties for convening this online global meeting. Indeed, it is a testament to your commitment that today we have 700 participants from 198 Parties and other stakeholders registered to participate in these meetings.

The agenda before you is, in view of the extraordinary circumstances in which we find ourselves, restricted to essential items for decision by the Parties.

As you know, these items include amongst others:

- authorizing the Executive Committee of the Multilateral Fund (MLF) to use unspent funds from the current 2018-2020 fiscal period in 2021, pending the replenishment decision to be taken in 2021 when face-to-face meeting will hopefully become possible; critical use exemptions for methyl bromide is also on your desk, as required by 4 parties in 2021 and 2022;
- the budgets for Vienna Convention and the Montreal Protocol Trust Funds for 2020 and 2021; and finally
- membership in Montreal Protocol bodies in 2021, including in the Technology and Economic Assessment Panel (TEAP).

So, as you set out to confer on these matters, allow me to say a word on your impressive commitments and accomplishments. Despite the difficult challenges that the COVID-19 pandemic has brought to us all, with your commitment, with your hard work, you have been able to continue the important work of the Convention and Protocol. This is well worth noting.

Indeed, much progress has been achieved of which you can be rightly proud. A number of online meetings have been held, including:

- the July online session of the Open-ended Working Group on replenishment;
- the 65th meeting of the Implementation Committee;
- the October online Ozone Research Managers meeting on gaps in monitoring; and, of course
- the Bureau meeting of both the MOP and the COP.

In parallel, the Assessment Panels have also produced excellent work:

- TEAP has prepared reports on replenishment, methyl bromide critical use evaluation, and energy efficiency;
- SAP has been working on the CFC-11 report; and
- EEAP has continued working on the ozone layer and climate change impacts on health and environment.

So much work has happened, and I am both impressed and inspired that this has occurred despite the challenges that 2020 has brought.

As we mark the 35th anniversary of the Vienna Convention, let us also recall and pay tribute to Professor Mario Molina who passed away on October 7. Losing a great leader and champion of ozone and climate protection was a shock to the ozone community. In

mourning his passing, we also celebrate his contribution and reflect on the history of the science and of the scientists on whose shoulders all this work stands.

As we all know in the environmental sphere, sound science is an essential basis for policy and decision making. In the context of the Vienna Convention and the Montreal Protocol, this is abundantly clear.

Let us recall Mario Molina, F. Sherwood Rowland and Paul Crutzen who shared the 1995 Nobel Prize for Chemistry for their research on the destruction of the ozone layer. The first step in the efforts to protect the ozone layer was the scientific research findings in 1974 that informed us that man-made chemicals, CFCs, could be destroying the ozone layer. It was Mario Molina and Sherwood Rowland that published a paper in 1974, hypothesizing that CFCs destroy the stratospheric ozone, and they who called for a complete ban on CFC released into the atmosphere.

Much work followed, and in 1985 the [Vienna Convention for the Protection of the Ozone Layer](#) was agreed. As we all know, the Vienna Convention is a framework convention for international cooperation with a focus on science. Two years later the Montreal Protocol was adopted in 1987.

Building on the science and framing agreed global action on the basis of this science have been the core work ever since, and it is worthwhile for us to take stock of, and appreciate, the extraordinary science that this group of committed nations has enabled to be produced.

The three Assessment Panels carry out comprehensive assessments and Parties rely on their findings to strengthen the provisions, policies and actions under the Montreal Protocol.

Recently, when unexpected emissions of CFC-11, a chemical that was already phased out globally, were detected by scientists, the discussions which ensued demonstrated to us that the Montreal Protocol works:

- science detected problems;
- relevant Parties are taking appropriate action;
- emissions are decreasing; and
- Parties are looking into strengthening the Protocol to avoid future occurrences.

So, looking ahead, we will continue to rely on the rigor and vigilance of scientists and researchers as this will be key for the continued success of the Montreal Protocol.

Allow me to turn to another massive accomplishment well worth noting - [the Kigali Amendment](#). This unique Amendment on the phase-down of HFCs is a critical instrument in our combat of climate change.

We all know that HFCs have a high global warming potential. It has been estimated that full implementation of the Kigali Amendment could prevent up to 0.4 degrees Centigrade of warming by 2100. Further, phasing down of HFCs through energy efficiency enhancements in refrigeration and air-conditioning equipment could also bring significant additional climate benefits. And we are already seeing considerable successes. Non-Article 5 parties to the Kigali Amendment were required to reduce their production and consumption of controlled HFCs by 10% and this has already been accomplished.

We are proud that as of 26 November 2020, 112 parties to the Montreal Protocol had ratified the Kigali Amendment. I urge all Parties that have not yet ratified the Kigali Amendment to do so to ensure that the Amendment gets universal ratification.

Finally, I cannot speak to you all today without expressing my deep appreciation to the former Executive Secretary, Ms. Tina Birmpili. As you all know, Ms. Birmpili left the Ozone Secretariat on 30 September 2020 to take up new appointment as Deputy Executive Secretary of the United Nations Convention to Combat Desertification, from 1 October 2020.

Ms. Birmpili joined the Ozone Secretariat in November 2013. This was when Parties to the Montreal Protocol were involved in intense negotiations to amend the Protocol to include HFCs. Under your leadership, Ms. Birmpili steered those negotiations and we can pay tribute to her for her hard work, which to you adopting the Kigali Amendment in October 2016. During Ms. Birmpili's tenure, the Ozone Secretariat also updated its data reporting system, moving it online. Further, the Secretariat enhanced digital assets to facilitate the work of stakeholders of the Ozone Treaties. These are all important achievements.

Let me also extend my appreciation to Ms. Megumi Seki for agreeing to take on the Acting Executive Secretary role while the competitive recruitment process is being undertaken. I expect this process to be completed by early 2021.

In closing, once more, I extend my deep appreciation to the outgoing presidents for all your hard work, and to the incoming presidents for your future leadership. Rest assured that we at UNEP will do all that we can to support the Ozone Secretariat as it deploys its functions to ensure that the important work toward protecting the ozone layer remains a high priority.

I wish you the very best in your deliberations and thank you for the opportunity to address you.

Thank you.

[Inger Andersen](#)

Executive Director

[The United Nations Environment Programme \(UNEP\), 28 November 2020](#)

3. 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

The President of the thirty-second Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (MOP 32), Paul Krajnik, in his closing remarks, stated the Vienna Convention and the Montreal Protocol “sent an important signal that despite difficulties, the goals of the Montreal Protocol are well on track and, while hard, we have clearly showed that if something should be done, it can be done.” These sentiments echoed throughout the week by participants, who convened for the combined twelfth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer (Part I) (COP 12(I)) and MOP 32.

The most important agenda item was the replenishment of the Multilateral Fund (MLF) for the triennium 2021-2023. Since the current fiscal period concludes in December 2020, parties had to ensure the MLF Secretariat could continue operating in 2021 and fulfill its mandate to assist Article 5 (developing) countries in meeting their obligations under the Montreal Protocol. After four days of virtual contact group discussions, parties agreed to roll over any unspent funds from the 2018-2020 triennium and allow the rollover balance to be used as an interim budget for the 2021-2023 triennium. They also agreed to authorize the Secretariat to arrange for an extraordinary MOP in 2021 to take a decision on the final programme budget for 2021-2023, should circumstances allow.

The other agenda items that were addressed, with concomitant decisions adopted, for the continued functioning of the Vienna Convention and the Montreal Protocol included:

- the financial reports and budgets of the Vienna Convention and the Montreal Protocol;
- critical-use exemptions for methyl bromide for 2021-2022;
- compliance and data reporting issues;
- membership of the Montreal Protocol bodies and assessment panels; and
- dates and venue of the next Montreal Protocol meetings.

COP 12(I)/MOP 32 was held online from 23-27 November 2020 due to the COVID-19 pandemic, with the preparatory segment convening from 23-26 November, and the high-level segment convening on 27 November. Delegates dealt with a discreet number of issues—only those that are essential to keeping the Convention and the Protocol on track and achieving its goals. Non-essential issues, such as a proposal on strengthening the Technology and Economic Assessment Panel and its Technical Options Committees, were postponed until 2021.



Throughout the week, parties met congenially and mindful of the need keep the Protocol on track. Each daily session was three hours long and used the Interprefy platform, necessitated by a virtual meeting attended by delegates from a multitude of different time zones. They worked hard to overcome the varying technological capacities to ensure they could take the necessary decisions. Participants did, however, acknowledge that face-to-face negotiations are easier and expressed hope that MOP 33 could take place in a more normal setting. [...]

Final Outcome: In its decisions (UNEP/OzL.Conv.12/L.2/Add.1-UNEP/OzL.Pro.32/L.2/Add.1), the COP decided that the second part of COP 12 will meet back-to-back with MOP 33, while the MOP decided that MOP 33 will meet in Nairobi from 25-29 October 2021, unless other arrangements are made by the Secretariat in consultation with the Bureau.

A Brief Analysis of COP 12(1)/MOP 32

Time and times are but cogwheels, unmatched, grinding on oblivious to one another. Occasionally - oh, very rarely! - the cogs fit; the pieces of the plot snap together momentarily and give men faint glimpses beyond the veil of this everyday blindness we call reality. ~ Robert E. Howard

Lauded as arguably the most successful multilateral environmental agreement, the Montreal Protocol has proven that its cogs fit and turn, grinding on since the treaty's adoption in 1987. It has given the world great hope that strides will continue to be made to restore the ozone layer back to pre-1980 levels. But the global COVID-19 pandemic threatened to stop those cogs.

The twelfth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer (Part I) (COP 12(I)) and the thirty-second Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (MOP 32) became the first body serviced by the United Nations Environment Programme (UNEP) to hold a virtual meeting that took multiple legally binding decisions. This achievement was born out of necessity as there were crucial decisions that needed to be taken to ensuring the proper functioning of the Vienna Convention and the Montreal Protocol beyond 2020.

Delegates met from 23-27 November 2020 in a virtual setting, with negotiating sessions lasting only three hours each day to reach agreements to ensure the continued operation of the Secretariat, the Multilateral Fund (MLF), and the various bodies of the Protocol. A pared down agenda dealing with only essential issues—replenishment of the Multilateral Fund for the triennium 2021-2023, methyl bromide critical-use exemptions (CUEs) for 2021 and 2022, financial reports and budgets, and membership of the various Protocol bodies and assessment panels—facilitated the process.

But even with a pared down agenda and the goodwill of the ozone family, negotiating decisions in a virtual environment sometimes proved challenging. COP 12 (Part I)/MOP 32 did succeed in adopting decisions on each agenda item, which will help keep the Protocol on track beyond 2020. This analysis looks at the decisions taken by the parties to keep all the cogwheels turning and assesses how using a virtual environment impacted the process.

Keeping the MLF Cogs Turning

Parties to the Montreal Protocol were expected to take a decision in 2020 on the final MLF programme budget for the 2021-2023 triennium. This was essential since the current

budget is due to expire on 31 December 2020, and if no agreement had been reached, the cogs would stop turning.

Throughout the meeting delegates reaffirmed the importance of the MLF and its work, which is seen as essential to help Article 5 parties (developing countries) meet their obligations under the Protocol. Parties had also long held that they would not take a final decision on the next MLF programme budget if negotiations continued in a virtual setting. Presenting a draft decision to the plenary on setting an interim budget to keep the MLF cogs grinding, the US reiterated that the final budget decision was too important, too in-depth, and too intricate to be adopted without face-to-face negotiations.

Parties generally welcomed the proposal for an interim budget. There are still substantial funds from the last replenishment to roll over (USD 268 million) to keep everything going for at least another year. During the virtual contact group discussions, it became clear that some parties were concerned about the implication and precedence that agreeing to an interim budget could set, particularly since the Montreal Protocol is a body that works off of precedence.

One of the biggest concerns voiced by Article 5 parties was if they set an interim budget using the rollover balance, would that absolve donors from contributing new and additional funds? The non-Article 5 parties very quickly pointed out that the intention of the draft proposal was merely to allow the MLF to continue with its work. They sought to allay concerns by noting parties “will take a decision” on the MLF replenishment in 2021 to adopt a final budget for the 2021-2023 triennium, and by referencing that the final replenishment decision will include regular contributions. These amendments, coupled with a proposal to hold an extraordinary MOP (ExMOP) in 2021 to take the final decision, seemed to provide sufficient indication to Article 5 parties that donors will not use the rollover balance to either avoid new contributions or lower the ambition for the final budget negotiations.

The non-Article 5 parties on the other hand were concerned with Article 5 parties’ proposal to limit the rollover balance for use only in 2021, saying that the uncertainty faced in today’s world is just too large to not have a contingency plan should the final budget negotiations not be able to take place.

Delegates managed to work out a compromise that states while the interim budget is for the triennium, the rollover should prioritize these funds for 2021. In effect, Article 5 parties chose to place their trust in donor parties to ensure that the MLF can continue with its work, and that not only will a way be found to take a replenishment decision during 2021, but that the non-Article 5 parties will not count the rollover amount against their 2021-2023 commitments.

Keeping the Protocol Cogs Turning

Methyl bromide CUEs for 2021 and 2022, financial reports and budgets, compliance and reporting issues, and membership of the various Protocol bodies and assessment panels—all of these need to be addressed annually to ensure the various cogs of the Protocol keep grinding. Thus, with the continuing pandemic, a virtual COP/MOP was ultimately inevitable.

But, as more and more intergovernmental meetings have found, constructive negotiations have to overcome the severe limitations a virtual meeting can pose, such as disparate time zones, varying technological capacities, abbreviated sessions, limits on the number of contact groups, and the length of their deliberations. Co-Chairs and delegates alike bemoaned the inability to quickly resolve issues through informal discussions on the

sidelines or over coffee in the delegates' lounge. The usual tactics of negotiations (e.g., last-minute horse-trading, brinksmanship, personal diplomacy) are far less effective in a virtual setting. There is also less flexibility when more time is needed to resolve a particularly contentious issue.

More intersessional work is an option. The Protocol used this methodology, as it did for the OEWG in July, using online forums. This was a useful process, particularly for the methyl bromide CUEs, where the nominees were able to converse with the methyl bromide Technical Options Committee (MBTOC) on their recommendations. But this does not replace the time needed for negotiations. Parties also complained that some issues, like appointments to the Technology and Economic Assessment Panel (TEAP), would be easier to fill for the usual term of four years if face-to-face negotiations were possible. Ordinarily TEAP is consulted when appointing members, to ensure that the right balance of expertise is achieved. Concerned with possibly overlooking the particular needs of the panel and not being able to consult with panel members in person meant parties compromised on appointing senior experts for a one-year term so work could continue while avoiding any unintended oversight in terms of expertise required. To ensure leadership and continuity in the panel's work, parties appointed Co-Chairs for the full four-year term.

Even with a reduced agenda, time was a precious commodity. Delegates were heard saying during negotiations on several issues that there was not enough time to accommodate new proposals, and consensus was often achieved by shunting proposals to the next meetings of the OEWG and MOP in 2021. Already several issues originally planned for MOP 32, such as energy efficiency, have been postponed. Now some, such as Morocco's proposals for TEAP reform, raised on the first day, have been added to the list. If COVID-19 conditions persist and they force more virtual meetings in 2021, the question is whether the virtual format can be tweaked to deal with the additional workload.

It was clear that the uncertainty of whether a virtual format could work for the Protocol's meetings in 2021 was clearly on delegates' minds. During the discussion about holding an ExMOP to tackle the MLF replenishment budget, some delegates wanted to confirm that the ExMOP could only take place as an in-person meeting, while others wanted flexible ambiguity in case the COVID-19 pandemic does not allow it. The need for extra preparations before an ExMOP, through a virtual OEWG and/or other forums or preparatory meetings, was front and center in delegates' proposals. Time and again many participants emphasized the need to plan for all contingencies but provide for maximum flexibility. The compromise was to authorize the Secretariat to organize an ExMOP in 2021 "if and when the circumstances related to the global COVID-19 pandemic permit it."

Keeping the Ozone Regime Running

In her speech to the high-level segment, UNEP Executive Director Inger Andersen commended the Montreal Protocol community's commitment and hard work during the difficult challenges posed by COVID-19 to make significant achievements for which it can be proud. Indeed, many delegates considered the virtual COP 12(I)/MOP 32 successful as it had achieved what it set out to do: adopt decisions that will keep the ozone regime running smoothly for the coming year. It also proved that despite the fundamental difficulties of virtual meetings, they can work. Some delegates even posited that virtual meetings are a boon for transparency, as more parties can participate without incurring high travel costs.

That said, delegates also agree that virtual meetings do not make up for in-person negotiations. Many felt the lack of opportunity to resolve issues quickly and quietly without

stalling the overall negotiation process was a great loss. The adoption of interim budgets and the use of intersessional work led to a concern that unforeseen consequences could occur due to precedents being set. This did not sit well with parties as the Montreal Protocol has been known in the past to operate based on precedence.

The inherent uncertainty of the times we are living in requires flexibility and understanding and ensuring there are contingency plans in case circumstances change—something 2020 has shown can and will happen, and then plans are required to turn on a dime. Many delegates concluded that the Montreal Protocol has been able to adapt as necessary to the cogwheels grinding. However, they cautioned that in doing so, any unintended consequences will not be clear until much further down the road.

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

IISD Reporting Services, 30 November 2020

4. OzonAction Virtual Side Events at MOP 32

Paris, France, 26 November 2020 – The [UN Environment Programme \(UNEP\) OzonAction](#) held two very relevant and timely side events as part of the 32nd Meeting of the Parties to the Montreal Protocol. Due to the constraints on holding large meetings and travel restrictions resulting from the COVID-19 pandemic, these side events were held online. Despite these limitations, several excellent speakers participated who ensured the highest quality of these events. The side events covered the following issues:

1) Installing, operating and servicing A/C systems in the times of COVID-19

The screenshot shows the event registration page for 'Installing, Operating and Servicing A/C systems at the times of COVID-19'. The event is scheduled for Monday, Nov 23, 2020, from 11:30-13:00 AST (Atlantic GMT +3). The page lists four speakers and their topics: William Bahnfleth (ASHRAE) on Engineering Controls for Airborne Infection Risk; Graeme Fox (AREA) on Risk Assessment and Decision-Making Filter; Vishal Kapur (ASHRAE) on Operational and Servicing Considerations for A/C Applications; and Shuang Wang (ASHRAE) on Operation strategies of air conditioning system in public buildings. The page also features logos for UN, OzonAction, ASHRAE, AREA, and ISHRAE.

On Monday 23 November 2020, OzonAction’s side event focused on the topic of the -installation, operation and servicing of air conditioning systems in the times of COVID-19. With the current pandemic, air-conditioning comes to the fore as a key player that can contribute significantly to minimising the likelihood of spreading such airborne viruses. It is also important to consider field practices of air-conditioning systems from a safety point of view for new existing systems.

This side event was organized in cooperation with four partners: [ASHRAE](#); the [European Association of Refrigeration, Air Conditioning and Heat Pump Contractors \(AREA\)](#); the [Indian Society of Heating, Refrigerating and Air-Conditioning Engineers \(ISHRAE\)](#); and the [China Refrigeration and Air-Conditioning Industry Association \(CRAA\)](#). The event featured examples of the best guidelines and references offered by key international industry associations, to be considered when installing, servicing and operating air-conditioning systems in the context of the COVID-19.

The four speakers at this event were, William Bahnfleth, Chair of the ASHRAE Epidemic Task Force, Mr. Graeme Fox, Director at AREA, Mr. Vishal Kapur, Chair of the COVID-19

Task Force at ISHRAE and Dr. Baolong Wang, Vice Director of the Cleanroom Committee of the CRAA, and the moderator was Mr. James S. Curlin, Acting Head, UNEP OzonAction. The event was well attended and included an active Q and A session.

- A full video recording of the event is available on the [OzonAction YouTube Channel](#)
- The four presentations are available on the [OzonAction Meeting Portal](#)

2) Harmonised system codes for hydrofluorocarbons: What are the challenges and what can be done now?



On Tuesday 24 November 2020, OzonAction's side event addressed the issue of Harmonised system codes for hydrofluorocarbons (HFCs). One of the important requirements of the [Kigali Amendment](#) is that an import and export licencing system for HFCs needs to be in place in each country that is Party to the Amendment (by 2021-extended deadline). To enable a licencing system to function effectively it is important for a government to be 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 - 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 mixtures.

This side event provided an overview of the issue and explained 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. The event also provided examples of interim approaches to address this serious challenge.

The three speakers at this event were, Mr. Daniel Cardozo, Technical Officer, World Customs Organization, Mr. Arno Kaschl, Policy Analyst, European Commission and Ms. Laisiana Tugaga, Trade and Revenue Management Adviser, Oceania Customs Organisation, and the moderator was Mr. James S. Curlin, Acting Head, UNEP OzonAction. The event was well attended and included an active Q and A session.

- A full video recording of the event is available on the [OzonAction YouTube Channel](#)
- The three presentations are available on the [OzonAction Meeting Portal](#)

For more information:

[Ayman Eltalouny](#), Partners' Coordinator, UNEP, OzonAction
[Ezra Clark](#), Capacity Building Manager, UNEP, OzonAction

5. Enhancing voluntary collaboration on cooling through the G20

We propose that the Group of Twenty (G20) enhance voluntary collaboration on cooling. International cooperation for energy-efficient and sustainable cooling requires enhanced G20 joint leadership that strengthens existing initiatives, helps develop synergies, and addresses the new cooling challenges presented by the COVID-19 pandemic. Safer air conditioning systems and cold chains for vaccines are urgently needed. Stimulus measures can retrofit old buildings and equipment to boost efficient cooling while phasing out harmful refrigerants and promoting a circular economy. To be led by countries with the greatest interest, enhanced collaboration can pool together experiences and expertise enabling more effective policy coordination and impact. [...]

Proposal

Enhancing voluntary cooperation on cooling in the G20

There are few countries in the world where cooling is more essential to life than in Saudi Arabia. Because of its fundamental importance to development and wellbeing, the Kingdom's 2020 G20 Presidency is an ideal opportunity to elevate cooling as a global strategic priority.

It is essential that any enhanced cooperation on cooling at the G20 level recognizes and does not duplicate existing G20 and other international efforts. Such international agreements and initiatives have been delivering important results for governments. Nevertheless, they could all benefit from enhanced collaboration from G20 countries in order to broaden membership, increase resourcing and commitment, and to better coordinate and learn from best practices, especially given the emerging policy needs presented by COVID-19.

Energy efficiency is already a major priority for G20 cooperation, and cooling and air conditioning is an essential element of this objective. Cooperation has been key to the G20 Energy Efficiency Leading Program and associated task groups that have been led by smaller groups of countries. These include the G20 Buildings Energy Efficiency Task Group, G20 Super-Efficient Equipment and Appliance Deployment Initiative, Clean Energy

The screenshot shows a webpage from G20 Insights. At the top, there are navigation tabs for 'POLICY BRIEFS', 'OVERARCHING VISIONS', and 'THINK TANK'. Below this is the 'G20 PERFORMANCE' section. The main content area features a green header with the text 'G20 2020' and 'Climate Change and Environment'. The title of the policy brief is 'Enhancing voluntary collaboration on cooling through the G20'. Below the title, there is a list of authors: 'Nancy T. Al-Jarrah, Mohamed El-Shater, Thamer Al-Shahr, Hisham Ismail, Haytham Saeghef, Mohamed Hossain, Radhika Khosla, Houssem Ward, Alexander Lantz, Sushant Kumar, Anwar Hossain, Hisham Chahine, Youssef Hossain, Youssef Hossain'. The text of the brief discusses the need for international cooperation on cooling, the challenges presented by the COVID-19 pandemic, and the role of stimulus measures in retrofitting buildings and promoting a circular economy. It also includes a 'Challenge' section with a sub-heading 'Why does the Group of Twenty (G20) need enhanced cooperation on cooling?' and a line graph showing 'G20 AC electricity consumption 2000-2018'. The graph shows a steady increase in electricity consumption from 2000 to 2018, with a significant jump in 2018. The caption below the graph reads: 'Figure 1: G20 AC electricity consumption 2000-2018. Source: Enerdata EnerDemand database (www.enerdata.net)'.

Ministerial's Advanced Cooling Challenge, and G20 Task Group on District Energy Systems.

This G20 work is supported and complemented by other international agreements and initiatives. A major one among these is the important international agreement to phase down HFCs through the Kigali Amendment to the Montreal Protocol (Appendix A). Other initiatives include:

- The Biarritz G7 Pledge for Fast Action on Efficient Cooling (Appendix B)
- The Climate and Clean Air Coalition's programs on Efficient Cooling and HFCs
- The Cool Coalition
- The Kigali Efficiency Program and Principles for National Cooling Plans
- The World Bank's Efficient Clean Cooling Program
- The Sustainable Energy for All Cooling for All Program
- The Rocky Mountain Institute Global Cooling Prize
- The European Partnership for Energy and the Environment's Count on Cooling • The Green Climate Fund's Green Cooling Initiative
- United Nations Environment Programme's (UNEP) Refrigerant Driving License
- COP 26 – UK Government support for cooling
- The International Energy Agency's (IEA) Technology Collaboration Program on Energy Efficient End Use Equipment
- UNEP's United for Efficiency Program and model AC regulation guidelines
- UNEP's District Cooling Initiative
- Collaborative Labeling and Appliance Standards Program's (CLASP) Cooling and Energy Efficiency programs
- The Energy and Resources Institute's Alliance for Sustainable Habitat, Energy Efficiency and Thermal Comfort for All
- UN Basel Agency for Sustainable Energy's Cooling as a Service Initiative
- UNEP's Global Alliance for Building and Construction
- The University of Oxford's Future of Cooling Program

Enhanced collaboration on cooling at the G20 level is urgently needed in order to:

- draw on the experience and the lessons learned from the role cooling systems can play in reducing the spread of COVID-19 indoors,
- achieve greater impact across international cooling agreements and initiatives through broadening membership and more effectively using scarce resources through improved collaboration, and
- provide a strong G20 statement on cooling similar to the Biarritz Pledge to reinforce efforts and attract greater resources to the cooling challenge.

For example, the work program of the G20 Task Group on District Energy Systems co-led by Saudi Arabia, Russia, and China is still to report on progress, despite several years since initiation. This Task Group could be reinvigorated through closer cooperation with the UNEP's District Cooling Initiative and with technical support through institutions such as the IEA, King Abdullah Petroleum Studies and Research Center, and King Abdullah University of Science and Technology.

While the ultimate scope for enhanced collaboration should be determined such that it best meets the G20 countries' needs, the review and consultation process conducted in preparing this policy brief has helped identify 11 priority areas for "cool collaboration," which could lead to immediate and strong benefits in addressing the cooling challenge. [...]

Key Recommendations:

Led by countries with the greatest interest, we recommend that the Group of Twenty (G20) enhance international collaboration on sustainable cooling by pooling experiences and expertise on urgent issues, especially in the context of the COVID-19 pandemic. Our recommendations include:

- Encourage fast implementation of the 2016 Kigali Amendment of the Montreal Protocol to phase down hydrofluorocarbons (HFCs), which is signed by 197 countries, ratified by 98 countries, and pending ratification by 9 G20 countries.
- Make a strong declaration similar to the G7's Biarritz Pledge for Fast Action on Efficient Cooling.
- Combine knowledge on solutions, policies, and best practices for safe ventilation and filtering of air in order to prevent the indoor spread of COVID-19 and other viruses.
- Support global access to vaccines through reliable and efficient medical cold chains.
- Collaborate for stronger impact on cooling through initiatives such as the G20 Energy Efficiency Leading Program and Task Group on District Energy Systems.
- Phase out the most inefficient technologies and accelerate the adoption of the best available technologies, with regular updates in response to each product's innovation cycle.
- Encourage higher adoption of digital and non-air conditioning (AC) cooling solutions such as smart grids, building design, urban planning, and green spaces.
- Boost funding for next-generation high-efficiency, safe, low global warming potential (GWP) ACs and other cooling equipment that would effectively control COVID-19 transmission, without aggravating climate change.
- Enhance trade of and technology transfer in high energy efficiency products and design of anti-dumping policies in developing countries in order to prohibit the import of both new and used obsolete technologies.
- Support global food security through reliable and efficient cold chains. [...]



Excerpts from "[POLICY BRIEF ENHANCING VOLUNTARY COLLABORATION ON COOLING THROUGH THE G20](#)" - Task Force 2 CLIMATE CHANGE AND ENVIRONMENT.

Authors: Noura T. Al-Saud, Mashael Al Shalan, Thamir Al Shehri, Mazhar Bari, Maxime Beaugrand, Nicholas Howarth, Radhika Khosla, Moncef Krarti, Alessandro Lanza, Benoit Lebot, Karan Mangotra, Natalia Odnoletkova, Tadeusz Patzek, Yamina Saheb.

[The Group of Twenty \(G20\) Insights, 23 November 2020](#)

In 2020, the [G20 Leaders' Summit](#) was held virtually, proudly hosted by the Saudi G20 Presidency. The virtual meeting took place over two days on November 21-22, 2020.

AFRICA

6. Evaporative cooling technologies for fruit and vegetable preservation in Kenya

Storing vegetables after harvest without cooling them can lead to spoilage and reduced income for farmers. Most techniques for cooling and storing vegetables rely on electricity, which is may be unaffordable or not available for many smallholder farmers, especially those living in remote areas on less than \$3 a day.

Evaporative Cooling Chambers (ECCs) can improve vegetable storage shelf life by providing a stable storage environment with low temperature and high humidity, which reduces the rate of respiration, water loss, and spoilage in most vegetables. The improved storage environment can have positive impacts including reduced post-harvest losses, less time spent traveling to the market, monetary savings, and increased availability of vegetables for consumption. ECCs are particularly suited for hot, dry regions and countries with some access to water and limited or unaffordable access to electricity, such as rural Kenya.

The research is being conducted in partnership with researchers from the University of Nairobi's Department of Plant Science and Crop Protection, who have extensive experience working with low-income rural communities on issues related to horticulture and improving livelihoods.



The collaborative team from MIT and University of Nairobi is building and testing innovative designs for room-sized evaporative cooling chambers in rural Kenya for farming cooperatives whose primary product is mangoes. The computational heat and mass transfer models developed for clay pot cooler evaporative cooling devices will be used to predict the behavior of larger scale evaporative cooling chambers. The goal of this project is to optimize the design for performance, practical construction, and user preferences to meet the needs of smallholder farmers in low-income, rural communities in Kenya and better understand user behavior and pathways to adoption.

[Abdul Latif Jameel Water and Food Systems Lab \(J-WAFS\), October 2020](#)

See also >>> [Designing off-grid refrigeration technologies for crop storage in Kenya](#) - A team of MIT researchers is using the thermodynamic properties of water evaporation to bring off-grid cold storage of produce to remote, arid regions. Article in Massachusetts Institute of Technology News (MIT News), 16 October 2020.

EUROPE & CENTRAL ASIA

7. EU Cooling industry wants more ambitious F-Gas regulation, Study shows
Widespread market support seen for more F-gas bans, an accelerated F-gas phase down, and a switch to natural refrigerants.

A new market study by shecco has found that the EU's cooling industry supports a more ambitious F-Gas Regulation, with more sectoral F-gas bans, an accelerated F-Gas phase down, and greater readiness to switch to natural refrigerants.



The study – “F-Gas Regulation Revision: Industry Wants More Ambition” – is based on a detailed, extensive effort to collect feedback from EU HVAC&R stakeholders to inform the revision of the current European Union (EU) F-Gas Regulation that is now underway.

The study reached out to top-level industry professionals, including engineers, contractors, manufacturers, academic institutions and end users (among others) active in the EU HVAC&R sector. shecco collected information on the opportunities and challenges related to taking a more ambitious stand in the new F-Gas Regulation revision.

The 12 sub-sectors covered in the study include: commercial refrigeration (multipack centralized systems and condensing units), transport refrigeration, industrial refrigeration, single-split air-conditioning systems, multi-split/VRF systems, rooftop HVAC systems, chillers (displacement), centrifugal chillers, domestic heat pumps, commercial heat pumps, industrial heat pumps, and mobile air conditioning for buses and/or trains.

The results of the study can be found in [this report](#).

“The findings were overwhelmingly positive, showing a large number of companies are ready to push forward on stricter sectoral bans to make up for the time lost by not being ambitious enough in the previous F-Gas Regulation revision,” said Ilana Koegelenberg, Market Development Manager at shecco and lead author of the report. “We hope that these results will give confidence to the European Commission that the European HVAC&R industry is ambitious and wants further progress in this direction to help play an

active role in making Europe climate neutral by 2050.”

Further F-gas bans wanted

The study found that 87% of participants believe that “increasing the ambition of the F-Gas Regulation through further bans, a more ambitious phase down, and strong measures to combat illegal trade should be an essential component of the EU’s 2030 climate ambition strategy.”

In addition, 77% of respondents were in favor of an accelerated phase-down schedule, given the current state of development of natural-refrigerant alternative technologies.

The study also showed overwhelming support for more ambitious sectoral bans for sub-sectors already mentioned in the F-Gas Regulation, as well as for the introduction of bans for sub-sectors previously not included.

The majority of responses indicated readiness of the HVAC&R industry to switch over completely to natural refrigerants. In 12 out of the 12 sub-sectors reviewed, the majority of survey respondents indicated support of a full ban on new HFC-based products by 2024. Natural refrigerants were also shown to be the refrigerant of choice in 11 of the 12 sub-sectors surveyed.

The survey results highlighted how a lack of sectoral bans (or a lack of more ambitious sectoral bans) has had a negative impact on the sector’s ability to develop alternative, climate-friendly solutions. The majority of respondents also said the lack of bans negatively impacted the uptake of these alternative solutions, as well as their price competitiveness.

The study includes input from 125 individuals at more than 80 companies active in the EU. It is important to note that the study was open to the entire industry, not just companies working with natural refrigerants. Input was collected predominantly from personal correspondence with stakeholders, as well as a comprehensive industry survey that featured more than 160 questions.

This survey, co-funded by shecco and The Children’s Investment Fund Foundation (CIFF), was shared globally through various marketing campaigns and social media outreach activities to ensure equal opportunity to participate. Input was accepted from around the world, with the only limitation being that the company should be actively doing business in the EU.

The report dives into the details of the current F-Gas Regulation to highlight how it can be strengthened to close loopholes to the advantage of the industry, the economy, and the climate as a whole. To that end, it covers topics such as training, incentive schemes, illegal trade and reclamation.

shecco plans to continue monitoring market readiness on an ongoing basis to help guide policymakers throughout the F-Gas revision.

[Download the report](#)

[r744, 17 November 2020, By Franco Sebastián D'Aprile](#)

8. Kyrgyzstan beats the heat: Ratification of the Kigali Amendment targets refrigerants that contribute to global warming

For a small, land-locked country in Central Asia, Kyrgyzstan is taking big strides forward in their commitment to fight climate change and strengthen global environmental protection. On [8 September 2020], the Kyrgyz Republic ratified the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer.



The Montreal Protocol was created to reduce the production and consumption of ozone depleting substances (ODS) to protect Earth's ozone layer. The Kigali Amendment was adopted by 197 parties on October 15, 2016, in Kigali, Rwanda. The amendment calls for the phase-out of hydrofluorocarbons (HFCs). HFCs are organic compounds used as refrigerants in cooling equipment that became popular as an alternative to ODS such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs).

Though HFCs are not directly harmful to the ozone layer, they are a powerful greenhouse gas much more potent than carbon dioxide. The amendment aims to achieve 80% reduction in HFCs by 2047. With global cooperation this plan of action could prevent up to a 0.4 °C increase in global temperature by the end of the century.

The ratification of the Kigali Amendment by the Kyrgyz Republic will require collaboration between the government and the cooling industry. This provides opportunity for capacity building in the refrigeration servicing sector with potential benefits for equipment manufacturers and owners including modernizing technology that can reduce energy costs and the frequency of breakdowns.

According to Mr. Mars Amanaliev, the Kigali Amendment is “a new stage of development. [Kyrgyzstan] prematurely completed the withdrawal of HCFCs in 2020, but HFCs are being actively implemented instead. It is important to start work on reducing HFC consumption in a timely manner and not repeat previous mistakes when replacing technologies from CFCs to HCFCs.”

Mars Amanaliev is the Head of the Ozone Center of Kyrgyzstan. The Ozone Center was established in 2002 and for the last 18 years has been coordinating the phase-out of ODS from the Kyrgyz Republic. The Ozone Center is responsible for the implementation of the State Program, works closely with the Refrigeration and Air Conditioner (RAC) Association, assists the business community by building technical capacity in the country, and raises public awareness about the dangers of UV radiation.

Currently the Ozone Center ensures that recommended actions to protect the ozone layer are being successfully implemented in the republic. This includes completion of three state programs that effectively removed all ODS groups (CFCs, HCFCs, halons, methyl bromide

and others) from the country in 2020 and introduced the provisions on the protection of the ozone layer into national environmental legislation.

Eighteen years of previous experience has provided the Kyrgyz Republic with the guidance needed to accomplish the goals of the Kigali Amendment. Next steps include the implementation of national legislation in the climate sector of Kyrgyzstan, extracting the maximum benefit for the country from attracting investments, strengthening personnel, creating a foundation for the preparation and implementation of new green technologies, increasing energy efficiency in the cooling technology sectors, and minimizing the country's import dependence from synthetic refrigerants.

The Kigali Amendment will face some obstacles along the way. Barriers to the successful implementation of the Kigali Amendment include expense (some new technologies on natural refrigerants are more expensive compared to ones currently in place), changing safety standards, illegal trade prevention and energy efficiency policy. Solutions to these obstacles include “enhanced international cooperation in the transfer of modern technology, harmonization of new standards, digitalization of the economy, and synergy with other conventions,” according to Amanaliev.

Ratifying the Kigali Amendment will contribute to a gradual reduction in the consumption of HFCs in refrigeration systems and climatic equipment. For the Kyrgyz Republic, the replacement of HFCs with alternative technologies represents the progress of a larger environmental strategy to strengthen administrative barriers to the circulation of chemicals, implement national legislation in the climate sector, create a foundation for a growing green economy, increase energy efficiency, eliminate environmental damage and contribute to combating climate change at an international scale.

[UNDP, Kyrgyz Republic, 22 November 2020, By Nicole Di Cintio](#)

9. The 51st International HVAC&R Congress and Exhibition goes virtual

This year, the annual “International HVAC&R Congress and Exhibition” in Belgrade, Serbia, 2-4 December 2020, goes virtual. Registration and participation is free-of-charge.

You are welcome to [register](#)



You are cordially invited to explore the virtual exhibition booths and conference halls 1-3:

Hall 1: Opening and recorded presentations

Hall 2: Webinars and panel discussion

Hall 3: Coffee club and networking

The pre-recorded opening ceremony will start on Wednesday, 2 December 2020, at 10.00 Belgrade time with in Hall 1. The programme is available [here](#)

Please visit the joint exhibition booth of Serbia's Ministry of Environmental Protection, UNEP OzonAction and UNIDO, which has been set up as part of Serbia's HCFC phase-out management plan (awareness component).

You can explore Montreal Protocol related publications and videos and enter the chat every day between 14:00-15:00 Belgrade time.

Learn more >>>

Congress website <http://kqh-kongres.rs/index.php/en/> or <https://bit.ly/2HI2KTW>

Frequently asked questions: <https://kqh2020.com/en/questions>

Registration support: support@smeits.rs

Hashtags: #jasamnakgh or #kqhgoesonline

10. Desmantelada una organización criminal dedicada al tráfico ilegal de gases fluorados

La Guardia Civil de la Región de Murcia y Vigilancia Aduanera de la Agencia Tributaria en Murcia han desarrollado la operación 'Fluoris', una investigación dirigida a esclarecer el supuesto tráfico ilegal de gases fluorados por una empresa de Alhama de Murcia, que ha culminado con la desarticulación de una organización criminal



presuntamente dedicada a la comercialización fraudulenta de envases y gases de este tipo prohibidos por la Unión Europea.

Hasta el momento, la investigación ha permitido la detención de tres personas (dos en Murcia y una en Granada) y la investigación de otras cinco personas (cuatro en Murcia y una en Granada) como presuntas autoras de los delitos de contrabando, contra la Hacienda Pública, contra los recursos naturales y el medio ambiente, estafa y otros delitos de riesgo, según informaron fuentes de la Benemérita en un comunicado.

Efectivos del Servicio de Protección de la Naturaleza (SEPRONA) de la Benemérita y el Área Regional de Vigilancia Aduanera en Murcia abrieron la operación el pasado mes de junio cuando Vigilancia Aduanera solicitó la colaboración de la Benemérita para verificar la supuesta comercialización ilegal de envases o cilindros desechables de gases fluorados utilizados, habitualmente, para la refrigeración comercial tanto de espacios comerciales, como de vehículos y camiones de transporte de mercancías perecederas, entre otras cosas.

La Guardia Civil y la Agencia Tributaria advierten que el empleo de envases no recargables desde los que se trasvasa el gas a botellas recargables para dar apariencia de producto regular desde el punto de vista fiscal, medioambiental y aduanero, puede ocasionar riesgos en su manipulación, además de originar un exceso de residuos, por lo que, desde 2007, este tipo de envases están prohibidos por la Unión Europea.

Las pesquisas practicadas por los investigadores permitieron localizar una nave industrial en el municipio de Alhama de Murcia donde, supuestamente, se almacenaban este tipo de productos para su posterior venta. Los investigadores decidieron, a partir de ese momento, centrar sus actuaciones en la detección del proveedor de los productos irregulares a la empresa de Alhama de Murcia.

Almacén clandestino con un millar de bombas en Granda

La investigación practicada sobre este primer enclave condujo a los investigadores hasta la provincia de Granada, lugar del que partían los envases supuestamente almacenados en la nave de Alhama de Murcia.

En el municipio granadino de Atarfe, Vigilancia Aduanera y la Guardia Civil localizaron un almacén clandestino que fue inspeccionado. En su interior se localizaron 996 bombonas no retornables y diversos tipos de gases fluorados, que se encuentran actualmente custodiadas por la Agencia Tributaria.

Fruto de esta inspección, fue localizado y detenido el principal líder de esta organización criminal quien, según se desprende de la investigación, se dedicaba a traspasar manualmente con un compresor no homologado a botellas recargables, los gases traídos desde Rumanía. Estos gases posteriormente eran suministrados a sus clientes en el mercado nacional con un etiquetado incorrecto.

Además, una mujer, que trabajaba de forma ilegal en la citada nave, ha resultado investigada por su presunta participación en los delitos esclarecidos.

Los productos hallados en esta nave clandestina de Granada habrían generado unas ganancias de más de 155.000 euros, por fraude a la Hacienda Pública en impuestos no abonados, ya que cada uno de los envases vendidos repercute más del 800% de ganancia con respecto a un envase de gases fluorados debidamente reglamentados y autorizados

para

su

comercialización.

Botellas con etiquetado adulterado

Los investigadores continuaron con el desarrollo de la operación e inspeccionaron la nave de Alhama de Murcia, donde se hallaron otras 889 bombonas que se encontraban almacenadas en el interior de un contenedor marítimo sin las debidas medidas de seguridad, lo que, a temperaturas que en época estival llegan a alcanzar los 40º, podría haber generado riesgo en los inmuebles colindantes.

La inspección culminó con la detención de dos personas presuntamente relacionadas con la trama delictiva descubierta. La investigación continuó hasta lograr identificar a otras cuatro personas, clientes de la supuesta distribuidora de Alhama de Murcia, que regentan talleres en la Región de Murcia y que han resultado investigadas como presuntos miembros del grupo criminal ahora desmantelado.

Los informes periciales emitidos por el Laboratorio Central de Aduanas de la Agencia Tributaria sobre las botellas aprehendidas en las dos naves han determinado que, en algunos casos, los gases no se corresponden con el etiquetado de la botella, lo que constituye un presunto delito de estafa, además de implicar un fraude fiscal, dado que esas botellas con etiquetado adulterado no se declaraban, y de suponer también un problema de competencia desleal en el sector.

Gases

fluorados

La Guardia Civil y la Agencia Tributaria recuerdan que la refrigeración es esencial en la vida cotidiana. Los alimentos se enfrían, congelan, almacenan, transportan y exhiben en unidades refrigeradas; y las viviendas, oficinas, automóviles, trenes, aviones requieren climatización.

Su comercialización se encuentra regulada, tanto en el tipo de envases en que deben distribuirse, como en los tipos de gases autorizados, suponiendo un desfallo a la Hacienda Pública comercializarlos de forma ilegal, a través del mercado 'negro', y un daño a la capa de ozono el trasvase artesanal de estos productos y el uso de aquellos prohibidos por la Unión Europea.

Los gases fluorados introducidos eran de las tipologías R134a , R410a , R507, R407c, R32, R437a, R1234yf, R452, R507, R407h y R22 siendo todos gases que agotan la capa de ozono , siendo considerado el R22 muy peligroso para la capa de ozono estando prohibido por la Unión Europea.

A su vez, el hecho de que esta organización criminal manejara habitualmente envases no recargables que, sin embargo, utilizaba para rellenar botellas recargables para alargar su vida útil, implica una práctica de riesgo en su manipulación, que es lo que pretende atajar la UE al prohibir la utilización misma de los envases no recargables. La operación continúa abierta y no se descartan nuevas actuaciones.

[Europa Press, 6 de noviembre de 2020](#)

See also >>> [Spanish raids seize 19 tonnes of illegal refrigerant, CoolingPost, 15 November 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 >>>](#)

LATIN AMERICA AND CARIBBEAN

11. NatRef training facilities emerge in Latin America

As natural refrigerant-based systems are increasingly installed in Latin American countries, more training opportunities for technicians are beginning to emerge, according to a training panel at ATMOSphere America's first Latin America day last week.



[ATMOSphere America](#), organized by [shecco](#), publisher of this website, was held online October 20 and 21 and concluded with a Latin America-focused program in Spanish on October 22. It was the ninth edition of the annual conference, and the first held online.

The training session featured representatives from UNIDO (United Nation Industrial Development Organization), CO₂ Training Center Mexico, IIAR (International Institute of Ammonia Refrigeration), and U.S. component manufacturer Emerson, who discussed current training opportunities and challenges.

At the CO₂ Training Center Mexico in Cuautlalpan – funded by manufacturers Danfoss, Güntner, and Bitzer - students have an opportunity to gain real experience with commercial and industrial refrigeration systems – either at the training center or in actual installations. “When students start their courses, they think CO₂ is rocket science,” said David Rios, technical advisor and professor at the CO₂ Training Center Mexico. “But when they start realizing that this technology is quite easy to manage, their perspective and motivation change completely.” Forty participants have completed the courses so far.

Training like this is needed to help bring more CO₂ installations to Latin America, which still is a “low number of CO₂ installations” compared to other regions in the world, said Rios. Specialized training is needed for natural refrigerant systems, given their extra complexity versus a direct expansion system with R404a, noted Alonso Amor, Technical Manager – Mexico for Emerson’s Commercial and Residential Solutions Business, Latin America.

From his experience, Rios sees a lot of interest in natural refrigerants, and calls for technicians to be ready. “There are several CO₂ installations planned in 2021 in Mexico, and we need qualified engineers and technicians who can contribute to these projects.”

In Colombia, there is a training center offering courses on CO₂ and propane (R290) refrigeration, with both local and International experts. In addition, the local industry association ACAIRE (Colombian Association of Air Conditioning and Refrigeration) and Emerson, with funds from the Canadian Development Agency, are working to bring a transcritical CO₂ container for technician training that will travel throughout the country.

Emerson also offers training on R744 in Brazil, considered a crucial market in Latin America.

Hydrocarbon training

Natural refrigerants have been used since the 1830s, well before the first f-gas refrigerants were commercially available. “We are coming back again to the initial point of natural refrigerants,” said Omary Acevedo, UNIDO consultant and training expert.

Acevedo said that several countries are considering their own training centers on hydrocarbon systems. “As hydrocarbons are widely used in domestic and commercial applications, countries are carrying out training workshops or even planning to create dedicated centers to teach how to manage these refrigerants. And this will be reinforced until 2030.” To find out about training courses, technicians should get in touch with their local Ozone Office, she said.

About 40% of technicians in Latin America go to a “recognized institution” that guarantee training according to global standards and procedures, noted Acevedo.

The growing sophistication of refrigeration controls is something that requires training, speakers noted. “When there is a higher complexity in managing the system and components, people need to know how to implement and use advance control algorithms.” said Emerson’s Amor. “Improving the training on inverter technology and electronic devices is key,” added Acevedo.

Regarding ammonia-based systems, Yesenia Rector, IIAR’s International Director, observed that “these systems can be installed at any time anywhere without risks, as long as recognized and worldwide-accepted safety practices and guidelines are taken into account.” She gave an overview of the current norms and standards related to ammonia, and said IIAR is also working on hydrocarbons and CO₂ standards.

[Hydrocarbons21, 29 October 2020, By Pilar Aleu](#)

12. Colombian police seize R22 shipment

Police in Columbia have seized 200 cylinders of the ozone-depleting HCFC refrigerant R22 after stopping a container lorry in the Caribbean port city of Barranquilla.

The shipment, valued at COP160m (US\$44,000), did not have the necessary supporting documentation.

While R22 is not banned in Colombia, it is a controlled substance and currently being phased out under the Montreal Protocol. Within the framework of the strategy against smuggling, illicit trade and tax evasion, Barranquilla tax and customs police is cracking down on the illegal commercialisation of refrigerant gases.



[CoolingPost, 16 November 2020](#)

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 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.

Our technical assistance and project delivery requirements, a number of our Regional Network and Thematic Working Groups have been postponed. But assured that the CAP teams are working on contingency plans to continue the dialogue and to re-schedule all postponed events until the situation allows. In the meantime, our Regional Coordinators are continuing to provide technical services to promote exchange of information and experiences between Ozone Officers.

Just like you and your colleagues, our CAP teams have had to adjust. But we have continued to work and adapt to ensure we meet our obligations. All of our CAP teams are working on contingency plans to continue the dialogue and to re-schedule all postponed events until the situation allows. They are also continuing to work with our partners, and to UNEP headquarters through video conferencing, email and phone. They are all active and available for communication with all National Ozone Officers.

Since 1987, UNEP OzonAction has been and will continue to be the implementation of the Montreal Protocol and we will continue to work together with you on your country's compliance priority. We will continue to work with you on your country's compliance priority. We will continue to work with you on your country's compliance priority.

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 members of OzonAction, including the Regional CAP teams in your country.

Be safe and stay motivated. Your health and your resilience counts.

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



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.

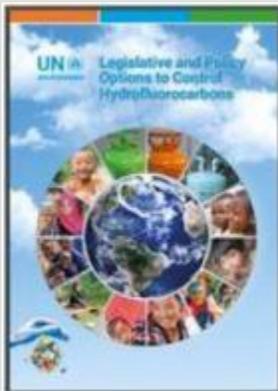
This application, consisting of short instructional videos on techniques, safety and best practice, serves as a complementary training tool for refrigeration and air-conditioning (RAC) sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training.

New videos on flammable refrigerants just added!

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

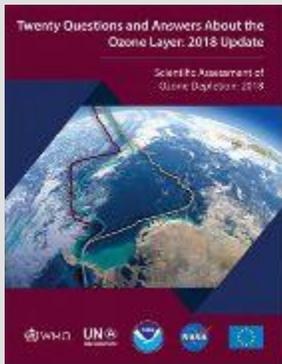
OzonAction Multimedia Video Application: Refrigeration and Air-conditioning Technician Video Series [Available in the Android Play Store](#) and [Apple Store/iTunes](#). (Just search for “OzonAction”, or scan this QR code)

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](#)

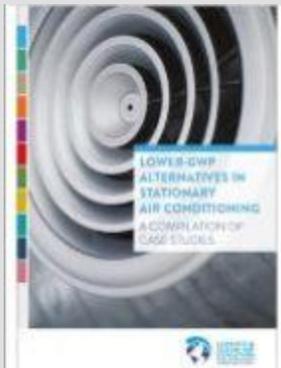
[...] This study provides a broad view of the composition, size and value of the industry, and projections for its future. This will assist industry and policy makers with management of ozone depleting substances as they are phased out, and synthetic greenhouse gases, including hydrofluorocarbons (HFCs) 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



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

- Immediate and permanent access to the latest research and to IJR archive
- Access the latest articles as soon as they become available online.
- Browse, search and read each one of the nearly 4,500 papers since Volume 1, Issue 1.
- Unlimited access to seminal contributions to the field of refrigeration dating back to 1978.
- Keep up-to-date with subscriptions to customized e-alerts on New Volumes, Topics and saved Searches. Enhanced content and functions
- Easily export references, citations and abstracts.
- Print, download or share articles with colleagues or peers.
- See which papers, published in Elsevier or elsewhere, have cited any selected article.

- Consult the research highlights overview of articles in volumes from 2012 onwards.

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



[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 >>>](#)



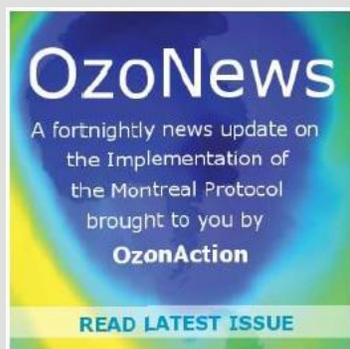
[Delivering a Covid-19 Vaccine: Sustainable Cold Chain for Equitable Vaccine Distribution](#)

Wednesday, 9 December 2020

8:00 am - 9:30 am PST | 4:00 pm - 5:30 pm GMT | 9:30 pm - 11:00 pm IST

The Kigali Cooling Efficiency Program (K-CEP) invites you to join a timely discussion on the challenges and opportunities of ensuring a sustainable cold chain for equitable Covid-19 vaccine distribution.

[Register for Webinar >>>](#)



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