

OzoNews

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

Volume XXII | 15 May 2022

In this issue:

1. Kigali Amendment latest ratifications
2. World Refrigeration Day 2022 - UNEP & partners raise profile on cold chain with support of world-renowned chefs
3. A renewed rise in global HCFC-141b emissions between 2017–2021
4. How can servitisation help cool the planet?
5. Sustainable cooling: an essential part of a just and equitable energy transition
6. Take a deep dive into the illegal trade in climate-harming gases with EIA Global Crime Tracker
7. As it bakes, Egypt looks to the cooling power of the sea for help
8. Implementation of training courses to deal with modern refrigeration instruments (Egypt)
9. Asia-Pacific Ozone Officers geared for first in-person network meeting this July
10. CSIR-CFTRI experts focus on need of Integrated Pest Management (India)
11. Actualizan cursos sobre refrigeración y aire acondicionado (Cuba)
12. Ministerio de la Producción (PRODUCE) fortalece capacidades de técnicos de todo el país del sector de refrigeración y aire acondicionado (Peru)
13. Senate Foreign Relations Committee approval of the Kigali Amendment
14. Propane Refrigerant Factsheet by The North American Sustainable Refrigeration Council (NASRC)
15. Turkmenistan, UNIDO Implement Joint Project to Reduce HCFC Usage
16. Adoption of new air-conditioning safety standard a milestone for climate-friendly cooling

GLOBAL



1. Kigali Amendment latest ratifications

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

[Morocco, 22 April 2022](#)

[United Republic of Tanzania, 25 March 2022](#)

[Spain, 20 January 2022](#)

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](#)

Image: UN Treaty Collection website

2. World Refrigeration Day 2022 - UNEP & partners raise profile on cold chain with support of world-renowned chefs



**COOLING
KEEPS FOOD FRESH**

To celebrate World Refrigeration Day, June 26, [UNEP OzonAction](#), the [Secretariat of World Refrigeration Day](#) (WRD), [Chefs4thePlanet](#), and the [Global Food Cold Chain Council](#) (GFCCC) are partnering to raise the profile and awareness about the essential role of cooling in protecting human health and the planet. The Cooling Keeps Food Fresh campaign will describe why cooling is necessary for food safety and how it supports

nutritious diets that sustain our health, help reduce food loss and waste, and protect the environment.

Leading chefs from around the world have signed on to the campaign thanks to Chefs4thePlanet organization, the new partner joining this year's campaign. They will explain how cooling is necessary for their locally inspired cuisine. The chefs' recipes will be accompanied by tips for consumers on the cooling choices they can make in their homes to save money, prolong the life of products, and understand how food waste and loss contribute to climate change.

During the campaign, chefs from various regions of the world will deliver video messages, reinforcing their commitment to maintaining a planet sustainable for human life and describing how cooling contributes to day-to-day cooking and their kitchens' operations.

According to estimates compiled by the Food and Agriculture Organization (FAO), by 2050 we will need to produce 60 per cent more food to feed a world population of 9.3 billion. The truth is that the way we produce, process, distribute, and consume our food is profligate. Roughly one-third of all the food produced in the world for human consumption every year -- approximately 1.3 billion tonnes -- is lost or wasted. Avoiding food loss will lead to more efficient use of land and water, positively impacting biodiversity.

The contributions of cooling to our health and the environment extend much further. Freezing fruits and vegetables within hours of being harvested at their peak ripeness, locks in nutrients and flavours. Cooling also reduces one of the largest contributors to climate change - the emission of greenhouse gases from food that is lost due to spoilage and waste. Reducing food loss would feed greater numbers of undernourished people and advance climate protection. In addition, the wise selection and operation of cooling technology contributes significantly to the protection of the ozone layer and combating climate change.

Further details and resources about the campaign will be shared shortly.

Contact: [Ayman Eltalouny](#), OzonAction, Coordinator International Partnerships

[UNEP OzonAction, 12 May 2022](#)

Image: OzonAction website

3. A renewed rise in global HCFC-141b emissions between 2017–2021

Abstract

Global emissions of the ozone depleting gas 1,1-dichloro-1-fluoroethane (HCFC-141b, $\text{CH}_3\text{CCl}_2\text{F}$), derived from measurements of atmospheric mole fractions, have been rising between 2017–2021 despite a fall in reported production and consumption for dispersive uses.



Atmospheric Chemistry and Physics



This study evaluates the possible drivers behind this renewed rise in emissions. HCFC-141b is a controlled substance under the Montreal Protocol, and its phase-out is currently underway, after a peak in reported consumption and production in developing countries (Article 5) in 2013.

If reported production and consumption are correct, it suggests that the 2017–2021 rise is due to an increase in emissions from the bank when HCFC-141b containing appliances reach the end of their life, or from production of HCFC-141b not reported for dispersive uses.

Regional emissions have been estimated between 2017–2020 for all regions where measurements have sufficient sensitivity to emissions. This includes the regions of northwestern Europe, east Asia, the USA and Australia, where emissions decreased by a total of $1.6 \pm 3.9 \text{ Gg yr}^{-1}$, compared to a mean global increase of $3.0 \pm 1.2 \text{ Gg yr}^{-1}$ over the same period.

Collectively these regions only account for around a third of global emissions in 2020. Therefore, we are not able to pinpoint the source regions or specific activities responsible for the recent global emission rise.

Authors: Luke M. Western, Alison L. Redington, Alistair J. Manning, Cathy M. Trudinger, Lei Hu, Stephan Henne, Xuekun Fang, Lambert J. M. Kuijpers, Christina Theodoridi, David S. Godwin, Jgor Arduini, Bronwyn Dunse, Andreas Engel, Paul J. Fraser, Christina M. Harth, Paul B. Krummel, Michela Maione, Jens Mühle, Simon O'Doherty, Hyeri Park, Sunyoung Park, Stefan Reimann, Peter K. Salameh, Daniel Say, Roland Schmidt, Tanja Schuck, Carolina Siso, Kieran M. Stanley, Isaac Vimont, Martin K. Vollmer, Dickon Young, Ronald G. Prinn, Ray F. Weiss, Stephen A. Montzka, and Matthew Rigby

[European Geosciences Union \(EGU\), Atmospheric Chemistry and Physics, 27 April 2022](#)

Image: EGU website

4. How can servitisation help cool the planet? *Staying cool in a warming world*

The Basel Agency for Sustainable Energy (BASE), recently released a comprehensive white paper tracing the application of the servitisation model to the cooling industry through its flagship initiative: Cooling as a Service (CaaS). [...]

In response to the global surge in refrigeration needs, driven by GDPs growth around the globe, access to technologies and rising temperatures caused by climate change, BASE conceptualised and implemented the CaaS Initiative in 2019, with the financial support of the Clean Cooling Collaborative (formerly known as the Kigali Cooling Efficiency Program, K-CEP), to support markets in implementing clean and energy efficient cooling solutions across the globe. This initiative has successfully mainstreamed the adoption of the



innovative business model Cooling as a Service around the world and across industries and sectors.

In the white paper, the authors Carla Della Maggiora, Dimitris Karamitsos and Thomas Motmans, who founded and co-led the CaaS Initiative, share on-the-ground insights that they gained during this 3-year effort to mainstream the adoption of servitisation in the cooling industry.

The cooling industry forms the invisible backbone of our everyday lives, whether to store food and medical supplies or reduce the temperature of our workplaces and homes, making them comfortable and, in some cases, habitable. While a necessity, the continuous reliance on old or low-cost equipment, often stemming from the fact that companies do not typically consider cooling a priority investment, results in harmful impacts on global warming. For instance, air conditioning alone accounts for 10 percent of global electricity consumption, while common refrigerants used like hydrofluorocarbons have 200 to 20,000 the global warming potential (GWP) of carbon dioxide. Moreover, the International Energy Agency forecasts that space conditioning energy use will triple by 2050 compared to current levels. While developing countries have recorded the fastest cooling demand growth in recent years because of rising populations, urbanisation levels, and incomes, they still lack access to cost-effective and eco-friendly cooling technologies. Sitting at the nexus of three international commitments, the Paris Agreement, the 2030 Agenda for Sustainable Development, and the Kigali Amendment to the Montreal Protocol, sustainable cooling implementations bring the needs of the people and planet into the otherwise profit-centred operational frameworks of businesses.

Since its inception, CaaS has demonstrated how innovative business and financial models will be required to incentivise investments in clean and energy-efficient cooling systems if we want to get a grip on climate change *now*.

Understanding the idea of servitisation

Within a global movement to transform our business, industrial, and economic models to tackle the environmental crisis, the concept of servitisation caters to the long-term objectives of increasing the affordability and uptake of modern, high-quality energy-efficient products. Unlike the traditional selling model, in which consumers purchase a good from a company, own and maintain it till the end of its life cycle, the servitisation model keeps the ownership of the product in the hands of the technology providers, who pay for its operations and upkeep in exchange for a fee from the end-users.

Servitisation is not a brand-new concept – it has been used and proven effective in several industries, primarily printing and solar photovoltaics. The first has been a pioneer in bringing the pay-per-use model to the general public. By blending the model with the Internet of Things technology, it enabled users to have printers ordering their cartridges when approaching low ink levels and sending real-time alerts when system failures occur, automatically requesting a technician dispatch. In the solar industry, undertones of the servitisation model were seen in power purchase agreements (PPAs). Under a PPA, the electricity sellers retain the ownership of the panels installed on the user's roof, who pays for the electricity used from the equipment, enabling him/her to start benefiting from solar power with no upfront cost.

As suggested by the two examples, the servitisation model offers a myriad of advantages for the customers, notably sparing them the upfront investment of installing the equipment, minimising operation, and technology risks, and reducing the overall utility costs. Moreover, by leaving the responsibility of equipment maintenance, including repairs and update to new regulations, to the technology providers, end-users can pay undivided attention to their core business, while contributing towards their climate targets by using servitisation for energy-efficient appliances.

On the side of technology providers, servitisation significantly improves the perceived value of its product by clients, as it increases its benefits while reducing initial costs. Above the enhanced differentiation from competitors, this process greatly increases the life-cycle earnings per system by using them to their optimum capacity and on top of that creates predictable, continuous revenue streams.

The providers can overcome risks posed by fluctuating consumption by creating a diversified portfolio of clients and sectors. Furthermore, data monitoring through IoT is also vital for accurately measuring customers' needs and adapting the offer accordingly. The model creates incentives for the provider to design goods with longer durability and to extend product life through repair and remanufacturing, to maximise value recovery at the end-of-life, and to optimise resources efficiency across the entire product life cycle through modular systems that allow for the repurposing of the equipment to keep pace with the changing requirements of the end-users; all of it contributing to the transition to a circular economy. [...]

To learn more, find the full white paper [here](#)

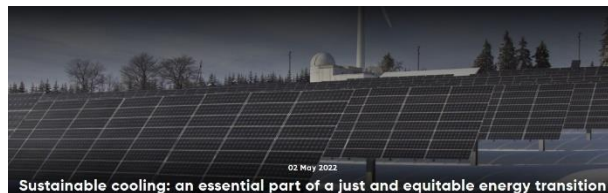
[Cooling as a Service \(CaaS\), 4 May 2022](#)

Image: CaaS website

5. Sustainable cooling: an essential part of a just and equitable energy transition

Sustainable cooling is essential for meeting climate and Sustainable Development Goals (SDGs), or what is increasingly discussed as a “just and equitable energy transition”. For the 736 million people living in extreme poverty and the roughly similar population without access to electricity, this represents a great challenge – one increasingly recognized and becoming a subject for climate finance.

As the world warms, around 30 percent of the global population is exposed to life-threatening heat for at least 20 days a year. The recent [IPCC report](#) reviewing climate impacts and adaptation emphasizes both the expected increase in frequency of extreme heat events and much greater vulnerability of low-income populations in developing nations with low adaptive capacity. Even in a low-emissions scenario, the authors



concluded, 50 percent of humanity may be exposed to life-threatening conditions arising from extreme heat and humidity by 2100.

As several [SEforALL reports](#) have explained, cooling is essential for multiple SDGs: to protect against the risks of extreme heat, provide the cold chains needed for vaccines, to reduce food waste and improve food security, as a pathway for increasing the incomes of rural farmers, and to limit extreme heat in urban developments.

While some cooling needs can be met with nature-based or passive cooling solutions – such as planting trees or using heat reflective paint on buildings – for many, equitable access to sustainable cooling hinges on access to electricity to power cooling devices (active cooling). At the same time, continued reliance on inefficient devices could have drastic consequences for energy demand, energy access, and emissions.

Less than 10 percent of the almost 3 billion people living in the hottest parts of the world possess air conditioners. The combination of rising temperatures and incomes means this figure is growing rapidly; by 2050 it has been projected around 2/3 of the world's households could have an air conditioner – more than a billion new units.

Without subsidies or strict performance standards, low-income consumers will buy the lowest cost and typically least energy-efficient equipment, some still using potent greenhouse gases as refrigerants, locking in their use for a decade or more. The resultant growth in demand for power has been described as a “veritable carbon time bomb.” The need is increasing and increasingly urgent for environmentally sustainable, efficient, and affordable cooling solutions, sufficient to meet local needs, supported by technologies, policies, financing, and services.

Much of the focus on extreme heat risks has to date focused on urban areas, where temperature extremes are exacerbated by “heat islands”, the lack of vegetation, and the vulnerability of poor slum dwellers. SEforALL and the World Bank are working together to show that the risks in rural areas could be equally or more significant as the populations are typically poorer and more dependent on small farms highly vulnerable to extreme temperatures.

Rural populations are also more likely to lack access to a reliable, affordable source of electricity to power active cooling, and the absence of cooling also limits access to vaccines and good healthcare services. Declining opportunities in rural areas are also likely to accelerate migration to cities expanding urban slums and social problems.

The challenge is to identify strategies that simultaneously address the need for cooling and provide access to modern energy while also responding to climate change – all elements of a just, equitable energy transition. Fortunately, there is growing recognition that climate action must support development goals and the needs of the poorest and most vulnerable populations.

Both the February 2022 report of the IPCC on climate change impacts, adaptation and vulnerability, and the November 2021 Glasgow climate meetings, COP26, framed many of their conclusions around this objective. As IPCC vice-chair Ko Barrett explained, an effective response to climate change requires asking “Are we being fair and careful not to further disadvantage poor, vulnerable and under-represented populations?”

A statement on “Conditions for a Just Transition Internationally” prepared for COP26 and signed by 16 developed countries and the EU acknowledges their climate actions need to be fully inclusive and benefit “the most vulnerable through the more equitable distribution of resources, enhanced economic and political empowerment, improved health and wellbeing, resilience to shocks and disasters and access to skills development and employment opportunities.”

These high-level declarations indicate new awareness of the importance and meaning of a just transition. There are also some recent initiatives toward putting this rhetoric into action. One is a significant commitment of climate funds to sustainable cooling projects.

Until recently, climate finance for access to cooling had been very limited outside of projects that promoted higher efficiency appliances and buildings. Notably, such projects qualify as both mitigation and adaptation by reducing energy needs while also providing protection from extreme heat.

In October 2021, the Green Climate Fund approved USD 157 million for a new facility to help finance sustainable cooling projects implemented by the World Bank with an additional USD 722 million in leveraged co-finance. The facility will support nine countries to develop low-carbon and inclusive cooling solutions and focus on space cooling, refrigeration, and cold chains. In Kenya and Malawi, the facility will specifically address rural communities and ways of increasing their agricultural production.

The importance of sustainable cooling as a condition for the SDGs and climate goals appears belatedly to be receiving the attention it deserves. But with the clock ticking on the SDGs and a closing window for meeting the Paris climate goals, we have to move faster. This means rapidly scaling up investment in innovative cooling technologies and business models that make lifesaving cooling solutions affordable for all – and sustainable for the planet. In a warming world, we cannot deliver just and equitable energy transitions without them.

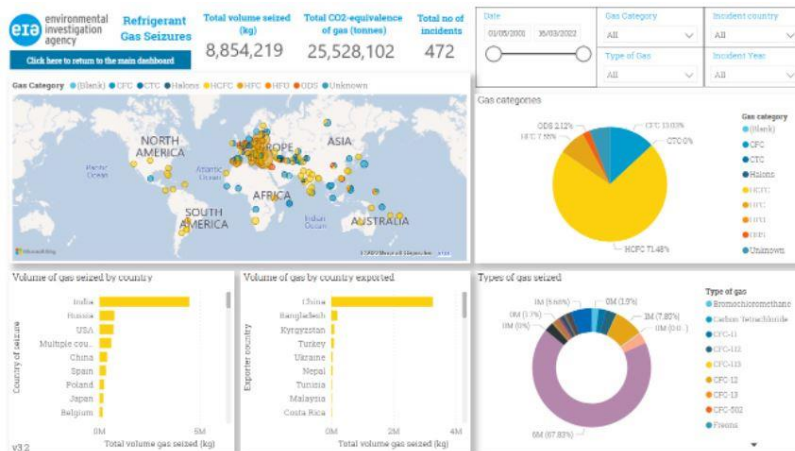
Source: [Alan Miller](#), Senior Advisor to the Cooling for All Secretariat and [Ben Hartley](#), Principal Specialist, Energy Efficiency and Cooling

[CoolCoalition, 2 May 2022](#)

Image: CoolCoalition website

6. Take a deep dive into the illegal trade in climate-harming gases with EIA Global Crime Tracker

Refrigerant gases have now been added to EIA’s first-of-its-kind Global Environmental Crime Tracker.



The tracker allows users to analyse and learn more about the biggest eco-crime no-one has heard of.

EIA has 30 years of experience investigating and exposing the illegal trade in environmentally damaging refrigerant gases. Following the Montreal Protocol's phase-out of ozone-depleting substances, an illegal trade in these chemicals emerged in the 1990s, undermining efforts to repair the hole in the ozone layer.

Three decades later, we are now seeing a surge of illicit trade in climate-wrecking hydrofluorocarbons (HFCs). HFCs were introduced as replacements to their ozone-destroying predecessors but are now being phased down in efforts to combat climate change, with the European Union's F-Gas Regulation an example of early action.

EIA estimates that the potential climate impact of this illegal trade in the EU could amount to the greenhouse gas emissions of more than 6.5 million cars being driven for a year. Further information on this chilling crime can be found in our reports *Europe's Most Chilling Crime* and *Doors Wide Open*.

Low risks and high profits make the illegal refrigerant trade attractive to criminal networks, yet it is often not a priority for enforcement agencies and penalties are usually minor for a crime that nevertheless costs governments and legitimate businesses millions in lost revenue and results in significant emissions of ozone- and climate-damaging gases.

The [global refrigerant seizure tracker](#) has been developed with EIA Intelligence Team and contains information dating back to 2001.

Seizure data is collated from news reports, data submitted to the Montreal Protocol and direct communications with governments and enforcement authorities. The interactive dashboard and live mapping allow users to zero in on precisely the information they want, such as refrigerant type, exporting country and smuggling method.

[EIA] believe in sharing information to bolster awareness and enforcement efforts around the world, [EIA] made the tracker free to use and accessible for everyone, from fellow environmental campaigners to journalists and the public.

[EIA] welcome further information on refrigerant gas seizures. If you have data to share, please contact [Sophie Geoghegan](#).

[Environmental Investigation Agency \(EIA\), April 2022](#)

Image: EIA website

International contest of scholar articles on the topic of “The Ozone Layer and Life on Earth”(Republic of Uzbekistan) - Regulation on the procedure for selecting scholar articles devoted to the protection of the ozone layer for the international contest under the Joint project of the State Committee of the Republic of Uzbekistan for Ecology and Environmental Protection and UNDP/GEF ‘Complete HCFC Phase-out in Uzbekistan through Promotion of Zero ODS Low GWP Energy Efficient Technologies’.



Applications and electronic versions of scholar articles, including a link to the published paper on web-platforms or a scanned copy shall be sent to ozone.o3.uz@gmail.com by **August 1, 2022**

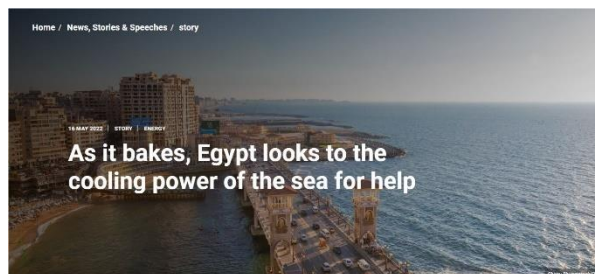
Learn more >>> <https://bit.ly/3L3xl3n> (English) <https://bit.ly/3GnBSzE> (Russian)

AFRICA

7. As it bakes, Egypt looks to the cooling power of the sea for help

As anyone who visits Egypt between the months of May to September can attest, the weather gets hot, often uncomfortably so.

That is especially true in Cairo—a megacity home to nearly 22 million people—where the mercury can hit 40°C. Those sky-high temperatures are partially a product of the so-called ‘heat island effect,’ which sees buildings, roads, and other infrastructure absorb and re-emit the sun’s warmth more than natural landscapes.



Research shows that things will only get worse for cities due to the climate crisis. The United Nations Environment Programme (UNEP) estimates that by the year 2100, many cities across the world could warm as much as 4°C if greenhouse gas emissions continue “at high levels,” - a potential health hazard for inhabitants.

With millions of people in need of air conditioning, it’s no surprise that so much of the power consumption in Cairo is related to cooling. “During the peak summer months, 50 per cent of the electric power goes to air conditioning,” said Alaa Olama, a UNEP consultant, the Head of the Egyptian District Cooling Code and the author of the book *District Cooling: Theory and Practice*.

Egypt is currently building 22 ‘smart cities’, making the country an ideal location for state-of-the-art cooling technologies, said Olama. Many of those efforts have focused on developing city-wide cooling systems that do not rely on electricity from fossil-fuel-fired power plants.

This is particularly important in the fight against climate change because cities contribute greatly to global warming. Rising global temperatures and warming cities create a vicious cycle where increased demand for cooling systems adds to carbon dioxide emissions that further contribute to global warming and create the need for even more cooling.

According to the International Energy Agency, cooling produces more than 7 per cent of the world’s greenhouse gas emissions and these emissions are expected to roughly double by 2050. Amidst rising temperatures, the number of air conditioners in use is expected to rise to 4.5 billion by 2050 from 1.2 billion today.

To help break this cycle, UNEP is working with governments to adopt more climate-friendly cooling practices. For example, UNEP recently concluded a feasibility study on a district cooling system called the Seawater Air-conditioning system for New Alamein City, on the north coast of the country.

Here is how the Seawater Air-conditioning system works: Coldwater taken from deep in the Mediterranean Sea is pumped into a cooling station and passed through a heat exchanger, where it absorbs heat from buildings. Cool air generated from the cold water is used to maintain comfortable temperatures in the buildings, while the warm water is sent back into the sea.

Initially, the project would consist of a single district cooling plant to be built over two years, with 30,000 Tones of Refrigeration (TR) capacity, sufficient to cool entire neighborhoods. The Seawater Air-conditioning system is estimated to cost US\$117 million in building production facilities and a further US\$20-25 million for the distribution network.

With this cooling system, the city would reduce refrigerants emissions by 99 per cent and carbon dioxide emissions by 40 per cent. This is particularly important because these reductions will help Egypt meet its requirements to phase-down hydrofluorocarbon emissions established by the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer. This landmark multilateral environmental agreement regulates the production and consumption of nearly 100 man-made chemicals called ozone-depleting substances.

Since many ozone-depleting substances also contribute to global warming, the Montreal Protocol and the Kigali Amendment - which provides for phasing down harmful

greenhouse gases used in air conditioning, refrigeration and foam insulation - is expected to avoid up to 0.5°C of global warming by the end of this century. This represents a major step in the commitment to limit global warming to below 2°C under the Paris Agreement.

The feasibility study to assess the potential for district cooling in New Alamein City will be published in late May 2022. It is expected to analyze whether it would be financially and technically viable to build a district cooling solution that would reduce or avoid using hydrofluorocarbons.

The study was initiated through the Multilateral Fund of the Montreal Protocol, and UNEP supported the development of an institutional framework. The efforts are being elevated through UNEP District Energy in Cities Initiative, which is taking the study to the level of execution.

UNEP's support for the study is part of a larger effort to reduce the greenhouse gas emissions that come with cooling.

In Egypt, UNEP's OzonAction team is also supporting the development, update, enactment and enforcement of specialized nation-wide codes for ACs, district cooling and refrigerant management, as well as green procurement processes.

The UNEP-led Cool Coalition is helping cities in India, Viet Nam and Cambodia develop environmentally friendly cooling strategies. It is also supporting the construction of networks of freezers, known as cold chains, that can hold everything from farm produce to COVID-19 vaccines.

The concept of using cold water to provide cooling for cities has taken root globally. For instance, in Canada's largest city, Toronto, the local government implemented the largest lake-source cooling system in the world. Commissioned in 2004, Enwave's Deep Lake Water Cooling system uses cold lake water as a renewable energy source. Similar large-scale projects have also been built in the United States and France.

This technology, which was pioneered in the West, has in recent years become popular in the East in the Gulf and Emirate States, which boast the greatest number of district cooling technologies. "It's an important solution for new cities," said Olama.

[The United Nations Environment Programme \(UNEP\), 16 May 2022](#)

Image: UNEP website / Shutterstock/Octasy

8. Implementation of training courses to deal with modern refrigeration instruments (Egypt)

تنفيذ دورات تدريبية للتعامل مع وسائط التبريد الحديثة

قالت الدكتورة نهلة الشاذلي مديرة الاعلام والتوعية بوحدة الاوزون بوزارة البيئة، انه في اطار توجه الدولة لإشراك المجتمع الخاص المحلي والدولي في المشاريع التنموية المفيدة للبلاد، فإن جهاز شئون البيئة ووحدة الاوزون قامت بالتعاون مع الجمعية الامريكية لمهندسي التبريد والتكييف والتدفئة "أشري بيراميدز"، مشيرة إلى أن التعاون يأتي من أجل تنفيذ دورات تدريبية وورش عمل وإعداد أدلة إرشادية للتوعية بمتطلبات الامان والسلامة والصحة المهنية الخاصة بمنتجات التكييف والتبريد، بالإضافة إلى الإدارة السليمة والتعامل الامن لوسائط التبريد الحديثة.

وأكدت الشاذلي، في تصريح خاص لـ "البوابة نيوز"، أن التعاون جاء في اطار أنشطة البرنامج المصري لحماية طبقة الاوزون والذي يهدف إلى الحد من استخدام المواد المستنفذة لطبقة الاوزون، والتحول لاستخدام بدائل وتكنولوجيا صديقة لطبقة الاوزون في القطاعات المختلفة.

وأوضحت مديرة الاعلام والتوعية بوحدة الاوزون بالبيئة، أن برتوكول التعاون يتضمن التوافق على اختيار الجمعية الامريكية لمهندسي التبريد والتكييف والتدفئة "أشري بيراميدز" لكونها متخصصة في مجال التبريد والتكييف وغير هادفة للربح، وذلك لتولي مسؤولية تنفيذ دورات تدريبية وورش عمل واعداد ادلة ارشادية للتعامل الامن مع وسائط التبريد الحديثة والتوعية بمتطلبات الامان والسلامة والصحة المهنية.

[Albawaba News, 11 May 2022, By: Shereen Hanafi](#)

Image: Wikipedia website

ASIA AND THE PACIFIC

9. Asia-Pacific Ozone Officers geared for first in-person network meeting this July

The National Ozone Officers in the South-Asia

(SA), Southeast Asia (SEA) and Pacific Islands (PIC) Networks virtually gathered and agreed to have their first in-person Network meeting from 17-19 July 2022 in Bangkok, Thailand, back-to-back with the forty-fourth meeting of the Open-ended Working Group of the Parties to the Montreal Protocol (OWG-44) from 11-16 July 2022 and the Fifth Extraordinary Meeting of the Parties to the Montreal Protocol (ExMOP5) on 16 July 2022.

The Joint Virtual Meeting of the SA/SEA and PIC Networks, held on 27 April 2022, was organized by the UN Environment Programme (UNEP) OzonAction Compliance Assistance Programme (CAP), Asia and the Pacific Office and was attended by 89 participants (male



40, female 49) consisting of Ozone Officers from the Asia-Pacific Networks, the Multilateral Fund Secretariat (MFS), the Ozone Secretariat, the United Nations Development Programme (UNDP), the United Nations Industrial Development Organization (UNIDO), the World Bank, and Australia and Japan as developed countries partners.

The MFS delivered presentations with highlights on the key decisions taken at the 88th Meeting of the Executive Committee (ExCom), updates on plans for the 89th, 90th and 91st meetings of the ExCom in 2022 with key recommendations to the policy outcomes and unpacked the MLF's plan for the evaluation of activities for 2022, especially the evaluation of the regional networks. It is worth noting that the network countries acknowledged and appreciated the participation of Ms. Tina Birmpili in her new capacity as Chief Officer of the MFS.

Mr. Shaofeng Hu, UNEP Senior Montreal Protocol Regional Coordinator provided the Asia-Pacific Networks' analyses of the countries' compliance status, the Kigali Amendment ratification status in the region and an overview of CAP services delivered to countries. The Ozone Officers also reviewed the planned CAP services for 2022 and agreed to further explore south-south cooperation opportunities when they meet in July in Bangkok, at their first physical meeting since the outbreak of the COVID-19 pandemic.

UNDP, UNIDO, and the World Bank as part of the Multilateral Fund's Implementing Agencies delivered updates, highlights and lessons learned from their work with countries regarding challenges to phase out HCFCs, how to sustain achievements made, and the development of the Kigali HFC Implementation plan at country level.

The Ozone Secretariat recapped issues discussed at the combined Twelfth Meeting of the Conference of the Parties - part II (COP12) and the Thirty-Third Meeting of the Parties to the Montreal Protocol (MOP33) and provided updates on current initiatives of the Ozone Secretariat from 2021-2022, and a brief overview of the organization for upcoming meetings of the 44th OEWG and 5th ExMOP that will also be convened in July, in Bangkok,

The joint virtual meeting was organized as part of UNEP CAP's approved workplan for 2022.

Contact: [Shaofeng Hu](#), Senior Montreal Protocol Regional Coordinator
UNEP, OzonAction Compliance Assistance Programme (CAP), Asia and Pacific Office (ROAP)

Image: OzonAction ROAP website

10. CSIR-CFTRI experts focus on need of Integrated Pest Management (India)

CSIR-Central Food Technological Research Institute, Mysuru, experts deliberated on the importance of Integrated Pest Management in food processing scenario. At a recently



concluded one day national webinar on fumigation and alternative methods for safe storage and trade of food grains: Current and future prospects, experts highlighted that for grain storage pest control was indispensable. [...]

The webinar was themed on six different research fields namely Grain storage management, Fumigation technology, Hermetic technology, Biocontrol technology, Fumigant monitoring and Regulatory aspects. Experts working in the field of grain storage management and pest infestation control also shared their knowledge.

Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI, Mysuru, inaugurated the webinar which is coordinated by Food Protectants and Infestation Control (FPIC) Department.

In the inaugural address, Dr Singh spoke about the importance of grain storage as well as loss of nutritive value of the grain due to insect pests infestations. She also highlighted the requirement of grain storage silos, alternative fumigants and biofumigants for safe storage of food grains etc.

Dr. Prakash M Halami, Chief Scientist & Head, FPIC department, in his introductory remarks emphasised the importance of grain storage loss due to insect pests and food grain damage caused by about 100 different species of insects predominantly comprising of weevils, borers, beetles and moths.

Further, Dr Halami, pointed out ozone layer depletion, insect resistance against phosphine due to excessive usage of fumigants and limitation of ozone gas as a fumigant. Hence, the need of integrated pest management approach in grain storage management is highly focussed on the current scenario. [...]

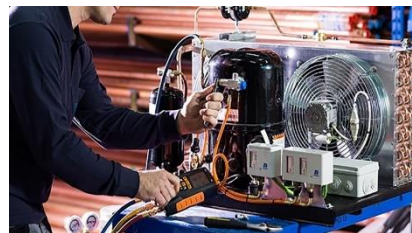
[Food And Beverage News, 13 May 2022, By: Nandita Vijay, Bengaluru](#)

Image: Food And Beverage News website

LATIN AMERICA AND CARIBBEAN

11. Actualizan cursos sobre refrigeración y aire acondicionado (Cuba)

La Habana, 13 may (ACN) Expertos cubanos se reúnen hoy en esta capital para la actualización de los cursos de **Buenas Prácticas en Refrigeración y Aire acondicionado**, anunció la Oficina Técnica del Ozono (OTOZ).



Los debates centrarán la atención en dos acciones fundamentales, una de las cuales es la revisión del reajuste de la propuesta metodológica del nuevo curso de buenas prácticas en refrigeración y climatización 2022.

Además, su vinculación con los hidrofluorocarburos (HFC), potentes gases de efecto invernadero, a fin de promover el uso de novedosas tecnologías alternativas con bajo potencial de calentamiento global, añadió la OTOZ en exclusiva a la Agencia Cubana de Noticias.

La otra es el diseño de la futura estrategia de reducción de los HFC en Cuba, comprometida con la Enmienda de Kigali, capital de Ruanda, que entró en vigor el primero de enero de 2019 y en la cual depositó el instrumento de ratificación, al eliminar gradualmente los fluidos correspondientes.

El mencionado encuentro sesionará en el Hotel Meliá Habana, con la presencia de especialistas de la propia oficina, del Ministerio de Educación, universidades, del Instituto de Refrigeración y Climatización, maestros y otros.

Tales cursos son impartidos en el país hace más de 25 años, durante los cuales se capacitaron a una cifra superior de cuatro mil 500 mecánicos y técnicos.

Nelson Espinosa Pena, Jefe de la Oficina Técnica del Ozono, explicó que la iniciativa de actualización implica adentrarse en una segunda etapa superior, "si tenemos presente que varios de los equipos de esos sistemas que entran a la nación contienen hidrocarburos y las mezclas, de bajo potencial de calentamiento atmosférico.

Con este fin, añadió, las 16 aulas existentes modernizarán sus programas de estudio, lo que permitirá brindar un mejor servicio con más calidad y conocimiento de nuevos equipos y tecnologías.

La eliminación del consumo de 121, 33 toneladas de gases Hidroclorofluorocarburos (HCFC)-141b, de elevado potencial calórico global, constituyó uno de los resultados de relevancia en Cuba que confirmaron en 2021 su vocación ambientalista y la exclusión de sustancias agotadoras del ozono (SAO).

El hecho significó que dejó de emitir a la atmósfera en un quinquenio, cada año, más de 87 mil toneladas de dióxido de carbono, cuya concentración conduce al calentamiento del globo y es la principal causa de la acidificación del océano, debido a su disolución en el agua y formación de ácido carbónico.

Esto último forma parte del Plan Nacional, con vistas a la supresión el gas refrigerante R-141b, y de la producción de las espumas rígidas de poliuretano, elementos destructores de la capa de ozono, una especie de sombrilla que preserva al planeta contra las radiaciones nocivas del Sol.

Cuba es signataria del Convenio de Viena para la Protección de la Capa de Ozono (1985) y del Protocolo de Montreal (1987), relacionados con el control y paulatina eliminación de la producción y el consumo de productos químicos industriales, dañinos al medio ambiente.

Agencia Cubana de Noticias (ACN), 13 Mayo 2022, Por: Lino Luben Pérez

Image: CUBAENERGIA.CU website

12. Ministerio de la Producción (PRODUCE) fortalece capacidades de técnicos de todo el país del sector de refrigeración y aire acondicionado (Peru)



El Ministerio de la Producción a través de la Dirección General de Asuntos Ambientales de Industria (DGAAMI) y el Programa de las Naciones Unidas para el Desarrollo (PNUD) en el marco del Proyecto “Plan de Gestión de Eliminación de los Hidroclorofluorocarbonos (HCFC) – PGEH para el Perú” viene promoviendo capacitaciones desde el año 2019 para fortalecer las capacidades de los técnicos de refrigeración y de aire acondicionado a nivel nacional, los cuales emplean gases refrigerantes en sus labores de mantenimiento, instalación y reparación. [...]

Tal esfuerzo se ha venido materializando a través de capacitaciones y talleres presenciales y virtuales con el objetivo de promover la aplicación de las buenas prácticas ambientales para la eliminación de los HCFC, gases que deterioran considerablemente la capa de ozono del planeta y promover también las sustancias alternativas amigables con el medio ambiente

Las capacitaciones que aún continúan dándose llevan más de 200 técnicos capacitados y más de 130 empresas del sector quienes han sido capacitados y evaluados respectivamente para corroborar su correcto aprendizaje.

Esta acción permite mitigar de la contaminación local, impactando positivamente en la Capa de Ozono que repercute directamente en la calidad de vida de las personas.

Si perteneces Al sector RAC y deseas información o participar en las capacitaciones puedes comunicarte a los siguientes correos:

dgaami@produce.gob.pe y digami_proyecto05@produce.gob.pe

Estado Peruano, 11 de mayo de 2022

Image: Estado Peruano website

NORTH AMERICA

13. Senate Foreign Relations Committee approval of the Kigali Amendment

WASHINGTON – U.S. Senator Bob Menendez (D-N.J.), Chairman of the Senate Foreign Relations Committee [SFRC], today released the below statement following the Committee’s approval of the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer at this morning’s business meeting. The Kigali Amendment is a global agreement for the transition away from harmful Hydrofluorocarbons (HFCs), gases commonly used for refrigeration, air conditioning and as propellants, to next-generation chemicals developed and produced by U.S. manufacturers. The Amendment moves next to the Floor for consideration by the full Senate.

“As the world moves forward on the commercial production and trade of next generation ‘Kigali compliant’ products, I am incredibly proud to see the Senate Foreign Relations Committee come together in support of Senate approval for the Kigali Amendment to ensure the U.S. private sector does not lose access to a rapidly expanding global market and to expand business opportunities for U.S. businesses and create thousands of jobs,” said Chairman Menendez. “Kigali is critically important to securing U.S private sector competitiveness for next generation refrigeration and HVAC products, and it moves away from the use of antiquated, harmful pollutants. I look forward to continue building momentum to help bolster U.S. economic interests as the Full Senate prepares to take up this important international agreement.”

For 34 years, the Montreal Protocol on Substances that Deplete the Ozone has successfully eliminated the use and production of chemicals causing dangerous holes in the ozone layer of the Earth’s atmosphere. The United States joined the Montreal Protocol and four subsequent amendments to it, each with overwhelming, bipartisan support. The Kigali Amendment is the fifth such amendment, also aimed at innovation and transitioning away from harmful chemicals.

U.S. Corporate and industrial sector support for ratification of the Kigali Amendment includes the National Association of Manufacturers; the U.S Chamber of Commerce; the American Chemistry Council; the Air-Conditioning, Heating, and Refrigeration Institute; and the Alliance for Responsible Atmospheric Policy.

[Senate Foreign Relations Committee \(SFRC\), 4 May 2022](#)

Image: SFRC website

See Also >>> [U.S. Chamber Joins Groups in Applauding Kigali Amendment Progress](#) – In response to the Senate Foreign Relations Committee passage of the Kigali Amendment, the U.S. Chamber of Commerce, Air-Conditioning Heating and Refrigeration Institute, American Chemistry Council, The Alliance for Responsible Atmospheric Policy, and National Association of Manufacturers issued the following statement: “The business



community applauds the Senate Foreign Relations Committee for its bipartisan vote approving the Kigali Amendment for consideration by the full Senate. This is an important step in ensuring the U.S. joins this global effort while accessing international markets that will grow American jobs. It is a win for the economy, the environment, and U.S. leadership.”

14. Propane Refrigerant Factsheet by The North American Sustainable Refrigeration Council (NASRC)

Propane (R-290) is a safe, climate-friendly refrigerant with tremendous potential to reduce greenhouse gas emissions from supermarket refrigeration, but current allowable charge size limits in the U.S. are preventing its full potential as a climate solution. Propane is a natural, nontoxic refrigerant that has no ozone depleting properties and ultra-low global warming potential. Propane is a type of hydrocarbon refrigerant that has excellent thermodynamic properties and is more energy efficient than HFC refrigerants. Propane is one of the best solutions to reduce HFC emissions in grocery stores.

Propane Applications in Supermarkets Propane and other hydrocarbon refrigerants are already safely used in billions of self-contained refrigerated cases, also known as stand-alone or integral units, around the world today.

Benefits of Propane Self-Contained Refrigeration Systems An emerging trend for supermarkets is a system of self-contained refrigerated cases, also known as a Micro-Distributed System (MDS), to replace a traditional remote system. Propane self-contained refrigeration systems offer many potential benefits over HFC systems.

- Increased energy efficiency
- Reduced cost of installation
- Reduced cost of service and maintenance
- Lower refrigerant leak rate
- Significantly lower GHG emissions (CO₂e)
- Cost-effective solution to transition existing facilities away from HFCs

Allowable Charge Sizes Are Limiting Propane's Benefits Currently, propane technology solutions are restricted to a maximum quantity (charge size) of 150 grams of refrigerant per circuit in the U.S., limiting opportunities to improve both cooling capacity and upfront costs. Higher charge sizes are expected to improve energy performance, further reducing their total carbon footprint. Charge sizes up to 500 grams per circuit have been used safely

Global Warming Potential (GWP) Comparison

Propane (R-290)	1
HFC (R-404A)	1,100

Propane Applications in Supermarkets

- +2 Billion additional refrigerated cases
- +4 Million additional jobs
- +900,000 additional tons of greenhouse gas reduction

Comparison of System Types

Comparison of System Types	Traditional HFC Remote System (R-404A)	Self-contained Refrigeration System (R-290)
Refrigerant Cost	\$200	\$
Total Refrigerant Charge (lbs.)	1000	100
Avg Annual Leak Rate	25%	1%
Total Annual GHG Emissions (MT CO ₂ e)	1,000	100

Building Code Systems are Based on Propane's Potential

Propane → MDS → Energy Efficiency → Lower GHG Emissions → Lower Total Cost of Ownership

The North American Sustainable Refrigeration Council (NASRC)

in other parts of the world for years and safety has also been proven through additional testing in the U.S.

Building Code Updates are Needed to Unlock Propane's Potential The UL 60335-2-89 safety standard was recently updated to allow the safe use of propane in self-contained cases up to 300 or 500 grams in the U. S. There is an urgent need to update remaining safety standards, EPA SNAP approval, and building codes as quickly as possible to enable a swift, safe, and cost-effective transition away from HFC refrigerants.

[The North American Sustainable Refrigeration Council \(NASRC\), 10 May 2022](#)

Image: NASRC website

EUROPE & CENTRAL ASIA

15. Turkmenistan, UNIDO Implement Joint Project to Reduce HCFC Usage

The United Nations Industrial Development Organization (UNIDO), together with Turkmenistan, is implementing a project for the phased reduction of Hydrochlorofluorocarbons (HCFCs) in the country, the Trend news agency reports with reference to the UNIDO's Advocacy and Media Relations Expert Ravindra Wickremasinghe.

The HCFC phase-out management plan is being steadily implemented in accordance with the schedule, Wickremasinghe told Trend.

"UNIDO is implementing a number of ongoing projects in Turkmenistan. We are currently working on implementation of two phases of the HCFC Phase-Out Management Plan (HPMP)," the UNIDO's expert Wickremasinghe said, adding that "the HPMP is a program that helps a country decrease its consumption of Hydrochlorofluorocarbons in accordance with the reduction schedule provided for by the Montreal Protocol."

UNIDO believes that the global crisis may slow down implementation of the planned projects, however, cooperation is being carried out with Turkmenistan in its efforts to achieve comprehensive and sustainable economic growth, as well as in the diversification of the country's economy.

The UNIDO is a specialized UN agency focusing on promotion and acceleration of industrial development.

[Business Turkmenistan, 9 May 2022](#)

Image: Business Turkmenistan website



16. Adoption of new air-conditioning safety standard a milestone for climate-friendly cooling

The prospect of clean and sustainable cooling has made a major advance with approval of an international standard on safety requirements for electrical heat pumps, air-conditioners and dehumidifiers intended for household use.

The new standard, approved by the International Electrotechnical Commission (IEC), allows higher charge limits for hydrocarbons such as propane (R290) and other flammable refrigerants in household technology – which in turn means potentially massive cuts in the emission of climate-harming refrigerant gases.

Hydrocarbons are cost-effective, efficient climate-friendly refrigerants, but due to their flammability they have been restricted to very small charge sizes in cooling equipment.

EIA Climate Campaign Leader Clare Perry said: “After urging governments and industry to address this issue for many years, EIA is delighted to see this critical milestone reached on the pathway to net-zero and clean sustainable cooling.

“This revised standard could not be more timely. The world is phasing out climate-harming hydrofluorocarbons (HFCs) under the Kigali Amendment to the Montreal Protocol and we urgently need to adopt future-proof, cost-effective solutions such as propane so as not fall into the trap of buying into another F-gas industry ‘solution’ such as hydrofluoroolefins (HFOs), which are laden with environmental and human health concerns.

“With this new standard, we expect the European Parliament and EU member states to recognise that HFCs are no longer needed for a large portion of the air-con and heat pump market and to strengthen the recently proposed EU F-Gas Regulation accordingly.”

After a rigorous six-and-a-half-year process to agree revisions, a final draft of the new standard – officially designated IEC 60335-2-40 – was approved on Friday 29 April.

Asbjørn Vonsild, the convenor of the relevant IEC working group who shepherded the safety standard through its revisions, said: “The new Edition of IEC 60335-2-40 will enable R-290 [propane] to be used in many A/C and heat-pump systems which were previously blocked from using this refrigerant by the outdated version.

“This will enable a thousand-fold reduction in direct climate emissions compared with systems using R410A.”

The revised safety standard allows for using a larger charge of flammable refrigerants (up to 988g of R290 in a standard split air-con system) in new equipment designed according to certain additional safety requirements to ensure the same high level of safety as equipment using non-flammable refrigerants.



Air-conditioning units in Hong Kong (c) DL5MDA

The new standard is expected to be published on the 24 June. Countries will then need to swiftly adopt the revisions into their national legislation.

[Environmental Investigation Agency, 3 May 2022](#)

Image: EIA website

FEATURED



[OZONE SECRETARIAT](#)

Overview for the meetings of the ozone treaties in 2022

[68th IMPCOM](#), Bangkok, Thailand | 09 July 2022

[44th OEWG](#), Bangkok, Thailand | 11 - 16 July 2022

[5th ExMOP](#), Bangkok, Thailand | 16 July 2022

[69th IMPCOM](#), Venue – to be determined | 29 October 2022

[33rd MOP Bureau](#), Venue – to be determined | 30 October 2022

[34th MOP](#), Venue – to be determined | 31 October - 04 November 2022

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

Summary of the Combined Twelfth Meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer (part II) and the Thirty-Third Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer: 23-29 October 2021.

[The Earth Negotiations Bulletin, 1 November 2021, Vol. 19 No. 157](#)

See also >>> [IISD Daily coverage and photos](#)

Online introductory course 'International legal framework on ozone layer protection'

Designed for government representatives and national stakeholders new to the Vienna Convention and Montreal Protocol, students of environmental law, and anyone interested in learning about the ozone treaties, the [online course](#) launched by the Ozone Secretariat aims to provide an introduction to the international legal framework on ozone layer protection.



[United Nations Environment Programme \(UNEP\), Ozone Secretariat, 14 February 2022](#)

Image: UNEP, Ozone Secretariat website

UNEP Ozone Secretariat launches free teaching kits on ozone layer and environmental protection

- New free online teacher toolkits and lesson plans based on the success of UNEP's Ozone Secretariat's [Reset Earth](#) animation and video game
- Targeting Tweens by adopting animation and gamification to create innovative online lessons to raise awareness on ozone layer and environmental protection
- Available online in digital and print format for universal access



Read/download >>> [Ozone Secretariat's education platform](#)

Image: UNEP, Ozone Secretariat website

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. [Learn more >>>](#)



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

In view of the global COVID-19 situation and the relevant directives released by the Governments of Canada and Quebec in response to the pandemic, on 18 January 2022 the Secretariat informed the Executive Committee that the in-person 89th meeting, planned for 7 to 11 March 2022, in line with decision 87/60(a) would not take place. Following discussions with the Executive Committee, the following contingency plan was approved:

- (a) The 89th meeting will be held in two parts:
 - (i) Part I: Virtually, on 16, 18 and 20 May 2022, to consider items listed in the agenda of part I of the 89th meeting contained in document UNEP/OzL.Pro/ExCom/89/Add.1;
 - (ii) Part II: In-person, from 16 to 18 June 2022, in Montreal, Canada, at the International Civil Aviation Organization (ICAO);
- (b) A "refresher" informal session for Executive Committee members will be organized on agenda item 7(a) of the 89th meeting, development of the cost guidelines for the phase-down of HFCs in Article 5 countries: draft criteria for funding (decision 83/65(d)), on 15 June 2022 from 4 p.m. to 6 p.m., in Montreal, Canada, at Le 1000, Conference Centre; and
- (c) The 90th meeting will be held from 20 to 23 June 2022, in Montreal, Canada at ICAO. In light of the Canadian Grand Prix being held the weekend of 17 to 19 June, all attendees are advised to make lodging arrangements as soon as possible.

- [Evaluation of regional networks of national ozone officers \(desk study and terms of reference for the second phase\)](#)
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- [Evaluation of regional networks of national ozone officers \(desk study and terms of reference for the second phase\): Corrigendum](#)
- [Guide for project preparation of Stage I of Kigali HFC implementation plans \(KIP\) \(February 2022\)](#)
- [Updated guide for the presentation of stage II of HCFC phase-out management plans \(February 2022\)](#)
- [Executive Committee Primer 2022](#)

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



OzonAction

[OzonAction Compliance Assistance Programme](#) produces and outreaches a wide variety of information and capacity building materials and tools that support the implementation of the Montreal Protocol programs and assist Article-5 countries in meeting the compliance targets. These include publications, technology briefs and factsheets, mobile applications, videos, e-Learning, modelling and database programs and special educational or certification programs.

The section below features several of our most recent products.

Visit [OzonAction website](#) for more information, discover the entire range of products.

Images in this section are by OzonAction

New OzonAction Knowledge Maps tool - The UNEP OzonAction Knowledge Maps tool was developed to provide the National Ozone Units (NOUs) and different UNEP partners with a simple tool to help them access data and information about relevant stakeholders, who are mainly involved in the implementation of programmes and projects under the Montreal Protocol (MP) supported by Multilateral Fund (MLF).

Refrigeration, Air-Conditioning, and Heat Pumps (RACHP) Associations & Organizations: This Knowledge Map provides a global directory of RACHP associations, societies, and organisations around the world. These are key stakeholders for ensuring safe and efficient refrigerant transitions.



Local Technical & Vocational Education and Training (TVET): This Knowledge Map provides a global directory of TVET entities and centres around the world. These are the strategic partners for conducting and promoting training and certification programmes related to the refrigeration servicing sector.

Click [HERE](#) to access the OzonAction Knowledge Maps tool

Click [HERE](#) to download the OzonAction Knowledge Maps tool flyer

Gas Card Tool: Web-based Visual Printable Cards of Refrigerant Gases developed by the UN Environment Programme (UNEP) OzonAction, to provide engineers, workers, and technicians with easily accessible information on substances/ gases that they are working with or handling in the workplace on visual printable cards.



Content of Gas Cards - Each Gas Card is printable (in PDF or image format) and includes the following information about each substance/gas: a) General Characteristics (Chemical name, formula and type, ASHRAE designation, Trade names, Harmonized System (HS) codes, Chemical Abstract Service (CAS), United Nations (UN) numbers, Blend/ mixture components, Montreal Protocol Annex and Control measures, main usage, etc.) b) Gas Performance—Radar Chart (in terms of: Ozone depleting potential-ODP, Global warming potential- GWP, Toxicity Class & Flammability Class) c) Environmental and Safety Impact, and Safety Impact (with visualization of Toxicity & Flammability Class, Hazardous Symbols).

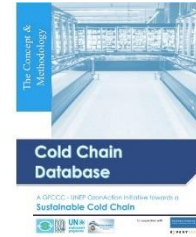
More Information - The Gas Card web based tool is part of UNEP OzonAction's portfolio of activities and tools to assist various stakeholders in developing countries, including customs officers and technicians, to achieve and maintain compliance with the Montreal Protocol on Substances that Deplete the Ozone Layer. In the left navigation bar of the Gas Card tool web page, you will find a list of commonly used HFCs and HFC Blends in different sectors. *

Using the Gas Gard web-based tool

- The Gas Gard tool is available online on the [OzonAction website](#)
- Read the full [2021 annual iPIC report](#)
- See the [flyer](#) introducing the new iPIC platform

** Based on the Overall Analysis of the Results of the Survey of ODS Alternatives Report (conducted in 119 countries from 2012 to 2015)*

OzonAction and GFCCC launch the methodology questionnaires the Cold Chain Database Initiative - The Global Food Cold Chain Council (GFCCC) and the United Nations Environment Programme (UNEP) OzonAction announced the launch of their Cold Chain Database and Modeling initiative. The initiative marks the first formal step to assist developing countries in identifying their cold chain baseline along with consumption of relevant HCFCs or HFCs or other refrigerants. The initiative was conceived in 2019 and kicked off during the 31st Meeting of Parties to the Montreal Protocol (Rome, Italy), which concluded with the Rome Declaration on “The Contribution of the Montreal Protocol to Food Loss Reduction through Sustainable Cold Chain Development”.



- > [GFCCC-UNEP OzonAction Cold Chain Modelling Press Release](#)
- > [GFCCC-UNEP Cold Chain Database Methodology Final](#)
- > For countries or partners interested to use the model data collection detailed questionnaires, please fill in the [Expression of Interest and NDA of Cold Chain Database](#) form and return to [Ayman Eltalouny](#)

Contact: [Ayman Eltalouny](#), Coordinator International Partnerships, UNEP, OzonAction



[HCFC Quota and Licence Tracker](#) - 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.

Access the:

- [HCFC Quota tracker app](#)
- [Flyer for more information on the tracker](#)

- [Short video tutorial on the OzonAction YouTube Channel](#)

[GWP-ODP Calculator Application](#) - Updated “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)

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.



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

OzonAction [WhatGas?](#) Updated

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!

RAC Technician Videos - Full length films!

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](#).

[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.



An AHRI revised guideline, first published in 2015, now removes paint colour assignments for refrigerant containers and specifies that all refrigerant containers should have the same paint colour from 2020 onwards.

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.

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 (September 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.



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

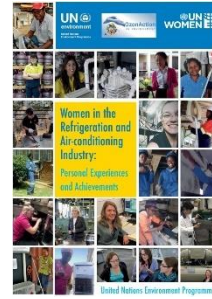
Contact: [Ayman Eltalouny](#), OzonAction, UN Environment Programme

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



[Women in the refrigeration and air-conditioning industry: Personal experiences and achievements](#) - The United Nations Environment Programme's (UNEP), OzonAction, in cooperation with UN Women, has compiled this booklet to raise awareness of the opportunities available to women and to highlight the particular experiences and examples of women working in the sector and to recognise their successes. All of the professionals presented in the booklet are pioneers. They are role models whose stories should inspire a new generation of young women to enter the weld and follow in their footsteps.

Read/download the [publication](#)



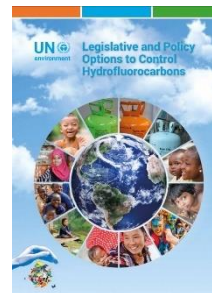
As part of IIR and UNEP OzonAction's partnership, a set of Cold Chain Technology Briefs was released over the past few years, which includes in-depth summaries about the cold chain in different key sectors. They include descriptions of technology, refrigerant options and trends and conclude with prospects and challenges. They cover the main cold chain sub-sectors, i.e., [Production & Processing](#), [Cold Storage](#), [Transport Refrigeration](#), [Commercial & Domestic](#), and [Fishing Vessels](#).

Download the Cold Chain Technology brief in [English](#) | [French](#) | [Russian](#) | [Spanish](#)



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. [Read/download](#)



Latest issue of Centro Studi Galileo magazine, **Industria & Formazione**, [n. 3-2022](#) (in Italian).



Green Cooling in public procurement How to advance the procurement of climate-friendly and energy-efficient cooling equipment in the public sector? Air conditioning in public buildings is often responsible for around 50% of total electricity consumption. Switching to climate-friendly cooling technologies ("Green Cooling") can reduce costs and energy consumption and improve the carbon footprint of public buildings. This study takes a closer look at the benefits of Green Cooling in the public sector and discusses current barriers and possible solutions. The information presented provides a solid basis to revise current procurement criteria for sustainable cooling systems in public buildings. **Read/Download the [study](#)**



Cut Super Climate Pollutants Now!: The Ozone Treaty's Urgent Lessons for Speeding Up Climate Action (Resetting Our Future). We have a decade or less to radically slow global warming before we risk hitting irreversible tipping points that will lock in catastrophic climate change. The good news is that we know how to slow global warming enough to avert disaster. Cut Super Climate Pollutants Now! explains how a 10-year sprint to cut short-lived "super climate pollutants" -- primarily HFC refrigerants, black carbon (soot), and methane -- can cut the rate of global warming in half, so we can stay in the race to net zero climate emissions by 2050.

Authors: Alan Miller, Durwood Zaelke, Stephen O. Andersen.



E-Book on Process Safety Management (PSM) Training for Ammonia Refrigeration - a new e-book about the critical elements of a process safety management (PSM) training program for facilities operating an ammonia refrigeration system.

The e-book, titled "[7 Keys to a Compliant PSM Training Program for Ammonia Refrigeration](#)," outlines important questions a facility's program should address and questions that trained plant personnel should be able to answer. Topics covered include:

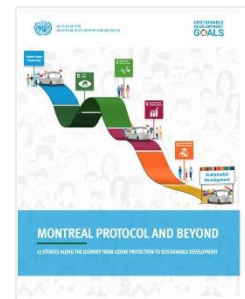
- Safety hazards and health considerations
- Emergency shutdown procedures
- Addressing deviations from system operating limits
- Risks and costs of non-compliance with regulatory standards

Request free Download [here](#)

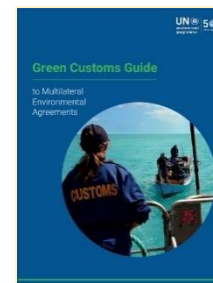


[Montreal Protocol and beyond: 17 stories along the journey from ozone layer protection to sustainable development](#) - The 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals (SDGs) embody the global commitment to build a more sustainable future for all. These universally agreed objectives address the most urgent environmental, social and economic challenges of our time...

Read/Download [here](#)



NEW The **Green Customs Guide to Multilateral Environmental Agreements** was designed to promote sustainable trade and encourage customs and border control officers to take on a proactive role in protecting the environment. The guide provides useful information and guidance about relevant trade-related multilateral environmental agreements (MEAs), thus facilitating legitimate trade in environmentally sensitive items while preventing illicit trade in such items and contributing to the achievement of the [Sustainable Development Goals](#).



Read/Download the [full report](#).

See pages 91-98 on "How the Montreal Protocol regulates trade", and "Montreal Protocol-specific training materials for customs officers."

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 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*



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

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