

OzoNews

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

Volume XXIV | 15 November 2024

In this issue:

1. Kigali Amendment latest ratifications
2. Cooling the Heat: Enhancing Energy Efficiency of the Refrigeration and Cooling Sector
3. Rise in nitrous oxide emissions endangers pathway to 1.5°C, the ozone layer, and human health
4. General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention: annual progress update and invitation for contributions
5. Upcoming 95th Meeting of the Executive Committee
6. Exploring the benefits and challenges of rising air conditioning in Africa
7. New Plan Targets Potent Greenhouse Gases with Phase-Out of HFCs
8. INWIC Highlights Role of Women in Cooling at REFCOLD India
9. Closing Workshop Green Cooling Initiative III in Vietnam
10. UNDP/GEF Project Completed: Partners Reflect on Achievements and Lessons Learned
11. Fluorinated greenhouse gases 2024 – Report

GLOBAL

1. Kigali Amendment latest ratifications

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

[Papua New Guinea, 12 November 2024](#)

[Oman, 8 November 2024](#)

[Kuwait, 4 November 2024](#)



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. Cooling the Heat: Enhancing Energy Efficiency of the Refrigeration and Cooling Sector



As the demand for cooling increases in a warming world, government and industry stakeholders explored how to boost energy efficiency in cooling technologies — a potential “low-hanging fruit.”

Already one of the most successful environmental treaties in history, the [Montreal Protocol's](#) most recent amendment, the Kigali Amendment, calls for the phase-down of hydrofluorocarbons (HFCs) and holds the potential to prevent up to 0.5°C warming. Achieving energy efficiency gains in cooling equipment has the potential to double that climate benefit.

At this side event, stakeholders came together to explore how to achieve maximum gains for the climate by exploiting advances in energy-efficient cooling technologies, stressing the need for collaboration to accelerate the uptake of these technologies.

Shikha Bhasin, UNEP Cool Coalition, moderated this event, noting that 2024 is on track to be the hottest year on record and that keys for reducing emissions as demand for cooling rises includes meeting Kigali Amendment goals, improving energy efficiency, and advancing passive cooling solutions.

In opening remarks, Megumi Seki, Executive Secretary, Ozone Secretariat, stressed the potential for climate benefits by phasing down HFCs and emphasized that the transition to lower global warming potential (GWP) refrigerants must be combined with gains in energy efficiency.

Marco Durán, International Institute of Refrigeration, then presented data showing the rising demand for cooling, which will continue to increase as energy-intensive technologies, such as electric vehicles, data centers, and artificial intelligence, are adopted. He underscored that energy efficiency is a “smart investment, because it is better to invest to avoid waste than to invest in the power plants required to provide power” and that there should be no delay in enhancing efficiency. “Energy efficiency is a low-hanging fruit, but if we wait too long to pick up low-hanging fruit, it may rot,” he said.

In a panel discussion, key stakeholders in government and industry shared their efforts to achieve gains in energy efficiency and to build on those gains.

Yulia Suryanti, Ministry of Environment and Forestry, Indonesia, highlighted how her country is building energy efficiency into its Nationally Determined Contribution (NDC) to reduce emissions and how energy efficiency is tied to carbon pricing mechanisms. She emphasized the need to coordinate actions under international agreements, such as the Kigali Amendment, with the relevant government ministries overseeing various sectors.

Yaqoub Almatouq, Environment Public Authority, Kuwait, which recently ratified the Kigali Amendment, stressed that the transition to more energy efficient technology is no longer a policy decision but a “market decision.” He underscored that action needs to happen now rather than later, as delay will create the need

for a “big jump” in the future. Almatouq also emphasized the need for passing cooling solutions, pointing out how the room where the side event occurred could be made smaller to reduce energy demand.

Hubert Zan, Energy Commission, Ghana, emphasized collaboration between governments and industry so that regulations are tied to technology. Zan also noted that those who service and sell cooling products, such as air conditioners, need to be provided with the right information about energy efficiency, as they have an influence on consumer choice. He also highlighted the need to harmonize regulations and standards among countries, so that they can “leapfrog” in the refrigerant transition, as well as the need for governments to negotiate positive changes with manufacturers.

Anderson Alves, UN Development Programme (UNDP), emphasized that financial tools must be provided to consumers so that they can access technologies, such as digital technologies that more efficiently control heating and cooling.

Helen Walter-Terrinoni, Trane Technologies, also underscored the need to increase the uptake of energy efficient technologies by consumers. She pointed out that uptake could be accelerated by removing barriers to the use of these technologies through changes in building codes and laws.

Yichi Zhang, Midea Group, emphasized that in the transition away from HFCs and toward other refrigerants, there is an opportunity to upgrade supply chains, so the cost of more efficient cooling technologies is reduced. Answering an audience question about safety regulations as potential barriers to technology adoption, Zhang highlighted the need for collaboration and high-level planning among key stakeholders, such as industries, universities, and governments.

In final remarks, Alves and Walter-Terrinoni also stressed the importance of collaborative efforts to unlock the potential of new cooling technologies. Alves urged coordination among government ministries and consultations with the private sector. Walter-Terrinoni underscored how regional cooperation among governments can achieve economies of scale and how sharing assets can help train technicians in energy efficient technologies.

[Event organised by UNEP, Ozone Secretariat at COP 29](#)

[Earth Negotiations Bulletin, International Institute for Sustainable Development \(IISD\), 14 November 2024](#)

Image: IISD

3. Rise in nitrous oxide emissions endangers pathway to 1.5°C, the ozone layer, and human health

Baku, 12 November 2024 – A new United Nations [Global Nitrous Oxide Assessment](#) is warning that nitrous oxide (N₂O), a potent greenhouse gas, is rapidly accelerating climate change and damaging the ozone layer. Launched at the 2024 UN Climate Change Conference (COP29) in Baku, Azerbaijan, the assessment signals that emissions are rising faster than expected, and that immediate action is required to curb the environmental and health impacts of this super pollutant.



Nitrous oxide is approximately 270 times more potent than carbon dioxide in terms of warming the planet, and currently responsible for approximately 10% of net global warming since the industrial revolution.

Primarily emitted from agricultural practices such as the use of synthetic fertilizers and manure, N₂O is the third most significant greenhouse gas and the top ozone-depleting substance still being released into the atmosphere.

The findings from the Assessment are clear: urgent action on N₂O is critical to achieving climate goals, and without a serious reduction in emissions, there is no viable path to limiting warming to 1.5°C in the context of sustainable development as outlined in the Paris Agreement.

“Abating N₂O emissions could avoid up to 235 billion tonnes of CO₂-equivalent emissions by 2100,” said David Kanter, Associate Professor of Environmental Studies at NYU and Co-Chair of the Assessment. “This is equivalent to six years' worth of current global carbon dioxide emissions from fossil fuels.”

This Assessment identifies practical, cross-sectoral abatement strategies that could cut N₂O emissions by more than 40% from current levels. By transforming food production systems and rethinking societal approaches to nitrogen management, even deeper reductions could be achieved, offering a critical opportunity to move the world closer to its climate, environmental, and health goals.

It also shows that N₂O emissions from the chemical industry can be quickly and cost-effectively abated; agricultural and industrial practices impact the natural nitrogen cycle, leading to increased N₂O emissions.

“A sustainable nitrogen management approach not only reduces nitrous oxide emissions but also prevents the release of other harmful nitrogen compounds,” said A.R. Ravishankara, Chemist and atmospheric scientist, Colorado State University, and Co-Chair of the Assessment. “This could improve air and water quality, protect ecosystems, and safeguard human health, all while maintaining food security.”

Nitrous oxide is currently the most significant ozone layer depleting substance being emitted into the atmosphere. The Assessment shows that proactively tackling N₂O would also support the continued recovery of the ozone layer, helping to avoid a future where much of the global population is exposed to harmful UV levels.

“The ozone layer is crucial for all life on Earth. For decades, parties to the Montreal Protocol have worked hard to safeguard it. This Assessment highlights the need for continued vigilance, commitment and action for the ozone layer to recover as soon as possible to its pre-1980 levels,” said Megumi Seki, Executive Secretary of the Montreal Protocol Ozone Secretariat, United Nations Environment Programme.

“This Assessment sounds the alarm on a relatively forgotten super pollutant that contributes greatly to climate change and air pollution,” said Martina Otto, Head of Secretariat of the UNEP-convened Climate and Clean Air Coalition. “By using the abatement tools highlighted in the Assessment that are already available to us, we can yield multiple benefits across climate, clean air, and health” she added.

Simultaneously reducing nitrogen oxide emissions and ammonia would also significantly improve air quality, potentially avoiding up to 20 million premature deaths globally by 2050. Abatement measures would also enhance water quality, improve soil health, and protect ecosystems from the impacts of nitrogen runoff.

“Addressing nitrous oxide emissions is essential for ensuring sustainable, inclusive and resilient agriculture that simultaneously helps countries achieve their climate and food security goals. As the assessment clearly shows, there are ways to produce more with less, by improving the efficiency of nitrogen use in agriculture and reducing excessive nitrogen application” said Kaveh Zahedi, Director of FAO's Office of Climate Change, Biodiversity and Environment.

The Assessment underscores the need for immediate and ambitious action to reduce N₂O emissions, as part of a broader strategy to tackle super pollutants, which, alongside efforts to achieve net-zero carbon dioxide emissions, can put the world on track to meet long-term climate, food security, and health goals.

[Download Full Report](#) / [Press Release](#)
[COP29 Daily highlights and reports by IISD](#)

[UN Environment Programme \(UNEP\), 12 November 2024](#)

Image: UNEP

4. General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention: annual progress update and invitation for contributions



The Ozone Secretariat refers to decision XIII/2, on the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention, adopted by the Conference of the Parties to the Vienna Convention at its thirteenth meeting (COP13) and decision XXXVI/1, on enhancing regional atmospheric monitoring of controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer, adopted by the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (MOP36), at the combined COP13/MOP36 held from 28 October to 1 November 2024 in Bangkok. The decisions are set out in document [UNEP/OzL.Conv.13/8/Add.1–UNEP/OzL.Pro.36/9/Add.1](#), an advance version of which is available on the Ozone Secretariat website.

A report on the status of the General Trust Fund, its activities and the work of its Advisory Committee as at 31 July 2024 was provided by the Secretariat in document [UNEP/OzL.Conv.13/7](#) for the parties' consideration at COP13/MOP36. Updated information on the status of the Trust Fund as at 31 October 2024 is set out in the Annex to this letter.

In paragraph 1 of COP decision XIII/2, the parties recognized that the purpose of the General Trust Fund includes supporting activities related to the atmospheric monitoring of substances controlled under the Montreal Protocol, a point also emphasized in the recommendations of the Ozone Research Managers at their twelfth meeting. In paragraph 2 of the same decision, parties were encouraged to make contributions to the Trust Fund for the purpose of improving the global ozone observing system and for enhancing the global and regional monitoring of substances controlled by the Montreal Protocol, taking into consideration the report of the Advisory Committee of the Trust Fund to COP13. Furthermore, the Secretariat was requested to organize the work of the Advisory Committee in line with MOP36 decision XXXVI/1, while the Committee was requested, inter alia, to continue to implement its long-term strategy and short-term plan of action with the assistance of the World Meteorological Organization (WMO) and the Secretariat, ensuring that activities relevant to enhancing monitoring of substances controlled under the Montreal Protocol are taken into account.

Given the support expected to be provided by the General Trust Fund for implementation of additional eligible activities, both currently under consideration and future ones, the Secretariat wishes to encourage parties to make contributions to the Trust Fund in order to improve the global ozone observing system and to enhance the global and regional monitoring of substances controlled under the Montreal Protocol, in accordance with paragraph 2 of COP decision XIII/2.

The Ozone Secretariat looks forward to your cooperation and your continued support in enhancing research and systematic observations in developing countries and countries with economies in transition.

[UNEP Ozone Secretariat, 14 November 2024](#)

Image: UNEP Ozone Secretariat

5. Upcoming 95th Meeting of the Executive Committee

The 95th meeting of the Executive Committee will be held from 4 to 8 December 2024.



A half-day session on the strategic approaches to the Kigali Amendment implementation for sustainable HFC phase-down by Article 5 countries and contribution of activities supported by the Multilateral Fund to sustainable cooling, will be held on 9 December 2024.

Both the meeting and the half-day session will be held at the International Civil Aviation Organization (ICAO), located at 999 Robert-Bourassa Boulevard, Montreal, Quebec, Canada.

The 95th meeting sessions will take place from 10 am. to 1 pm. and from 3 pm. to 6 pm. or as announced at plenary.

The half-day session will take place from 9 am. to 1:30 pm.

All [pre-session meeting documents](#) will be posted on the [new website of the Multilateral Fund](#) four weeks before the start of the meeting as they become available. Translated documents will be posted approximately seven days following the English postings. Delegates should continue obtaining their username and password to access the restricted area of the Multilateral Fund website (the participant log-in link can be found at the top right-hand side of the [meeting page](#)) through their heads of delegations. Should any difficulties be encountered with the username and password provided, please [email](#) Mr. Sheng Huang, Information Technology Assistant.

[The Multilateral Fund, October 2024](#)

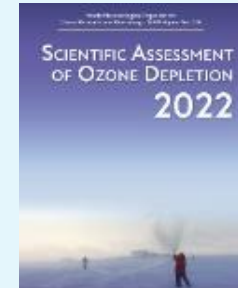
Image: The Multilateral Fund

NEW!

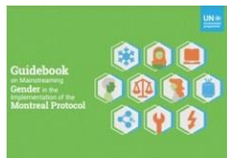
The [Twenty Questions and Answers About the Ozone Layer](#) is now available in [Chinese language](#)

Authors: Ross J. Salawitch (Lead Author), Laura A. McBride, Chelsea R. Thompson, Eric L. Fleming, Richard L. McKenzie, Karen H. Rosenlof, Sarah J. Doherty, David W. Fahey, *Twenty Questions and Answers About the Ozone Layer: 2022 Update, Scientific Assessment of Ozone Depletion: 2022*, 75 pp., World Meteorological Organization, Geneva, Switzerland, 2023.





[Industria Y Formazione 2024-2025 International Special Issue](#), joint international publication from UNEP, IIR, AREA, CSG under the auspices of Italian Ministry for Environment and Energy Safety. This 10th edition focuses on the need to strengthen the RACHP workforce for the future challenges of the sector. It presents 24 sector-specific articles with contributions from global associations, institutions and organizations (such as AREA, AHRI, ASHRAE, ISHRAE, EPEE, FAIAR, U-3ARC, ...). The Publication has been introduced at Chillventa 2024, and officially launched at the 36th Meeting of the Parties to the Montreal Protocol in Bangkok, Thailand.



[Guidebook on Mainstreaming Gender in the Implementation of the Montreal Protocol](#) OzonAction, in consultation with UN Women and a gender expert, developed this guidebook to advance the agenda of gender equality and women's empowerment through the implementation of Montreal Protocol activities. The Guidebook is designed to assist National Ozone Officers with addressing gender issues through their daily work and operations. [Read/download English](#) | [Russian](#)



[Watch out for Illegal Trade of HCFCs and HFCs](#): Lessons learnt from the Global Montreal Protocol Award for Customs and Enforcement Officers provides an analysis of the cases submitted in the context of the [Global Montreal Protocol Award for Customs and Enforcement Officers](#). The Global Award was launched in 2018 by OzonAction. This Global Award is intended to raise awareness about the Montreal Protocol and to recognise customs and enforcement officials for their efforts in preventing and combating illicit traffic in Montreal Protocol and Kigali Amendment-regulated substances. Ozone-depleting substances (ODS) include hydrochlorofluorocarbons (HCFCs) and other compounds with a high Global Warming Potential (GWP), particularly hydrofluorocarbons

(HFCs).



UNEP OzonAction, ASHRAE, April 2023 Fact sheet: [Update on New Refrigerants Designations and Safety Classifications](#). The purpose of this fact sheet is to provide an update on ASHRAE standards for refrigerants and to introduce the new refrigerants that have been awarded an «R» number over the last few years and introduced into the international market.

[Sustainable cold chains: Virtual Exhibition](#) - The virtual exhibition for sustainable cold chains aims to highlight the critical role of cold chains in ensuring food safety and security, access to vaccines, reducing global warming and preventing ozone layer depletion. The exhibition is ongoing and continuously updated with submissions accepted on a rolling basis. The partners of the exhibition will continue promoting the exhibition at all relevant events and throughout 2022 and beyond. [Learn more/submit nomination >>>](#)



These technologies and approaches directly contribute to meeting national obligations under the Montreal Protocol on Substances that Deplete the Ozone Layer including its Kigali Amendment and the Paris Agreement on Climate Change. Sustainable cold chain contributes to the achievement of many [Sustainable Development Goals](#).

The exhibition is ongoing and continuously updated with submissions accepted on a rolling basis. The partners of the exhibition will continue promoting the exhibition at all relevant events and throughout 2022 and beyond.

Click [here](#) for more information / submit a nomination >>>

Image: Sustainable cold chains website



Vanuatu's Case Study on Integrating ODS/HFC Module into the National Single Window System - The National Single Window is a centralized system that links all relevant government approving authorities and acts as a 'one-stop-shop' where importers and exporters may submit applications electronically including information and all required paperwork to support the application and approval process. **Read/Download the [Factsheet >>>](#)**



Recognition of Prior Learning Scheme for Refrigeration and Air-Conditioning Servicing Technicians in Mongolia - The Recognition of Prior Learning (RPL) process can help those in the industry acquire a formal qualification that matches their knowledge and skills and thereby contributes to improving their employability, mobility, and lifelong learning. RPL can make a significant contribution to providing the relevant learning framework necessary for the present and ongoing maintenance of a quality workforce, especially in the RAC servicing sector. In Mongolia, the RPL process has been rolled out in over 30 TVET trades in the construction, mining, and other sectors, including apparel and culinary etc. Mongolia initiated the RPL scheme for RAC servicing technicians as part of their implementation of the HPMP in cooperation with various national stakeholders. **Read/ Download the [Factsheet >>>](#)**



AFRICA

6. Exploring the benefits and challenges of rising air conditioning in Africa



The air conditioner (AC) market in Africa is growing rapidly due to rising temperatures, increasing demand for better lifestyles, and rapid urbanization with [sales reaching 3.4 million units in 2021](#) and a [revenue of US\\$1.23 billion in 2024](#). One of the positive effects of this growth noted by experts is the increasing number of jobs in the heating and ventilation and air conditioners sector (HVAC). However, a negative aspect is the ozone-depleting and greenhouse gas-increasing refrigerants that are used in ACs, and rising energy consumption also is putting pressure on local electricity grids and causing power outages. [...]

The challenges of the growth of the AC market for developing nations

Driven by rising temperatures, the expanding AC market is providing job opportunities and fueling economic growth. However, it is also resulting in hidden environmental costs. From the emission of high Global Warming Potential (GWP) refrigerants to the increased energy requirements that are straining local power grids, the cooling comfort provided by ACs is posing significant challenges to Africa's efforts on climate change. ACs are complex machines that use chlorofluorocarbons (CFCs) and hydrofluorocarbons (HFCs) as cooling agents and when some of these refrigerants (particularly the older types) are released into the atmosphere, over time they increase the holes in the ozone layer. [...]

ACs energy demand strains African power grids

The current growth of the AC market is putting pressure on the power grids of developing nations by increasing electricity consumption, which depends on fossil fuels and consequently intensifies GHG emissions. The International Energy Agency estimates that by 2050, global energy demand from ACs will triple, which is akin to adding 10 new AC units every second in the next three decades. It is estimated that high temperatures and urbanization will expand global AC ownership from almost [37% to at least 45% by 2030](#), putting further pressure on the already overwhelmed power grids. The energy requirements for the current number of ACs produce [approximately 4% of global GHG emissions](#), significantly contributing to climate change.

Final word

The growth of Africa's AC industry has led to an interplay between economic development and environmental sustainability. Despite the industry's growth that is providing opportunities for employment, revenue generation, and improved living standards, it is posing challenges with regard to climate change. AC's dependence on electricity is also straining already overwhelmed power grids and increasing GHG emissions. To address the challenges brought about by the growth in the AC market, African governments

are implementing policies such as the Kigali Amendment to the Montreal Protocol that is eliminating the use of high-GWP hydrofluorocarbons in HVAC units. African nations are also promoting the use of solar-powered AC units and providing subsidies for energy-efficient appliances to reduce the pressure on power grids.

[Development Aid, News Stream, 15 November 2024, By Dennis Mithika](#)

Image: DANS

LATIN AMERICA AND THE CARIBBEAN

7. New Plan Targets Potent Greenhouse Gases with Phase-Out of HFCs

Saint Lucia is set to further cut greenhouse gas emissions by phasing out hydrofluorocarbons (HFCs). Although HFCs do not harm the ozone layer, they are thousands of times more potent than carbon dioxide.



To accelerate the transition to natural alternatives, the National Ozone Unit is engaging with the refrigeration and air conditioning sector. National Ozone Officer Kasha Hytmiah said this effort is part of the Kigali Implementation Plan (KIP).

[...] “The KIP will run concurrently with the Ozone Unit’s Hydrochlorofluorocarbon Phase-out Management Plan (HPMP). Customs officers will receive training on a licensing and quota system for HFCs. Meanwhile, the National Ozone Unit and the Energy Unit of the Ministry of Infrastructure will explore how the environmental and energy efficiency of natural refrigerants can justify incentivizing importers.” [...]

[iReport St Lucia, 8 November 224, By Stevanna Francis](#)

Image: Government of Saint Lucia (via govt.lc)

ASIA AND THE PACIFIC

8. INWIC Highlights Role of Women in Cooling at REFCOLD India

Kolkata, India, 3 – 5 October 2024 – The [International Network for Women in Cooling](#) (INWIC) and [UNEP OzonAction](#) proudly participated in REFCOLD India 2024, held from 3-5 October in Kolkata, India.



Organized by the [Indian Society of Heating, Refrigerating and Air Conditioning Engineers \(ISHRAE\)](#), REFCOLD India is one of the largest exhibitions and conferences in Asia dedicated to refrigeration and cold chain technology. The event brought together industry leaders, experts, manufacturers, suppliers, and policymakers worldwide all focusing on sustainable advancements and practices in the refrigeration and air-conditioning (RAC) sector.

A significant highlight of the event was a half-day knowledge session titled “Women in ‘Cool’ Careers: Her Story of Cooling,” held on 4 October. The session was opened by key-note presentations by Dr. Yosr Allouche, Ph.D., Director General of the [International Institute of Refrigeration](#) (IIR) and INWIC founding partner, who provided an insightful overview of the critical nexus of refrigerant transition in the context of energy efficiency and mitigation of climate change.

Ms. Sonja Wagner, UNEP OzonAction Gender Focal Point and INWIC Board Member gave an overview of UNEP’s global activities and initiatives to empower women working in the Refrigeration Air Conditioning and Heat Pump (RACHP) sector.

Ms. Colleen Keyworth, INWIC's President presented on the network’s various initiatives, programmes, and ongoing efforts to support and promote women in the cooling industry.

The esteemed speakers collectively emphasized the critical importance of gender inclusion and workforce diversity within the RAC sector. They highlighted how a diverse range of perspectives, experiences, and backgrounds fosters the development of more sustainable and innovative solutions to the pressing challenges faced by industry. By harnessing the unique contributions of individuals from all genders, the cooling sector can unlock new levels of creativity, problem-solving, and ultimately, progress in addressing critical issues such as energy efficiency, environmental impact, and equitable access to cooling technologies.

The presentation about Women in ISHRAE by Ms. N Jayanthi, Chair of the Women in ISHRAE Committee, and an interview with Ms. Reema Jogani, a female business owner, was followed by two interactive panel sessions.

Ms. Elisa Rim, UNEP OzonAction Interim Regional Coordinator a.i., South Asia, provided examples of gender mainstreaming activities that are being done through the Multilateral Fund Secretariat-funded projects in the countries of the Regional Network for South Asia.

ISHRAE, as a founding partner of the International Network for Women in Cooling (INWIC), played a crucial role in facilitating INWIC’s engagement at REFCOLD India 2024. ISHRAE provided a valuable platform for INWIC to establish connections with the "Women in ISHRAE" group and its leadership. This strategic meeting fostered enhanced collaboration and synergistic partnerships, enabling both organizations to identify new and innovative avenues for supporting each other's initiatives. Ultimately, this collaborative effort seeks to empower women, encouraging their increased participation and advancement within the RAC.

Both UNEP OzonAction and INWIC are deeply committed to fostering gender equality and inclusivity within the refrigeration and air conditioning sector. They intend to capitalize on the increased awareness and enthusiasm generated at REFCOLD India 2024 to further advance these crucial objectives. This commitment aligns with broader UN mandates to promote equitable participation and opportunities for all

individuals, regardless of gender, in environmental protection efforts and sustainable development initiatives. By building on the momentum from REFCOLD India 2024, UNEP OzonAction and INWIC aim to translate the event's energy into tangible actions that create a more inclusive and diverse cooling sector.

Contact: [Sonja Wagner](#), Gender Focal Point UNEP, OzonAction Compliance Assistance Programme (CAP), OzonAction

[UNEP, OzonAction, October 2024](#)

Image: OzonAction

9. Closing Workshop Green Cooling Initiative III in Vietnam



The closing workshop for the "Green Cooling Initiative III" (GCI III) celebrated the project's achievements over the past three years and explored the future of the RAC sector in Vietnam. GCI III has collaborated with government bodies, experts, and partner organizations to drive down greenhouse gas emissions from cooling technologies.

The closing workshop for the project Green Cooling Initiative III (GCI III) was held on 24 October 2024 in Hanoi. The workshop aimed to share the project's results after three years of implementation and discuss the perspective of the RAC sector in Vietnam. The workshop was attended by representatives of relevant ministries and departments, partnering organisations, experts and project implementers.

Vietnam's Commitment to Phasing Down HFCs

In 2019, by ratifying the Kigali Amendment to the Montreal Protocol, Vietnam has committed to phasing down hydrofluorocarbons (HFCs). These synthetic gases commonly used in cooling and refrigeration are a rapidly growing source of greenhouse gas emissions contributing to global warming. According to the agreement, HFCs emissions are to be reduced by 80% by 2045, starting in 2024. Alongside Thailand, Bangladesh, Kenya, Uganda, Colombia and Honduras, Vietnam is a partner country of the project "Green Cooling Initiative III". The objectives of the project are to: (i) strengthen capacity of public and private actors for the green cooling; (ii) promote Green Cooling in Vietnam by accelerating the transformation of the cooling sector towards energy efficient technologies that utilise natural refrigerants such as carbon dioxide, hydrocarbons, and ammonia, contributing to achieving Vietnam's goal of net zero emissions by 2050.

Project Achievements and a Glimpse into the Future

Mr. Oemar Idoe, the Coordinator of the Cluster Environment, Climate Change and Agriculture in GIZ Vietnam, the GCI III project implementing agency, proudly applauded the project's achievements: *"Today I would like to congratulate the joint GCI III project team from the Department of Climate Change (DCC)*

and GIZ as well as its cooperation partners such as Hanoi Industrial Vocational College and Hanoi Vocational College of Electronics and Retro-Refrigeratory Technics for the achievements of the Green Cooling initiative III in Vietnam. We also note the decision of the Vietnamese government to join the voluntary Global Cooling Pledge at COP28, which is an encouraging sign of Vietnam's commitment to advance sustainable cooling.”

In the morning session on “Green Cooling Activity Deployment in Vietnam”, the results of GCI III in Joint Cooperation Activities during 2022 – 2024 were highlighted by Mr. Nguyen Ba Tu, GCI III Project Coordinator for National Ozone Unit (NOU). Accordingly, GCI III has supported its political partner, Department of Climate Change, by providing access to Green Cooling instruments and arguments, offering demand-based support services and strengthening stakeholders networking to incorporate Green Cooling measures for the Refrigeration and Air Conditioning (RAC) sector into Vietnam’s Nationally Determined Contributions (NDCs) Update 2022.

Regarding capacity building on Green Cooling and safe use of hydrocarbon-based refrigerants, the project delivered successfully two hands-on practical training of trainers, and five replicated courses held at two vocational colleges such as Hanoi Industrial Vocational College and Hanoi Vocational College of Electronics and Retro-Refrigeratory Technics. Additionally, to promote gender responsiveness in the RAC sector, the vocational programme was tailored to better accommodate female participants. The GCI III training series from October 2023 to March 2024 was attended by 30 resource trainers/practitioners and 75 students, contributing to the development of qualified human resources for Vietnam's green cooling market.

Furthermore, the workshop provided participants with an opportunity to exchange knowledge on the cooling sector through two insightful presentations on (i) Data collection and elaborate a market study in the domestic and retail refrigeration subsectors under the food cold chain sector in Vietnam and (ii) Market Analysis Results and Proposed Transformative Plan to Green Cooling Technologies in Vietnam Food Cold Chain.

Ms. Nguyen Dang Thu Cuc, Coordinator of the National Office of Ozone, shared: *“The project has introduced good practices in the technology of using new generation refrigerants to Vietnam. These technologies, when applied synchronously in training programs at vocational schools, will bring many good results for trainees to meet the requirements of demand for the environment, health and human-being.”*

[Green Cooling Initiative, 29 October 2024](#)

Image: Participants of the closing workshop ©GIZ/GCI III

EUROPE AND CENTRAL ASIA

10. UNDP/GEF Project Completed: Partners Reflect on Achievements and Lessons Learned

Kibray hosted the closing event of the joint initiative between the United Nations Development Programme (UNDP), the Ministry of Ecology, Environmental Protection and Climate Change of Uzbekistan, and the Global Environment Facility (GEF). Launched in 2019, the project “*Complete HCFC Phase-Out in Uzbekistan through Promotion of Zero-ODS,*



Low-GWP Energy-Efficient Technologies” has advanced the country’s adherence to the Montreal Protocol’s targets, fostering the phase-out of ozone-depleting HCFCs.

In the 1980s, scientific findings revealed that synthetic refrigerants used in cooling systems contributed significantly to ozone layer depletion. In response, the global community adopted the Vienna Convention and the Montreal Protocol to reverse this damage. This joint project has supported the government of Uzbekistan in meeting its obligations under the Protocol by strengthening national HCFC legislation, enhancing customs capacity, developing an HCFC reuse infrastructure, executing demonstration projects, and integrating public outreach and gender inclusion efforts.

During the event, stakeholders recognized the project’s significant milestones and the professional advancements it spurred. A highlight was the adoption of the National Programme for ODS Phase-Out, which established a solid framework for interagency collaboration and sustainable progress.

The project’s impact on customs operations was notable. The State Customs Committee laboratory, which achieved ISO 17025 certification with the support of the project, now designated as a Regional Customs Laboratory by the World Customs Organization. Over 300 customs officers received specialized training, enabling Uzbekistan to align its ODS control practices with international standards.

Within the project, vocational training centers were established at Monomarkaz facilities nationwide, equipping technicians with essential skills to manage ozone-friendly cooling technologies effectively.

Particular attention was given to the implementation of demonstration projects. Through the project, HCFC-based equipment at six demonstration sites across the country was replaced with modern, ozone-safe alternatives with low global warming potential. These projects highlight sustainable methods for cooling and air conditioning, serving as models for businesses throughout Uzbekistan. They showcase the economic and environmental benefits of energy-efficient, ozone-friendly technologies.

The establishment of a national HCFC recycling and reclaiming network was another significant achievement. This network, comprising 12 centers, has processed 13,805 kg of HCFC for recycling and reclaimed 1,356 kg, marking a substantial reduction in environmental impact.

Gender mainstreaming was a vital component of the project, with targeted efforts to empower women in the RAC sector, including scholarships for women pursuing careers in the field and support for four women-led startups.

The participants concluded that the project has laid a robust foundation for the continuous phase-out of HCFCs and the transition to sustainable refrigerants. Though the project has formally concluded, its impact will continue through strengthened partnerships, training institutions, demonstration projects, and newly launched digital platforms.

[United Nations Development Programme \(UNDP\), 5 November 2024](#)

Image: UNDP

11. Fluorinated greenhouse gases 2024 - Report

Introduction

Fluorinated greenhouse gases (F-gases) contribute to climate change; in 2022, they made up 2 % of total greenhouse gas emissions in the EU-27 (EEA, 2024a). F-gases have a range of applications, particularly in the refrigeration, air conditioning and heat pump sector. Most F-gases have much higher global warming potential than other greenhouse gases. Even small amounts of F-gases negatively impact our climate; thus, it is important to reduce and eventually replace their use.



This briefing outlines the important trends in the EU supply¹ of F-gases for the period 2007-2023 and provides an overview of EU's progress under the HFC (hydrofluorocarbons) phase-down schemes of the EU F-gas Regulation and the Montreal Protocol.

Key messages

- The EU remains on track under the HFC phase-down of the EU F-gas Regulation. With a 2 % decrease in 2023 compared to 2022, the EU-wide placing on the market of HFCs in 2023 was 5% below the maximum quantity allowed to be placed on the EU market by the F-gas Regulation.
- The total supply of F-gases to the EU in 2023, measured in CO₂ equivalents, was 10 % lower than in 2022. 2023 F-gases supply is at roughly the same level as observed in 2021 and about 45 % below 2015. The HFC phase-down resulting in a decrease of HFC supply is the key driver for the decrease in F-gases supply since 2015. The 10 % decrease compared to 2022 was due to reductions for both HFCs and SF₆. SF₆ supply has been fluctuating at +/- 40 % since 2015. However, a clear medium-term trend for SF₆ supply is not visible.
- Refrigeration, air conditioning and heat pumps (RACHP) continue to be key applications for these gases, in particular for HFCs which contribute about 70 % to 2023 EU F-gases supply, measured in CO₂ equivalents. SF₆ is mainly used in electrical equipment and makes up about 20 % of 2023 EU F-gases supply.
- After a steady decrease of HFC imports in RACHP from 2016 to 2020, imports of HFCs in RACHP equipment increased by about 50 % (in tonnes of gas) between 2020 and 2022. In 2023, there was a decrease of 13 % compared to 2022, with imports back at 2021 levels again. The primary factor contributing to the decrease in 2023 as compared to 2022 are overall reduced imports of stationary cooling and heating equipment, as well as heat pumps².
- Like in 2021 and 2022, the use of quota authorisations needed in 2023 to cover imports of RACHP equipment under the HFC phase-down exceeded the amount of quota authorisations newly issued in 2023. Compared to 2020, the amount of unused quota authorisations banked by equipment importers has decreased by 24 %. However, the current size of the quota reserve still accounts for more than four times the amount of such equipment imported in 2023.

- Under the Kigali Amendment to the Montreal Protocol, the EU is subject to an international HFC phase-down. In 2023, EU consumption of HFCs was at 43 % of the maximum imposed by the Montreal Protocol. [...]

Authors: Sylvie Ludig, Wolfram Jörß and Victoria Liste (Öko-Institut) Data reported by companies on the production, import, export and destruction of fluorinated greenhouse gases in the European Union, 2007-2023

[European Environment Agency, the European Topic Centre on Climate change mitigation, November 2024](#)

Image: EEA

See also >>> Reducing F-Gases Emissions - Turkey - [Biennial Transparency Report](#) covering Turkey's 2022-2024 climate change combat and adaptation actions, prepared with the contributions of relevant Ministries and institutions and organizations under the coordination of our Climate Change Presidency, to the Secretariat of the United Nations Framework Convention on Climate Change.

How to set up and manage logbooks for refrigeration, air-conditioning, heat pump and other types of equipment - Background: This technical brief reflects the Polish experience of setting up and managing logbooks for refrigeration, air-conditioning, heat pump (RACHP) and other types of equipment. It also provides examples of similar equipment databases used in other developed and developing countries. It explains how equipment logbooks and electronic databases can facilitate a smooth hydrochlorofluorocarbon (HCFC) phase-out and hydrofluorocarbon (HFC) phase-down. It also provides guidance on the contents and format of the equipment logbooks, and on how to set up and manage the related databases. The Appendix describes the step-by-step approach for setting up and managing equipment logbooks and the relevant electronic databases. **This factsheet is available in [English](#) and [Russian](#)**



FEATURED



Ozone Secretariat latest activities [here >>>](#)



Multilateral Fund latest activities [here >>>](#)



OzonAction latest activities [here >>>](#)



Click [here](#) for recent OzoNews Issues

[Request a PDF](#) of the current issue



Subscribe to OzoNews

Disclaimer:

The United Nations Environment (UNEP), Law Division, OzonAction, provides OzoNews as a free news clipping service for the members of the Montreal Protocol community under UNEP's mandate as an Implementing Agency of the Montreal Protocol's Multilateral Fund. Since its inception in January 2000, the goal of OzoNews is to provide current news relating to ozone depletion and the implementation of the Montreal Protocol, to stimulate discussion and promote cooperation in support of compliance with this multilateral environmental agreement. With the exception of items written by UNEP and occasional contributions solicited from other organizations, the news is sourced from on-line newspapers, journals, and websites.

The views expressed in articles written by external authors are solely the viewpoints of those authors and do not represent the policy or viewpoint of UNEP. While UNEP strives to avoid inclusion of misleading or inaccurate information, it is ultimately the responsibility of the reader to evaluate the accuracy of any news article in OzoNews. The citing of commercial technologies, products or services does not constitute endorsement of those items by UNEP. If you have questions or comments regarding any news item, please contact directly the source indicated at the bottom of each article.

Prepared by: Samira Korban-de Gobert

Reviewed by: James S. Curlin

If you wish to submit articles, invite new subscribers, please contact:

Samira Korban-de Gobert, samira.degobert@un.org



UNEP, OzonAction, 1, rue Miollis, Bldg. VII – 75015, Paris • France