

# OzoNews

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

**Volume XXI | 30 July 2021**

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**GLOBAL**



### **CFC-11: A Crisis Averted**

Scientists' discovery of an unexpected increase in CFC-11 emissions in 2018 presented parties with an urgent challenge, as releases of these ozone-depleting substances (ODS) risked rolling back hard-won progress towards the recovery of the ozone layer. Prior to its ban in 2010, CFC-11 was commonly used as a refrigerant in air conditioning, a propellant in aerosol cans, and a blowing agent for foams and packing materials, among other applications. The unexpected emissions discovered in 2018 were identified as largely coming from northeast China, and in quantities that indicated they must be resulting from illegal production.

Once informed of this development, parties to the Montreal Protocol took swift action to clamp down on illegal production, and atmospheric concentrations once again began to drop. Scientists have measured significant declines in the levels of CFC-11 in the atmosphere, with a drop of 26% between 2018 and 2019 alone. Levels have since returned to pre-2012 concentrations, and the Scientific Assessment Panel concluded that these emissions are unlikely to have a statistically significant impact on the Antarctic ozone hole or global recovery of the ozone layer.

Thus, a more damaging impact was averted by early detection by scientists and the quick actions of parties to investigate and put a stop to illegal activities. For many parties, however, this issue served as a warning about the need to be vigilant and guard against future illegal production and use of this and other ODS. At OEWG-43, several parties underscored the essential role of robust monitoring and enforcement to protect the gains made under the Montreal Protocol. The Scientific Assessment Panel also underlined in its presentation that there are significant gaps in the global observations network, which need to be remedied to ensure such successes in monitoring and enforcement can continue.

To this end, the Ozone Secretariat and European Union (EU) highlighted a pilot project to identify gaps in monitoring and potential locations for new atmospheric monitoring stations, which could be established in partnership with countries around the world. The EU, which described its contribution as "seed money" intended to help launch this initiative, invited parties to join intersessional work ahead of the upcoming Meeting of the Parties, where this issue will be negotiated in much greater detail. Interventions from parties indicated there will also be a need to discuss how best to fill these monitoring gaps, given the substantial cost of establishing monitoring stations and the need to use resources as effectively as possible.

### **Technological Innovations for a Warming Planet**

The second issue prioritized for OEWG-43's technical work related to developments in energy efficiency and low-GWP technologies. The Technology and Economic Assessment Panel's Energy Efficiency Task Force (EETF) presented its 2021 update on these issues, highlighting that transitioning to energy efficient technologies is not only essential for ozone recovery, but it also creates critical co-benefits for the climate. The EETF emphasized the "vicious circle," also referred to as "the cooling paradox," created by the growing need for cooling in a warming world, and the role that cooling plays in exacerbating climate change. Relatedly, the EETF emphasized the importance of cooling for achieving the Sustainable Development Goals. For example, cooling technologies are needed to minimize post-harvest losses in the cold food chain, or, more pertinently in these times, for storing

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medicines and vaccines. They also highlighted the importance of transitioning to low-GWP refrigerants and using equipment with greater energy efficiency; in addition to the emissions decrease, the energy required would drop by 20%.

The Task Force's report on this issue was encouraging, indicating it is possible to leapfrog from technologies using hydrochlorofluorocarbons (HCFCs)—substances being phased out of production and use under the Montreal Protocol, as they are both ODS and greenhouse gases—to more energy efficient equipment using lower-GWP refrigerants. The EETF presented modeling data indicating that synergies with energy efficiency during the phase-down of hydrofluorocarbons (HFCs)—non-ODS introduced as substitutes for HCFCs, but were subsequently found to be potent greenhouse gases—could double the climate benefits of such actions. They also outlined scenarios showing that earlier action of even just a year or two could significantly reduce the total cumulative emissions of HFCs, possibly even halving it by 2050.

This work is critical to the success of the 2016 Kigali Amendment to the Montreal Protocol, which commits parties to cutting production and use of HFCs by 80% by the mid-2040s. The majority of non-Article 5 (developed country) parties have already begun freezing HFC consumption to meet their commitments to the Kigali Amendment. The majority of Article 5 (developing country) parties do not have to freeze their consumption until 2024. The Task Force's work not only keeps parties apprised of the latest technologies available and their suitability, but it also shows what can be achieved if they take more progressive action. It is hoped that by continuing these updates, parties will be encouraged to take on an early-mover status—this is where countries would take steps to start their freeze and phase-down of HFCs ahead of the timeline set out in the Kigali Amendment—thereby realizing greater gains for the recovery of the ozone layer and reducing climate change.

Parties seemed generally encouraged by the work of the Task Force, with many suggesting possible refinements or areas where further investigations could take place. There is, however, some uncertainty as to how projects relating to the HFC phase-down can be supported by the Multilateral Fund, as the Fund is still finalizing the guidelines. As this was a technical discussion, funding-related issues will have to be taken up at the upcoming MOP, where the discussion to continue the Task Force's work will take place.

### **Looking Ahead**

Parties will convene online in October for the second part of the combined 12th meeting of the Conference of the Parties to the Vienna Convention and 33rd Meeting of the Parties to the Montreal Protocol, with the aim of advancing critical policy-related work. The negotiations will build on the essential technical work carried out by the OEWG, which has facilitated momentum on these urgent issues despite the global disruption caused by the COVID-19 pandemic.

It is hoped that face-to-face meetings will resume in 2022. In the meantime, parties will have to overcome the challenge of negotiating urgent policy matters virtually. While the circumstances are not ideal, the vital importance of the work conducted under the auspices of the Montreal Protocol is clear. The messages coming out of the TEAP and the SAP reports at OEWG 43 reinforced the urgency of steadfast action to protect the ozone layer and, in so doing, contribute to the urgent fight against climate change.

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>>> Click [here](#) for daily coverage by IISD

[Earth Negotiations Bulletin, International Institute for Sustainable Development \(IISD\), 14 July 2021](#)

Image: IISD website

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**3. Ozone research managers say no room for complacency on ozone layer recovery - Systematic observations are vital to understand impact of changing climate**



Ozone experts from around the world have stressed the importance of systematic observations to monitor the state of the ozone layer and the presence of ozone-depleting substances, and to increase understanding of the impact of climate change on the Earth's protective shield against harmful ultraviolet rays.

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The stratospheric ozone layer is on the way to recovery thanks to actions taken under the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer. But there is no room for complacency, according to a meeting of Ozone Research Managers (ORM).

The five-day virtual meeting examined a number of new developments since the last meeting in 2017. These included the impact of rising surface temperatures in Polar regions on stratospheric ozone; unexpected emissions of a banned substance known as CFC-11; and international action to phase down the production and consumption of hydrofluorocarbons (HFCs), which are potent greenhouse gases and damaging to the climate.

"Measurements of ozone, ozone-depleting substances and their replacements remain the cornerstone of stratospheric ozone research. These measurements are required to monitor the success of the Montreal Protocol, to assess new factors that can slow down ozone recovery and to support studies of ozone evolution in a changing climate," according to the ORM recommendations.

**UNEP-WMO support**

"We in the environmental movement are deeply proud of all that has been achieved through the Vienna Convention and its Montreal Protocol. And why is that? Quite simply because the Convention is an outstanding example of the international cooperation for the environment guided by science," UNEP Executive Director, Inger Andersen, said in an opening message to the ORM meeting.

"As we seek to overcome the triple planetary crisis, the crisis of climate change, the crisis of biodiversity and nature loss and the crisis of pollution and waste, we can only do so with support from science. So therefore, the science that you generate plays an absolutely critical role in the work that we all are undertaking," she said.

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WMO Secretary-General Prof. Petteri Taalas highlighted the need for continued vigilance and research into the interaction between ozone and climate change in view of the recent [record-breaking ozone holes](#) in both the Arctic and the Antarctic. These were due to a combination of the continuing presence of ozone-depleting substances in the atmosphere and a strong, stable and cold polar vortex which kept the temperature of the ozone layer over the Arctic and Antarctica consistently cold, preventing the mixing of ozone depleted air above the Poles with ozone rich air from other latitudes.

“It's very important to keep on running the research and the related observing systems, to close the data gaps and to ensure close linkages between science, observations and operational services,” said Prof. Taalas.

However, resource constraints – even before the COVID-19 pandemic disruption and restrictions – are posing a major challenge.

### **Overview**

The meeting reviewed ongoing national and international research and monitoring programmes to ensure proper co-ordination of these programmes and identify gaps that need to be addressed. [There are mounting concerns about the gaps in the emissions monitoring system](#) with experts noting the need for more resources for ground-based stations, especially those which produce long-term records of ozone, trace gases and ultra-violet (UV) radiation. This would require considerable sustained funding and strong international cooperation and capacity development. Continued efforts are required to support long-term observational data sets including their resourcing.

A number of presentations and national reports emphasized that systematic atmospheric composition observations remain critical for monitoring and understanding long-term changes in the ozone layer, as well as changes in atmospheric composition, circulation, and climate. Continuing observations will be required for many decades for the verification of the ozone recovery from ozone depleting substances and to understand interactions with the changing climate.

The ORM recommendations will be presented to a meeting of the Conference of the Parties to the Vienna Convention on 28 July. The findings will also be used as input for the next WMO/UN Environment Programme (UNEP) Scientific Assessment of Ozone Depletion in 2022. The most [recent assessment, in 2018](#), concluded that the ozone layer is on the path of recovery and to the potential return of the ozone values over Antarctica to pre-1980 levels by 2060.

The ORM adopted a number of key recommendations which will be put forward to the parties for discussion and adoption at the Thirty-third Meeting of the Parties to the Montreal Protocol due to be held online in October of this year. [...]

[The UN Environment Programme \(UNEP\), Ozone Secretariat, 29 July 2021](#)

*Image: Ozone Secretariat website*

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#### 4. 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 31<sup>st</sup> 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”. The launch also comes in advance of the United Nations Food Systems Summit.

With the support provided by the Montreal Protocol’s Multilateral Fund, the Cold Chain Database initiative is currently being piloted in six countries – Bahrain, Bosnia and Herzegovina, Maldives, North Macedonia, Paraguay, and Senegal. From the pilot data gathering initiatives, a model is being developed that will allow the projection of benefits of cold chain expansion.

GFCCC is an independent not-for-profit industry organisation that seeks to simultaneously reduce food waste, and related greenhouse gas emissions in the processing, transportation, storage, and retail display of cold food by expanding and improving access to energy efficient low-global warming potential technology.

The Cold Chain Database concept, methodology and data collection questionnaires are offered to interested countries and partners to help in assessing local cold chain capacities and designing respective action plans and policies.

> To read GFCCC Press Release about the cold chain database initiative, please see [GFCCC-UNEP OzonAction Cold Chain Modelling Press Release](#)

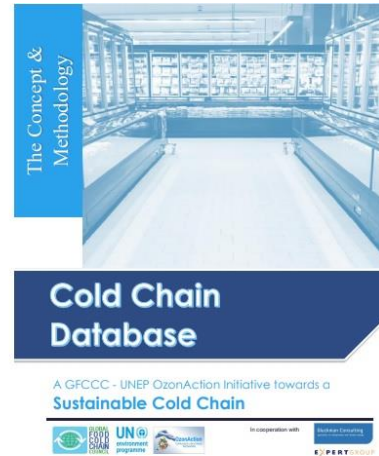
> For more details about the database concept and methodology, please see [GFCCC-UNEP Cold Chain Database Methodology Final](#)

> For countries or partners interested to use the model data collection detailed questionnaires, please fill in the Expression of Interest form and return to [Ayman Eltalouny](#)

[Expression of Interest and NDA of Cold Chain Database.](#)

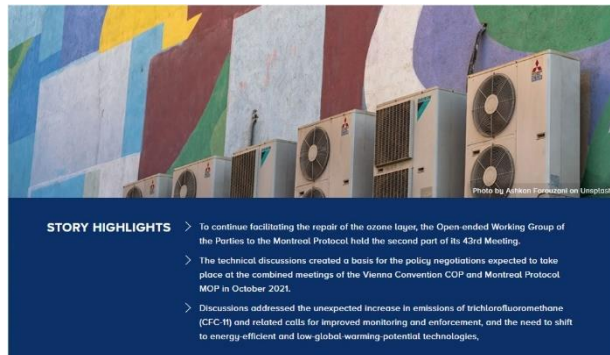
**Contact:** [Ayman Eltalouny](#), Coordinator International Partnerships, United Nations Environment Programme (UNEP), OzonAction

Image: OzonAction website



## 5. Cooling paradox must be addressed: Montreal Protocol Task Force

To continue facilitating the repair of the ozone layer, the Open-ended Working Group of the Parties to the Montreal Protocol held the second part of its 43<sup>rd</sup> Meeting (OEWG 43). The first part of OEWG 43 had taken place in May, a two-day virtual meeting to discuss the funding of the Multilateral Fund.



The technical discussions at the second part of OEWG 43 aimed to establish a basis for the policy negotiations expected to take place at the combined meetings of the Conference of the Parties (COP) to the Vienna Convention and Meeting of the Parties (MOP) to the Montreal Protocol, which will convene virtually in October 2021.

During OEWG 43, the Scientific Assessment Panel (SAP) and Technology and Economic Assessment Panel (TEAP) presented updates on two issues. The first issue was the unexpected increase in emissions of trichlorofluoromethane (CFC-11), which was discovered in 2018. CFC-11 is an ozone-depleting substance that had been banned but seemed to be coming from illegal production in northeast China. This was addressed by parties to the Montreal Protocol once discovered, and levels have since returned to pre-2012 concentrations. The Scientific Assessment Panel has concluded that these emissions are unlikely to have a statistically significant impact on the Antarctic ozone hole or global recovery of the ozone layer. However, in its presentation to OEWG43, the SAP noted that significant gaps exist in the global observations network and need to be remedied to ensure successful monitoring and enforcement.

Several participants highlighted the need to strengthen monitoring and enforcement of parties' obligations under the Montreal Protocol, with the aim of detecting unexpected emissions and preventing illegal production of other ozone-depleting substances. The Ozone Secretariat and the EU highlighted a pilot project to identify gaps in monitoring and potential locations for new atmospheric monitoring stations, which could be established in partnership with countries around the world. This is expected to be negotiated in greater detail at the MOP in October.

On the second topic, energy-efficient and low-global-warming-potential (GWP) technologies, the Energy Efficiency Task Force of the Technology and Economic Assessment Panel provided updates to its 2020 report. The Task Force highlighted the growing accessibility of energy-efficient technologies with low GWP in the refrigeration, air conditioning, and heat pump sectors.

The Task Force said transitioning to energy-efficient technologies is not only essential for ozone recovery, but also creates critical co-benefits for the climate. The EETF emphasized the "vicious circle," also referred to as "the cooling paradox," created by the growing need



for cooling in a warming world, and the role that cooling plays in exacerbating climate change.

Relatedly, the EETF emphasized the importance of cooling for achieving the SDGs. For example, cooling technologies are needed to minimize post-harvest losses in the cold food chain and for storing medicines and vaccines. Speakers also stressed the need to shift to low-GWP refrigerants and use equipment with greater energy efficiency; in addition to the emissions decrease, the energy required would drop by 20%.

The Task Force's report indicates that it is possible to leapfrog from technologies using hydrochlorofluorocarbons (HCFCs)—substances being phased out of production and use under the Montreal Protocol, as they are both ODS and greenhouse gases (GHGs) —to more energy-efficient equipment using lower-GWP refrigerants.

**See also >>> [43<sup>rd</sup> Meeting of the Montreal Protocol OEWG](#) / Daily coverage by IISD**

**[Earth Negotiations Bulletin meeting coverage, 26 July 2021](#)**

*Image: by Ashkan Forouzani on Unsplash*

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## **6. 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).

Currently, the first two available knowledge maps are described below:

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### **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, for the training of technicians and supporting the national policies related to the Montreal Protocol.

### **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.

To develop this tool, UNEP OzonAction collected and reviewed different datasets from multiple sources, and then presented the collected datasets into a common platform and format (mainly in the form of a global map so that data can be geographically displayed). Kindly note that the data and information provided will be updated regularly through the feedback that will be received from NOUs and partners to update and/or add new records. Other maps are currently under development which will include access to other key data and information of importance to the implementation of Montreal Protocol programmes.

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

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



### **[OzonAction UN Environment Programme Law Division, 30 June 2021](#)**

Image: OzonAction

## **AFRICA**

**7. Nigeria, Malta, Egypt: Centro Studi Galileo proceeds with training sessions all over the world - progressively back in class!**

The commitment of Centro Studi Galileo to contribute spreading knowledge and skills on Refrigeration and Air Conditioning throughout the world proceeds relentlessly: in June three international courses have taken place, organized by the renowned HVAC/R training body, often in collaboration with the United Nations.



Energy Efficiency Applied to RAC Best Practices | CSG-UNDP, Nigeria

The first round of theory and practice lessons was conducted in Nigeria: entitled *“Training of Technicians – Energy Efficiency Applied to RAC Best Practices”*, it was carried out on 15-17 July in collaboration with the United Nations Development Programme – UNDP, and even welcomed the participation of Mr John Akhabue, President of NARAP, the Nigerian RAC Association. The course was the continuation of an educational journey that includes 6 trainings overall linked together – 4 for Technicians, 2 for Trainers from the African country. All events are led with dedication by the National Ozone Officer, Mr Idris Abdullahi Ishaka, and take place in a local leading RAC company – Coolplus Ltd – thanks to the tight cooperation with its CEO Mr Ade Awujoola, who’s further a Consultant for CSG.

CSG’s international agenda further moved virtually to Malta, where the *“F-Gas Best Practices: Training and Certification for Malta”* training and certification session took place on 4 June, concluding a project that started back in March of 2021; this led to the achievement of the F-Gas License for the whole crew of a Navy ship, in collaboration with the local certification body Bureau Veritas.



F-Gas Best Practices: Training and Certification for Malta

Full face-to-face lessons are finally back in Egypt, where the *“Train-the-Trainers Alternative Refrigerants Good Service Practice Workshop”* is taking place starting 28 June until 8 July 2021, delivered by CSG in cooperation with the Italian Association of Refrigeration Technicians – ATF and the United Nations Environment Programme – UNEP. The event is taking place in the brand-new, freshly inaugurated and equipped Sharabia training centre and will thus count on the participation of Mr Eng Marco Buoni, President of the European RAC Association AREA, a reality that represents 25 national Associations from the EU.



UNEP-ATF Train-the-Trainers Workshop “Alternative Refrigerants Good Service Practice” | Cairo - Egypt

All courses, whether held remotely or in person, are taught by one of the most appreciated Expert Trainers of Centro Studi Galileo, Mr Gianfranco Cattabriga, a veteran of international experiences.

## [Industria e Formazione, 2 July 2021](#)

Image: *Industria e Formazione*

## ASIA AND THE PACIFIC

### **8. Time to renew multilateral leadership on climate crisis**

The events of the past year are a stark reminder of the need for global action on climate change and environmental protection.

A global pandemic, with its likely source in increased interaction between wildlife and humans, has brought the world's economy to its knees, put a strain on the social fabric across the globe, and claimed millions of lives so far.



In Southeast Asia and indeed across the globe, natural disasters have again taken a heavy toll. Even nations at an advanced stage of development, equipped with the best capacities and technologies, have been increasingly impacted by climate-related disasters affecting their infrastructures, food and health systems, and ecosystems.

Some commentators and decision-makers have seen this unprecedented crisis as a sign of failure of international cooperation and multilateralism and are promoting more isolationist policies. Even before the pandemic struck, an increase in commercial and geopolitical tensions was already a concern, particularly in the Asia-Pacific region.

These approaches are fundamentally misguided. Our economies and societies have become closely interconnected, and advances in digital and transportation technologies will only reinforce this trend.

Multilateral action is complex and can often be frustrating when the national interests of nearly 200 states are at stake.

But we are acutely aware by now that certain challenges are global in nature and require global solutions. Environmental and climate-change issues offer plenty of examples. The oceans, our river basins, the air we breathe, and the biodiversity we rely on for our economy, our health and our scientific progress know no borders.

We also know that multilateral action can work. Joint action on threats to the ozone layer, under the 1987 Montreal Protocol, has led to a significant drop in ozone-depleting substances. The ozone layer is recovering and based on current trends, the World Meteorological Organization foresees an end to the "ozone hole" phenomenon over Antarctica by 2060.

It is worth reviewing the key success factors in this case.

First, the Montreal Protocol addressed a scientifically recognized challenge of global scale, with implications for human health. Second, it benefited from increased consumer awareness of the harmful effects of ozone-depleting substances, thanks to effective education and awareness campaigns.

Third, after some initial resistance, industry leaders invested in research and development and were able to deploy alternative technologies within a few years.

And last but not least, the Montreal Protocol came about as a result of decisive leadership from key developed nations, in a spirit of multilateralism, which included financial and technical support for developing countries to make the shift to more environmentally friendly technologies.

Many of these ingredients are again present, to address larger environmental and climate change challenges.

Scientific evidence of the impacts of environmental degradation and climate change on human development is overwhelming. Global awareness of these issues is reaching unprecedented levels as impacts on health, access to water, food systems and migrations, just to name a few, are becoming more and more obvious.

Particularly encouraging is the engagement of youth. In Cambodia, a recent study found that 75% of young people under 25 were motivated to take action or had already acted to fight climate change.

The private sector is gradually coming on board. Many industry leaders now recognize the opportunities of the green economy. Investments in the development and implementation of sustainable energies and other climate-friendly technologies are booming, and sustainable finance is gathering pace.

In the last few months, we have seen encouraging signs of leadership from some of the world's leading economies, including announcements of carbon-neutrality targets by Japan and China, and the European Green New Deal.

Most recently, the decision of the United States to rejoin the Paris Agreement on climate change and its commitment to achieve net zero emissions of greenhouse gases by 2050 have the potential to re-invigorate global action on climate change. Strong partnerships with climate-vulnerable nations must be a key component of that response.

Multilateral action allows all nations, no matter how small, to chip in and contribute to a solution. It has a multiplier effect, which makes possible results that leading world or regional powers may not be able to achieve on their own.

The Cambodian government fully appreciates the multilateral support received as the country successfully transitioned to a new era of peace and stability. We are now in a position to play an active role in these multilateral mechanisms, as demonstrated by our contribution to United Nations peacekeeping operations, and our active participation in environmental and climate-change conventions.

The submission of our updated 2030 targets under the UN Framework Convention on Climate Change is the most recent example of this commitment, and Cambodia is currently working on its own Long Term Low Emissions Development Strategy.

As mentioned recently by our prime minister at the P4G Summit in Seoul, Cambodia, as ASEAN chair for 2022, will work with all members of the Association of Southeast Asian Nations to implement the agreed comprehensive Covid recovery framework, including clear commitments on sustainable, resilient and climate-smart recovery.

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At the global level, a successful COP26 in Glasgow will be essential to increase momentum. We call on all parties to finalize negotiations on the rulebook for the implementation of the Paris Agreement on climate change. Governments and private investors alike need this clear framework to get more ambitious projects moving on the ground.

After a forced period of economic slowdown and self-reflection in 2020, this year must mark a new beginning on how the international community addresses the global environmental and climate-change crises. Cambodia stands ready to do its part.

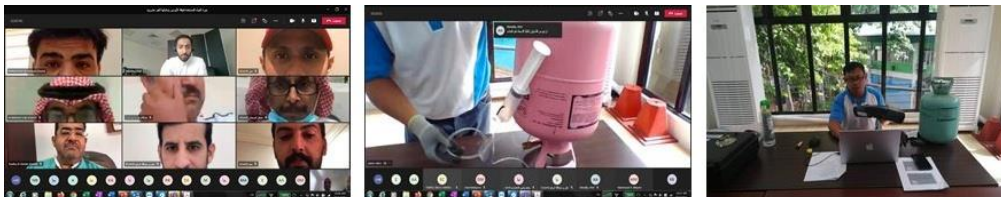
We look forward to renewed global leadership and commitment to multilateral action from our partners. Collectively, we must seize this opportunity, to help our people and our planet thrive

[The Middle East North Africa Financial Network, Asia Times, \(MENAFN-Asia Times\), 28 July 2021](#)

*Image: MENAFN-Asia Times website*

## WEST ASIA

### 9. Saudi Arabia and the Philippines collaborate in customs and enforcement training



**Saudi Arabia, 16 July 2021** - The UN Environment Programme (UNEP) OzonAction Compliance Assistance Programme (CAP), West Asia Office in association with its partners the National Ozone Unit (NOU) of the Kingdom of Saudi Arabia (KSA), the KSA-Customs Office, and in cooperation with the Philippines Ozone Desk organised a successful two-day (12-13 July 2021) online training for Customs Officers to accomplish the tasks under the HCFC Phase-Out Management Plan (HPMP) in Saudi Arabia. It is worth noting that this was the first time the West Asia Network coordinated with the Southeast Asia Network in conducting a Customs training.

The first day of the training was dedicated to all Saudi Customs Officers tackling the steps in Combatting Illegal Trade of Ozone Depleting Substances (ODS) and the good practices in dealing with confiscated illegal ODS. A link to a pre-test was shared with participants before the training started to check the level of knowledge of the Customs Officers about Montreal Protocol customs-related issues.

The following day had joint participation from Saudi Arabia Customs and Philippines Ozone Officers. The training focused on the safe handling of refrigerants since Customs Officers will be dealing with refrigerants during inspections which may have either high pressure or be toxic or flammable. The training highlighted the actual demonstration of the use of refrigerant identifiers. Different types of refrigerants were identified and step-by-step procedures on how to properly use the refrigerant identifiers in different situations was given emphasis. The trainees were able to interact with the trainers through questions, comments, and interventions.

The successful training concluded with closing remarks by Mr. Khaled Klaly, OzonAction CAP, Regional Network Coordinator, West Asia. He thanked the KSA-NOU, the KSA-Customs Office, and the Philippines Ozone Desk for their collaboration in the training and he hoped that the cooperation between West Asia and Southeast Asia Networks will not be the last but will expand to other Montreal Protocol cooperation issues.

**Contact:** [Khaled Klaly](#), Regional Network Coordinator, West Asia, UNEP, OzonAction CAP  
*Image: OzonAction website*

## LATIN AMERICA AND CARIBBEAN

### 10. Por una capa de Ozono libre de contaminación - Cuba

El proyecto de colaboración internacional "Ozono" liderado por especialistas de la delegación Territorial del Ministerio de Ciencia Tecnología y Medio Ambiente (Citma) en Pinar del Río, mantiene resultados positivos tras su implementación al reducir las emisiones de gases refrigerantes a la atmósfera.

Dentro de las principales acciones que tributan a dichos logros destacan "el funcionamiento de un aula especializada en el Instituto Politécnico Primero de mayo donde se imparten cursos de superación a trabajadores estatales y no estatales, visitas a los organismos que contribuyen a mitigar las emisiones de sustancias dañinas y la realización de concursos por el Día de la Capa de Ozono", refirió la coordinadora del proyecto, Niuris Amador Mendivia.

En la provincia pinareña, varias empresas ostentan el reconocimiento de los especialistas del Citma al implementar buenas prácticas ambientales que contribuyen a declarar -los espacios que ocupan- libres de sustancias agotadoras del ozono.



“Dentro de esas entidades encontramos la Droguería, la Empresa de Gases y la del Turismo en la provincia”, destacó Amador Mendivia.

“Los municipios de Consolación del Sur, Pinar del Río, San Juan y Martínez y San Luis, forman parte del proyecto de colaboración internacional Ozono, por lo que en cada uno de ellos se trabaja intensamente para mantener resultados positivos”, aseguró la especialista.

El proyecto de colaboración internacional Ozono contribuye a la mitigación de emisiones de gases refrigerantes a la atmósfera, lo cual favorece que el agujero negro de la Capa de Ozono sea cada vez más pequeño.

[Radio Guamá, 23 julio 2021, Karina Cardentey Pérez](#)

Image: Radio Guamá website

## NORTH AMERICA

### 11. EPA settles chemical accident prevention planning violations at eight Yakima Valley cold storage facilities

EPA has settled alleged civil chemical accident prevention and preparedness violations with three separate companies operating a total of eight cold storage facilities in Yakima County, Washington.

Today's settlements, reached under [Section 312 of the Emergency Planning and Community Right-to-Know Act](#) (EPCRA), are part of EPA's nationwide campaign to protect unfairly burdened communities and reduce or eliminate accidental releases at industrial and chemical facilities sited in or near neighborhoods similar to those in Zillah and Yakima.

Each facility owner or operator has agreed to pay a penalty as part of these settlements:

Company: Stadelman Fruit LLC - Penalty: \$238,875

Company: Hollingbery and Sons, Inc. - Penalty: \$21,600

Company: Hollingbery CA and Cold Storage LLC - Penalty: \$96,600

All involved facilities use Anhydrous Ammonia for Refrigerated Cold Storage. Because Anhydrous Ammonia can cause serious, often irreversible health effects when released, it is considered an Extremely Hazardous Substance. Under EPCRA, Anhydrous Ammonia has



United States Environmental Protection Agency

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News Releases from Region 10

#### EPA settles chemical accident prevention planning violations at eight Yakima Valley cold storage facilities

EPA: "Zillah and Yakima families deserve better protection from chemical hazards."

July 22, 2021

Contact Information  
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206-534-7492

EPA has settled alleged civil chemical accident prevention and preparedness violations with three separate companies operating a total of eight cold storage facilities in Yakima County, Washington.

Today's settlements, reached under [Section 312 of the Emergency Planning and Community Right-to-Know Act](#) (EPCRA), are part of EPA's nationwide campaign to protect unfairly burdened communities and reduce or eliminate accidental releases at industrial and chemical facilities sited in or near neighborhoods similar to those in Zillah and Yakima.

Each facility owner or operator has agreed to pay a penalty as part of these settlements:

Company: Stadelman Fruit LLC

Penalty: \$238,875

Facilities:

- 4th Avenue, Zillah, Washington
- Cherry Road, Zillah, Washington
- Wells Fork Road, Zillah, Washington
- West Northshore Parkway, Zillah, Washington

Company: Hollingbery and Sons, Inc.

Penalty: \$21,600

Facility: North 3rd Avenue, Yakima, Washington

Company: Hollingbery CA and Cold Storage LLC

Penalty: \$96,600

Facilities: North 3rd Avenue, Yakima, Washington (3 facilities)

All involved facilities use Anhydrous Ammonia for Refrigerated Cold Storage. Because Anhydrous Ammonia can cause serious, often irreversible health effects when released, it is considered an Extremely Hazardous Substance. Under EPCRA, Anhydrous Ammonia has a 500-lb reporting and planning requirements threshold. In addition to its potential harmful health effects from inhalation and skin contact, anhydrous ammonia is highly flammable.

EPCRA Section 312 requires companies to file hazardous chemical inventory report forms with the State Emergency Response Commission, the Local Emergency Planning Committee, and the local Fire Department each year by March 31.

Timely, accurate reporting helps protect responders and surrounding communities in the event of an accident, uncontrolled release of hazardous chemicals.



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[The US Environmental Protection Agency \(US EPA\), 22 July 2021](#)

Image: US EPA website

## EUROPE & CENTRAL ASIA

### 12. Certain HFCs and HFOs are in PFAS Group that five EU countries intend to restrict

In a move with major implications for the European HVAC&R industry, five EU countries announced on July 15 their intention to submit a joint proposal to restrict per- and polyfluorinated alkyl substances (PFAS), including some HFC and HFO refrigerants, to the European Chemicals Agency (ECHA) under the REACH regulation by July 2022.



The five countries – Germany, the Netherlands, Norway, Sweden, and Denmark – are seeking stakeholder feedback on their proposal.

Following submission next year, the restriction proposal would then be subject to “adoption of the final opinions” by ECHA’s Committee for Risk Assessment (RAC) and Committee for Socio-economic Analysis (SEAC), before it would be adopted by the European Commission (EC).

PFAS, which represent a group of over 4,700 “forever chemicals,” are used to produce many consumer products, but exposure to PFAS can be harmful to human health. PFAS include perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), which have already been limited and banned, respectively, in the EU.

As defined by the five countries, PFAS cover a number of f-gases, including certain HFCs and HFOs that are used in HVAC&R applications. In addition, trifluoroacetic acid (TFA), which is a PFAS, is an atmospheric degradation product of HFO-1234yf and HFC-134a.

The REACH regulation governs the registration, evaluation, authorisation, and restriction of chemical substances in the EU. HFCs are separately regulated by the EU F-Gas Regulation,

though HFOs are not. In the U.S. the Environmental Protection Agency also recently increased its oversight of PFAS and is in the process of separately regulating HFCs. On July 15, the U.S. state of Maine became the first government in the world to ban the sale of products containing PFAS as of January 1, 2030, with exceptions for health and safety needs for which alternatives are not available.

Along with their announcement of intent, the five EU countries released a survey in which “the affected industrial associations and companies, but also companies that produce alternatives to PFAS,” can add or correct information published by the countries on PFAS, said the German Environment Agency (UBA) in a statement.

“The aim of this survey is to ensure that the information available reflects the current market situation and to fill data gaps,” said the UBA. “In this way, possible exceptions for some uses of the PFAS that will also be important for society in the future can be identified and all relevant information can be taken into account when submitting the restriction proposal in the coming year.” The countries conducted a similar survey last year.

**Stakeholders are encouraged to respond to the survey by September 19, 2021. It can be accessed [here](#)**

The EC defines restrictions under REACH as “regulatory measures to protect human health and the environment from unacceptable risks posed by chemicals.” In addition, “restrictions may limit or ban the manufacture, placing on the market or use of a substance,” the EC says. “A restriction can apply to any substance on its own, in a mixture or in an article, including those that do not require registration.”

### **Targeted f-gases**

Among the HFCs that the countries identified as being PFAS are: R32, R134a, R125, R143a and R152a. Some of the HFOs include R1234yf, R1234ze(E) and R1233zd(E). These HFCs and HFOs fall under the scope of PFAS as defined by the countries, which is that a substance contain at least one CF<sub>2</sub> (perfluorinated methylene group) or one CF<sub>3</sub> (perfluorinated methyl group) in its molecular structure.

However, the f-gas industry in Europe has pushed back against the classification of HFCs and HFOs as PFAS. “HFCs, HFOs and HCFOs are a distinct subset and due to their properties are not commonly regarded as PFAS,” says the European Fluorocarbons Technical Committee (EFCTC) on its website.

As described by the five countries, PFAS “are, or ultimately transform into, persistent substances, leading to irreversible environmental exposure and accumulation.”

Due to PFAS’ water solubility and mobility, “contamination of surface, ground-, and drinking water and soil has occurred in the EU as well as globally and will continue,” said the countries. “It has been proven very difficult and extremely costly to remove PFAS when released to the environment. In addition, some PFAS have been documented as toxic and/or bioaccumulative substances, both with respect to human health as well as the environment.”

“Without taking action, their concentrations will continue to increase, and their toxic and polluting effects will be difficult to reverse,” they added.

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In a previous report, issued in May, the UBA sounded the alarm about the atmospheric conversion of HFO-1234yf into TFA, noting that higher levels of TFA have been found in rainwater. The report concluded that HFOs should be replaced by natural refrigerants.

[R744, 23 July 2021, By Michael Garry](#)

Image: R744 website / Courtesy of Wikimedia Commons

### 13. Fraud against the environment: OLAF and Spanish authorities bust traffic in illicit F-gases

The European Anti-Fraud Office (OLAF) and the Spanish authorities dismantled a criminal organisation trafficking in illicit refrigerant gases, which are notoriously harmful for the climate. Operation Verbena led to the seizure of 27 tonnes of illicit refrigerant gases – also called F-gases or hydrofluorocarbons (HFCs) – and to the arrest of five people.

Operation Verbena was the biggest operation yet at EU-level against the trafficking of refrigerant gases. In addition to the 27 tonnes seized, investigations discovered 180 tonnes of illicit HFCs that were smuggled before the intervention of the Spanish authorities and OLAF. According to estimates, the criminal group is responsible for the emission of over 234,000 tonnes of carbon dioxide into the environment – that is roughly equivalent to a car driving all the way around the globe almost 9,000 times. Operation Verbena – which put a halt to these activities – was carried out by the Spanish Police and the Spanish Tax Agency, with support from OLAF.

HFCs are commonly used in refrigerated units and while importing them into the EU is allowed, given their significant carbon footprint imports are subject to strict quotas and regulations. According to investigations, the criminal group smuggled the gases into Spain from China by providing false information in the relevant customs documentation. The HFCs were then sold on to companies in Spain, Germany, France, Portugal, and Senegal.

Ville Itälä, Director-General of OLAF, commented: "As we have been witnessing with increasing frequency, fraud and smuggling can have collateral victims such as the environment or people's health and safety. OLAF has been working against illicit refrigerant gases for a few years now. A key element of our work is the cooperation with national authorities, with whom we continuously share our intelligence. I am pleased that we could support this successful operation by the Spanish authorities. Our cooperation with them has been, as ever, excellent and I would like to congratulate them on their results."

More information is available (in Spanish) in the [press release of the Spanish Police](#)

Video footage of the seizure is also [available for download](#)

[The European Anti-Fraud Office \(OLAF\), 15 July 2021](#)



PRESS RELEASE No 16/2021

15 July 2021

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More information is available (in Spanish) in the [press release of the Spanish Police](#).  
Video footage of the seizure for media use is also [available for download](#).

Image: OLAF website

## FEATURED



## [OZONE SECRETARIAT](#)

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

#### 67th IMPCOM

Online meeting, | 20 - 21 Oct 2021

#### 12th COP (part I) – 32nd MOP Bureau

Online meeting, | 22 Oct 2021

#### 12th COP (part II) – 33rd MOP

Online meeting, | 23 - 29 Oct 2021

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

### 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 >>>](#)

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*World Ozone Day 2021*



*Montreal Protocol - Keeping us,  
our food and vaccines cool*

**World Ozone Day 2021**

**celebrating the Montreal Protocol that is:**

[Keeping us, our food and vaccines cool](#)



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

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- [Report of the Extended Intersessional Approval Process](#) established for the 86<sup>th</sup> meeting of the Executive Committee
- Click [here](#) for the Executive Committee upcoming and past Meetings and related documents..
- [Executive Committee Primer – 2020](#) - An introduction to the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol.



**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*



[Climate Action with OzonAction](#) - The Montreal Protocol on Substances that Deplete the Ozone Layer protects human health and the environment by phasing out nearly 100 industrial chemicals known as ozone depleting substances (ODS)- which include hydrochlorofluorocarbons (HCFCs) and chlorofluorocarbons (CFCs). The Montreal Protocol also works to phase down hydrofluorocarbons (HFCs), which are not ODS but are powerful greenhouse gases. UNEP's OzonAction supports 147 developing countries in making their Montreal Protocol targets. [...]

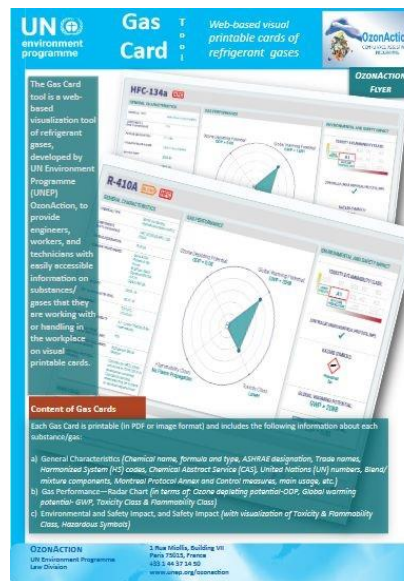
Excerpt from the "[Environmental Governance Update - April 2021](#)" - Good governance for healthy planet and people", June 2021.

Read pages 6-9 to learn more about [Climate Action with OzonAction](#)

**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 the 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)

Substances	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity
Substance 1	100	100	100	100	100	100
Substance 2	200	200	200	200	200	200
Substance 3	300	300	300	300	300	300
Substance 4	400	400	400	400	400	400

**[HCFC Quota and Licence Tracker](#) - UNEP OzonAction launches a new desktop application to assist with HCFC licences and quotas - National Ozone Officers have the great responsibility of managing the allocation and monitoring of quotas for substances controlled under the Montreal**

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

**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 CO<sub>2</sub>-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, CO<sub>2</sub>-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 CO<sub>2</sub>-eq values from both GWP and metric tonne values. This free app from OzonAction is a practical tool for Ozone Officers to help demystify some of this process and put frequently needed information at their fingertips.



**What's new in the app:**



- An updated more user-friendly interface
- Multilingual interface: English, French and Spanish
- A new **Kigali Amendment mode** - in this mode the GWP values used to calculate the refrigerant blends/mixtures only include GWP contributions from components that are controlled HFCs
- Latest updated ODP and GWP values from the recent reports from the Montreal Protocol technology and scientific expert panels as well as the Intergovernmental Panel on Climate Change (IPCC) reports
- References added for sources of all values
- New refrigerant mixtures (with ASHRAE -approved refrigerant designations)

The new and updated UNEP OzonAction **GWP-ODP Calculator** application will help you to convert between values in metric tonnes, ozone depleting potential (ODP) tonnes and CO<sub>2</sub>-equivalent tonnes of substances controlled by the Montreal Protocol and their alternatives.

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

Operation of the application is very simple – just select a substance from the dropdown list and enter the known value in the appropriate field; the calculator will automatically perform the conversion between metric tonnes, ODP tonnes and/or CO<sub>2</sub>-equivalent tonnes and display the corresponding converted values. The ODP, GWP and information about the substance is provided. For mixtures, the components of the mixture and their relative proportions (metric, ODP, CO<sub>2</sub>- equivalent tonnes) are also calculated.

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

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

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

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OzonAction work programme under the Multilateral Fund for the Implementation of the Montreal Protocol.

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



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

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## 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.

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### 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!**

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### [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](mailto: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](#).

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### [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](#)



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Update on [new refrigerants designations and safety classifications](#)

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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.

Read/download the [factsheet](#)

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

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



### [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).

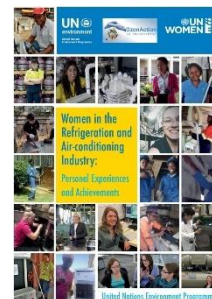
Those chemicals, which are primarily used as refrigerants for air conditioners and fridges, are controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer and are being phased out by all countries according to a specific timeline.



### [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 field and follow in their footsteps.



Read/download the [publication](#)

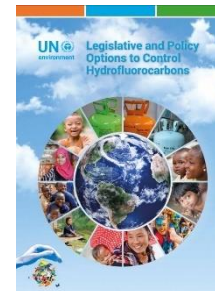
## PUBLICATIONS

### [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. 450 - 2021](#) (in Italian).



[Sustainable Cooling in support of a Resilient and Climate Proof Recovery](#), Report by the Climate and Clean Air Coalition (CCAC), 2021



[Solar Cooling \(2020\), 40<sup>th</sup> Informatory Note on Refrigeration Technologies. Summary](#)

- Solar cooling is a promising and environmentally friendly technology that can help meet the growing global demand for space cooling. Solar cooling can be achieved by various technologies. The two main commercial options are photovoltaic (PV)-driven vapour compression chillers and heat-driven cooling machines powered by solar collectors. Thermal cooling equipment can be coupled with various types of solar collectors with different efficiencies and costs. Overall system efficiencies of PV-driven and solar thermal-driven plants may not have such different values. Economic analysis indicates that the investment cost for the PV solution is at least half that of other systems. Solar cooling may have a very positive environmental impact by reducing the use of fossil fuels, and the technology may be considered mature to compete with conventional cooling equipment.



*\*This Informatory Note is an update of a previous version published in April 2017. It was prepared by Renato Lazzarin (President of IIR Section E).*

**A Summary for policy makers - Solar Cooling 2020 is [available](#) in English and French languages.**

[International Institute of Refrigeration, March 2021](#)

[Leaks, maintenance and emissions: Refrigeration and air conditioning equipment report](#) details common faults identified in both residential and commercial refrigeration and air conditioning equipment. The report also lists the impacts of these faults and how routine maintenance of the equipment has the potential to significantly reduce electricity use, refrigerant leaks and emissions.

*The research was supported by an extensive survey of international and domestic literature included as Appendix B to the report.*

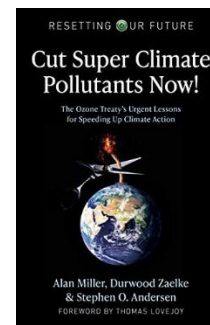


[Australian Government, Department of Agriculture, Water and the Environment, Expert Group, 2021](#)

**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.*

## 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*



Originally established in 2006, the new and improved [R744.com](#) offers a trusted source for the latest CO<sub>2</sub> products, services and news from around the world with a key feature being the new marketplace. In addition to the latest CO<sub>2</sub> news and information about the site's partners, the revamped R744.com includes a store where users can browse all available products, and filter for a wide variety of criteria, including components and services. It is also possible to narrow your search to include only products available in your home region, making it easier to find the best local options. [Watch this space!](#)



[Retradeables introducing a brand new reclaiming marketplace](#) - F-gases are a family of man-made gases used in a range of industrial applications. As consumer demand for refrigeration and air-conditioning products increased, industry emissions have also dramatically increased. New EU regulations force us to prioritize environmental obligations, whilst continuing to serve the increased consumer demand and operate with a decreased amount of F-gas ...



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