



OzoNews

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

Volume XVIII

| 15 July 2018

In this issue:

1. Women in the Refrigeration and Air-conditioning Sector - Call for stories
2. Summary of the 40th Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer: 9-14 July 2018
3. Parties to Montreal Protocol take up urgent response to CFC-11 emissions
4. 2nd International stakeholders workshop on the Refrigeration Servicing Sector, Paris, France, 16-17 July 2018
5. Cooling with less warming: Improving air conditioners in India
6. Joint statement of the 20th China-EU Summit, Beijing, 16 July 2018
7. The Consequences of U.S. Refrigerant Regulation Non-Compliance
8. The air conditioner paradox: heating the world while cooling our homes
9. EC urged to reconsider pre-charge rules
10. Cooling, Europe's unheralded energy challenge
11. Training key to boosting French NatRef market
12. Investigan irregularidades en instalaciones frigoríficas de explotaciones ganaderas
13. Lisbon tests AC demand response

Global



1. Women in the Refrigeration and Air-conditioning Sector - Call for stories

Last Chance to Submit! Deadline is 31st July

Please share **your** experiences of working in the RAC sector

From female service technicians to installers, from designers to trainers, from manufactures to RAC associations, UN Environment OzonAction are looking to highlight your experience.

OzonAction, in cooperation with UN Women, is seeking short 'stories' about women working in the refrigeration and air-conditioning (RAC) sector, explaining their motivations, training and education, the challenges they may have faced, their experience and day to day details of their working lives.

Being aware of the experiences of women working in the RAC sector and the opportunities available can encourage and inspire other women to consider careers in the sector and support girls to seek to follow a career path in this fast growing and important sector.

OzonAction, therefore is launching a global initiative 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 the accepted submissions will be compiled into an official publication and outreached to a broad range of stakeholders in the Montreal Protocol and RAC community.

The authors of the two most relevant and interesting submissions will be invited to attend an award ceremony and side event organised by UN Environment OzonAction at an international Montreal Protocol meeting.

**Completed entry forms with descriptions and photos
should be received by 31st July 2018**

How to apply

If you are a woman working in any part of the RAC sector, we encourage you to submit an entry. Please use the standard template provided. We very much welcome that you provide pictures showing you at work to accompany the submission.

Nominations will be reviewed, verified and edited, as required, by an expert panel established by UN Environment. All the accepted submissions will be compiled into an official UN Environment publication, which will be outreached to a broad range of stakeholders in the Montreal Protocol and RAC community.

The authors of the two most relevant and interesting submissions (as decided by the expert panel) will be invited to attend an award ceremony and side event organised by UN Environment OzonAction at an international Montreal Protocol meeting.

Completed submissions, sent by email, based on the standard template (with photos) should be received by the UN Environment regional focal points as soon as possible but **at the latest by 31st July 2018**.

- "[Women in the RAC Sector](#)" flyer
- [Submission Form](#)

For more information please see [OzonAction website](#)



2. Summary of the 40th Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer: 9-14 July 2018

On Saturday, delegates to the Open-Ended Working Group to the Montreal Protocol on Substances that Deplete the Ozone Layer (OEWG 40) finalized discussions on data reporting, unexpected emissions of trichlorofluoromethane (CFC-11), Technology and Economic Assessment Panel (TEAP) senior expert nominations, energy efficiency, and adjustments to the Protocol.

OEWG 40 concluded all its agenda items until the thirtieth Meeting of the Parties to the Montreal Protocol on Substance that Deplete the Ozone Layer (MOP 30) and received submissions of three conference room papers (CRPs) that will be forwarded for consideration by MOP 30 convening in November in Quito, Ecuador. These relate to: unexpected emissions of CFC-11; access of Article 5 parties to energy-efficient technologies in the refrigeration, air-conditioning and heat-pump sectors; and addressing the composition and balance of the assessment panels.

Photo: From L-R: Ozone Secretariat Executive Secretary Tina Birmpili; Josef Plank, Secretary-General, Federal Ministry of Sustainability and Tourism, Austria; OEWG 40 Co-Chair Yaqoub Al-Matouq, Kuwait; and Paul Krajnik, Austria. By IISD/ENB | Mike Muzurakis

Read/download OEWG40 [Summary](#)

[OEWG-40 Daily coverage by IISD](#)



3. Parties to Montreal Protocol take up urgent response to CFC-11 emissions

- Evidence for rise in CFC-11 emissions indicate levels consistent with new production.
- Parties adopt unanimous call for definitive identification of sources.
- Panels tasked with delivering comprehensive findings to 30th Meeting of the Parties.

VIENNA, 16 JULY 2018 – Delegates, representatives, civil society groups, implementing agencies, and industry stakeholders gathered here this week for the 40th Open-Ended Working Group (OEWG) of the Montreal Protocol. This annual meeting is a critical opportunity for multilateral deliberations informed by scientific assessments in the months before the 30th Meeting of the Parties in November, which serves as the formal decision-making body to the Protocol.

With more than 140 national delegations on hand, representatives convened against the backdrop of an urgent challenge to over 30 years of ozone recovery.

Addressing reports of a persistent rise in ozone depleting CFC-11 emissions, Executive Secretary of UN Environment's Ozone Secretariat, Tina Birmpili opened the meeting with a reminder that the world now looks to the Protocol for answers and action. "It is in these moments that the mechanisms of the international community are more valuable than ever," said Birmpili. "We cannot relax our vigilance for a second. We cannot let this go unaddressed. Any illegal consumption and production of CFC-11 demands decisive action."

First uncovered by members of the Montreal Protocol's Scientific Assessment Panel and published in Nature, delegates were presented with evidence for five key findings.

1. Since 2013, the annual decline in CFC-11 concentration has been only half as fast as it was over the previous decade (2002-2012).
2. Emissions of CFC-11 increased after 2012 and have remained elevated in all years since.
3. Monitoring data currently available suggest Eastern Asia as the source of these emissions.
4. The scale of observations suggests unreported production of CFC-11 after the 2010 global phase-out.
5. Despite accounts presented to the parties, the exact sources of these emissions have yet to be fully verified and accounted for.

The reaction from parties gathered here, emphasized the need for an urgent response based on a full review of the latest findings. In a process that reflected the careful mix of exacting science and collaborative action that has made the Montreal Protocol one of the world's most successful and impactful multilateral agreements, delegates unanimously agreed to definitively quantify, locate and halt these emissions.

Submitted to the Meeting of the Parties for action delegates here requested a sweeping response highlighted by three immediate next steps.

1. The Scientific Assessment Panel to provide to the parties a summary report on the unexpected increase of CFC-11 emissions, including additional information regarding atmospheric monitoring and modelling with respect to such emissions.
2. The Technology and Economic Assessment panel to provide the parties with information on potential sources of emissions of CFC-11 and related controlled substances from potential production and uses, as well as from banks, that may have resulted in emissions of CFC-11 in unexpected quantities in the relevant regions.
3. All parties to submit relevant scientific and technical information on related emissions monitoring by March 1, 2019.

Other key issues addressed by this body included an assessment of opportunities to enhance energy efficiency in the refrigeration and air-conditioning sector while phasing down HFCs and implementation of the Kigali Amendment including destruction technologies for controlled substances and data reporting.

The 30th Meeting of the Parties (MOP 30) to the Montreal Protocol on Substances that Deplete the Ozone Layer is scheduled to convene from 5-9 November 2018.

See also >>> [OEWG-40 Daily coverage by IISD](#)

Photo: View of the dais during the plenary session, 12 July 2018, by IISD/ENB | Mike Muzurakis

[United Nations Environment Programme, 16 July 2018](#)



4. 2nd International Stakeholders Workshop on the Refrigeration Servicing Sector, Paris, France, 16-17 July 2018

In 2016, UN Environment- OzonAction Program organized the First International Stakeholder workshop about the needs of Refrigeration Servicing Sector (RSS) and was attended by all international associations and MLF bilateral and implementing agencies as well as experts from all regions.

The workshop focused on the training needs for the RSS and discussed roadmap for addressing gaps and mobilizing potential capacities amongst all stakeholders to upscale training tools and services.

With the Kigali Amendment entering into force in few months, from today, the interlinkage of commitments will affect the business and projects being offered to the servicing sector in all A5 countries. Therefore, it is critical to join forces and efforts to explore options towards Streamlining Support and Services to the RSS, with the aim of conveying unified messages that can lead to 'Change the Mindset of the RSS'.

The 2nd International Stakeholders Workshop on the Refrigeration Servicing Sector, Paris, France, 16-17 July 2018, accordingly, is designed to address all above and seek opportunities for collaboration amongst international stakeholders.

The program is structured into five (5) tracks as follows:

- Considerations and Emerging issues of RSS
- Training Programs and Resources
- Certification and Qualifications
- Enhance Refrigerant Management Practices
- Empowering Local Associations in Article 5 Countries

Contact: [Ayman El-Talouny](#), Montreal Protocol Coordinator for West Asia

[UN Environment, OzonAction, July 2018](#)

Asia Pacific

5. Cooling with less warming: Improving air conditioners in India

As nations phase out ozone-depleting refrigerants to comply with the Montreal Protocol, the AC industry faces the challenge – and opportunity – of switching to refrigerants that have lower global warming potential (GWP).

This transition to climate-friendly refrigerants also provides the opportunity to develop more energy efficient AC designs that will simultaneously help reduce growing energy demand and combat climate change.

This factsheet provides an overview of the growing Indian AC market, strategies to advance climate- friendly ACs, and market opportunities under the Montreal Protocol.

The factsheet also profiles two climate-friendly refrigerants with growing use in the AC market, both in India and worldwide.

[TERI, NRDC & IGSD, 10 July 2018](#)



See also >>> [Curbing Super Pollutants under the Montreal Protocol](#), NRDC Blog, 9 July 2018, By: Anjali Jaiswal and David Doniger

6. Joint statement of the 20th China-EU Summit, Beijing, 16 July 2018



H.E. Li Keqiang, Premier of the State Council of the People's Republic of China, H.E. Donald Tusk, President of the European Council, and H.E. Jean-Claude Juncker, President of the European Commission, met in Beijing on 16 July 2018 for the 20th China-EU Summit. Premier Li and President Juncker jointly attended the China-EU Business Roundtable.

[...]

1. China and the EU consider climate action and the clean energy transition an imperative more important than ever. They confirm their commitments under the historic 2015 Paris Agreement and step up their cooperation to enhance its implementation.
2. Climate change is exerting increasing stress on ecosystems and infrastructure to the point of threatening hard-won developmental gains. Its detrimental impacts on water, food and national security have become a multiplying factor of social and political fragility, and constitute a root cause for instability, including the displacement of people. The increasing impacts of climate change require a decisive response, in view of striving for the common good of all humankind.
3. China and the EU are committed to show firm determination and work together with all stakeholders to combat climate change, implement the 2030 Agenda for Sustainable Development and promote global low greenhouse gas emissions, climate resilient and sustainable development. They underline that fighting climate change and promoting the global clean and low-carbon energy transition, especially towards sustainable, affordable, reliable and modern energy services, are mutually reinforcing objectives to achieve sustainable, secure and competitive economies. They also underline that tackling climate change and reforming our energy systems are significant drivers of job creation, investment opportunities and economic growth.

[...]

Collaborating in Other Multilateral Fora

14. China and the EU will work together with other Parties to promote the universal ratification of the Kigali Amendment to the Montreal Protocol on the phase down of HFCs. The Kigali Amendment is a crucial advance at global level in the area of climate change and environmental protection. Through joint action, China and the EU will facilitate a smooth transition to environment-friendly alternatives used in heating, refrigeration and air conditioning systems.

[...]

[Ministry of Foreign Affairs, the People's Republic of China, 16 July 2018](#)

North America

7. The consequences of U.S. refrigerant regulation non-compliance



A U.S.-based ship owner will implement enhanced leak detection practices, refrigerant handling routines, technician training program and equipment replacement to address violations of the Clean Air Act resulting from illegal releases of refrigerants.

EPA investigators discovered in 2012 that the HVAC/R equipment on two vessels was leaking refrigerant. The EPA found that the vessel owners and operators failed to repair the leaks in a timely manner and failed to confirm that the heating, ventilation, air conditioning, refrigeration (HVAC/R) equipment was not leaking when finally repaired.

Releases of refrigerants (like R-22 (HCFC)) deplete stratospheric ozone and R-134a (HFC) violate requirements under the Clean Air Act National Recycling and Emission Reduction Program. The Program governs the management of ozone-depleting substances and implements the United States' mandates under the (1990) Montreal Protocol on Substances that Deplete the Ozone Layer. The shipowner had violated the regulations set forth in 40 C.F.R. Part 82, Subpart F, and promulgated by EPA pursuant to Section 608 of the Clean Air Act.

The Complaint against the Defendants alleged that they did not make timely repairs to leaking refrigeration appliances on their vessels, verify that leaks were effectively repaired, employ certified technicians and keep required records in violation of Section 608 of the CAA and the regulations promulgated thereunder at 40 C.F.R. Part 82, Subpart F.

The ship owner will pay a \$135,000 penalty, replace some or all its current HVAC/R equipment with units that use an environmental friendly alternative refrigerant, and retire those not replaced. The company will also implement enhanced leak detection, repair practices, training and certification program. The Consent Decree outlines the Compliance Requirements: Compliance with Applicable Law and a Consent Decree Compliance Plan, which needs to be implemented onboard each ship. In addition, the compliance plan demands a third party verifier (inspection) twice per year per ship.

Ship owners strive to ensure their vessels comply with applicable laws, however, the reality of budget cuts and cost savings initiatives is a daily struggle. Implementing a compliance plan and best practice operation for HVAC/R equipment has a cost and provides operational cost savings as well. The cost for settling a legal case versus the cost for a best practice operation is a topic that many vessel owners have expressed an interest in.

[...]

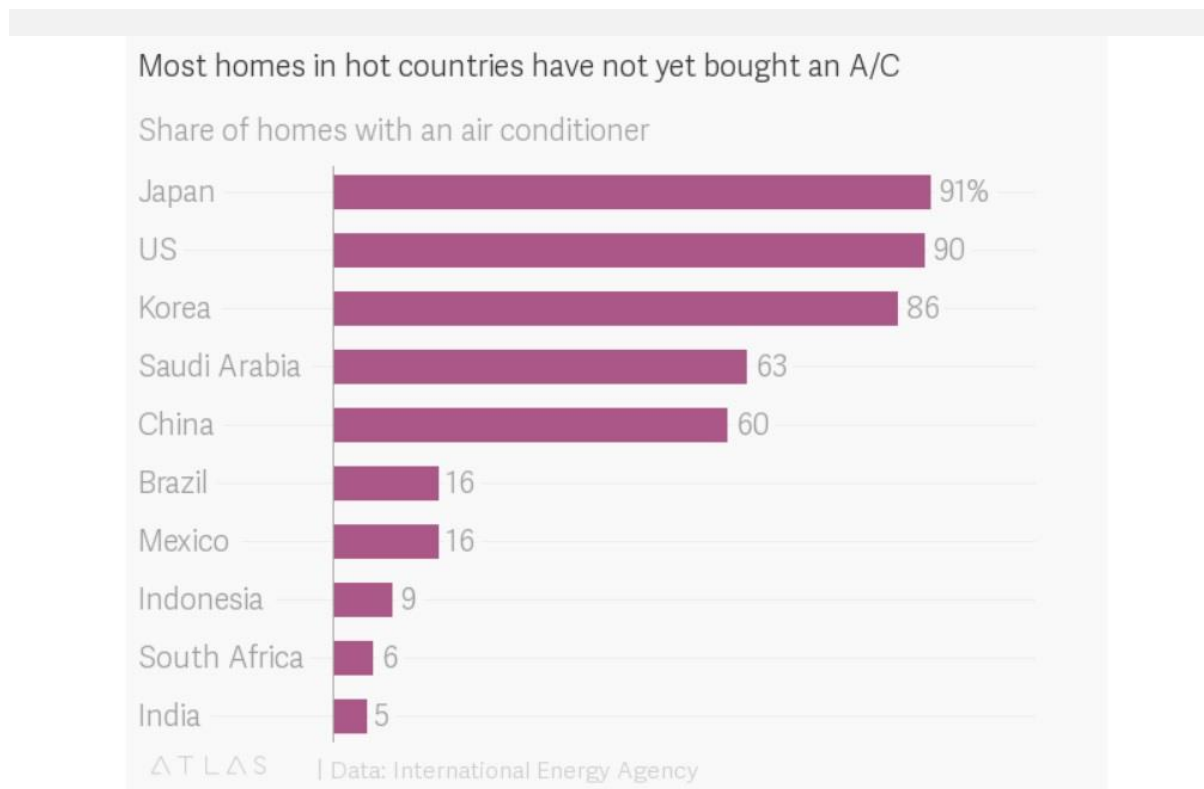
[The Maritime Executive, 11 July 2018, By: Bjarne Snopestad, photo credit: Diamantino Rosa](#)

8. The air conditioner paradox: heating the world while cooling our homes

As climate change drives ever hotter summer temperatures, more and more Canadians are turning to air conditioning to stay cool. It's one of the miserable ironies of global warming because air conditioning contributes to even warmer climates.

The use of air conditioners is predicted to explode as year after year sets new "hottest temperatures on record." According to a May 2018 report by the International Energy Agency, the number of air conditioners worldwide will skyrocket from 1.6 billion units today to 5.6 billion units by 2050. That would spell trouble for the planet because of the energy air conditioners need and some of the chemicals they use.

People in the hottest places on the planet are often much less likely to have air conditioning — under five per cent of people in most African nations own an air conditioner.



Graphic from Quartz, based on data from the International Energy Agency

China leads the world with 569 million units installed, and now spends 68 times more electricity for cooling than it did in 1990. With a burgeoning middle class, China's demand for air conditioners is rising faster than anywhere else in the world.

Because of all the demand for energy, air conditioning is on the rise as a driver of climate change. In the U.S., it's about six per cent of the country's total residential energy use, according to a 2013 report by the Energy Information Administration, but that number might soar to almost 20 per cent by mid-century if things continue.

In addition to electricity demand, air conditioners — especially ones used in developing countries — use hydrofluorocarbons, (HFCs) which are potent greenhouse gases. Even though HFCs represent a small portion of total greenhouse gas emissions, they trap thousands of times more heat in the atmosphere than carbon dioxide. While HFCs don't leak into the environment when an air conditioner is working properly, they cause damage if they aren't carefully disposed of.

In 2016, 196 nations developed a schedule to phase down HFCs under the Kigali Amendment to the Montreal Protocol. As of last November, 21 countries had ratified the amendment which is enough for it to come into force. For the U.S. to fully participate, two-thirds of the Senate needs to support the amendment but since pulling out of the Paris climate agreement last June, President Trump hasn't shown any interest in sending the amendment for a vote. Industry heavyweights like Dow Chemical have urged President Trump to ratify the

amendment, on the premise that it will allow America to boost exports by \$5 billion and create manufacturing jobs by producing replacements for old HFC appliances. [...]

[Canada's National Observer, 13 July 2018, By: Jenny Uechi](#)

Europe & Central Asia

9. EC urged to reconsider pre-charge rules

Leading European air conditioning and refrigeration groups are claiming that the current interpretation of the F-gas regulations is making European manufactured products uncompetitive.

In a letter to the European Commission the groups, which include AREA, ASERCOM and EPEE, have called for a “reconsideration” of the current interpretation of the pre-charged equipment provisions in the quota system.

“The current interpretation of certain export provisions in the EU F-gas Regulation (EU 517/2014) and its implementing regulation (EU 1191/2014) has a negative impact on the competitiveness of EU manufacturers and hampers the export of innovative technologies,” the groups say.

Currently, the refrigerant in pre-charged equipment manufactured in Europe for export outside Europe is still included in the quota system. The situation has been exacerbated by the current refrigerant price increases and supply restrictions, and puts European manufacturers at a competitive disadvantage in world markets.

The manufacturers maintain that, “legally”, pre-charged’ equipment should not be included in the quota system as it is now. They argue that as these appliances represent only 1% of the total available quota, properly applying the quota system to pre-charged equipment exports would not affect the phase down.

“From a competitiveness perspective, properly applying the quota system to “precharged” equipment exports helps to partly level the playing field between companies manufacturing inside and outside the EU,” the groups say. They also add that companies who manufacture in the EU must cope with the use of new refrigerants and components, while their competitors outside of the EU don’t have to.

The letter sent last week is signed by European home appliance manufacturers body APPLiA, refrigeration and air conditioning contractors representative AREA, component manufacturers group ASERCOM, the German heat pump association BWP, heating equipment body EHI, the European Heat Pump Association (EHPA), EPEE, EUROVENT, UK manufacturers group FETA, the German manufacturers body FGK and Poland’s National Refrigeration Forum KFCh.

While, at first welcomed by the industry groups, DG CLIMA’s establishment of the Customs Inward Processing (IPR) has also not solved the problem.

“Unfortunately, after closer examination it does not solve the problem as it can only be applied to less than half of all cases for different reasons,” the groups state in their joint letter. “Moreover, it turned out to be a very complex administrative procedure which is extremely difficult, if not impossible to handle for SMEs.

“For these reasons and given our strong commitment to making the HFC phase-down a success, both in Europe and beyond, we urge the European Commission to reconsider their interpretation of the export provision for ‘precharged’ equipment. The F-Gas Regulation clearly allows to do so, and there are straightforward and quick solutions. For example, the issue can be solved by adapting the HFC register. Only then would global competitiveness of Europe’s production be ensured.”

Earlier this year, the German air conditioning and refrigeration industry made representations to the German Environment Agency, maintaining that pre-charged equipment manufactured in Europe and exported out of the EU should have the refrigerant credited back to the allowable quota.

[CoolingPost, 15 July 2018](#)



10. Cooling, Europe's unheralded energy challenge



Heating and cooling takes up half the European Union's energy consumption but it is often radiators and heaters that hog the spotlight, while air conditioning and fans are sidelined. But cooling is set to become far more important because of the changing climate and economic situation.

Worldwide demand for air conditioning is expected to triple over the next 30 years, according to a report by the International Energy Agency (IEA), which was the focal point of a EURACTIV event held in the European Parliament in June.

Some 1.6 billion buildings around the globe have AC today, a number that will grow to 5.6 billion by 2050, "which means 10 new ACs sold every second for the next 30 years", said IEA report author Brian Motherway.

That massive growth will be driven by a mixture of climate change, expected to increase average temperatures in many parts of the world, and economic changes, which will give more and more people disposable income that can be spent on "luxuries" like AC.

Changing behaviour patterns will mean that people will no longer "make do when it's hot", explained Motherway, and will instead rely on AC, leading to what the IEA expert branded "a ratcheting effect".

The amount of power needed to meet this anticipated surge in indoor cooling will equal the combined electricity capacity of the United States, the European Union and Japan today, the report warned.

But as with many other energy issues, the problem is efficiency related. In this regard, AC units vary widely and those sold in Europe and Japan tend to be at least 25% more efficient than those sold in the United States and China.

Andrea Voigt of the European Partnership for Energy and Environment (EPEE) welcomed the findings of the IEA report, insisting that industry already has the solutions to the challenges, including eco-design and minimum efficiency criteria.

In order to tackle the global aspect of cooling, she called on all parties to the UN's Montreal Protocol to ratify the Kigali amendment immediately, which Voigt said would trigger further efficiency gains.

Alix Chambris, head of EU affairs at manufacturer Danfoss, urged the EU to make the most of its leading role in producing energy efficient products and to export its manufacturing criteria and best available technologies.

That call was well-timed, given that the European Parliament adopted a report at the recent Strasbourg plenary sitting that aims to make sure the EU speaks with "a single and unified voice" when it comes to global warming and other issues.

In order to export climate diplomacy beyond the EU's borders, MEPs insisted that ratification and implementation of the Paris Agreement should be a pre-requisite for future trade deals, although critics have already pointed out that measuring implementation is problematic.

Beyond efficiency

Danish MEP Bendt Bendtsen, who hosted the EURACTIV event, said he is "concerned" by the growing demand for cooling, as it could lead to increased energy imports from Russia or the Middle East if domestic supply is not managed right.

Bendtsen was instrumental in negotiating a deal on the EU's new performance of buildings legislation (EPBD), which will come into force this month.

The EPBD focuses on building renovations and aims to make sure Europe's building stock is as efficient as possible, which Brian Motherway said is another crucial piece in the cooling puzzle.

"If buildings and communities are not designed well, AC is default resource for citizens," he warned.

That point was reiterated by the European Commission's Karlis Goldstein, an efficiency expert at the EU executive's energy directorate, who added that architecture and solar shading are both viable options.

He said though that "air conditioning is not the enemy" and added that the discussion about cooling should remain on the agenda.

[EURACTIV, 10 July 2018, By: Sam Morgan](#)

11. Training key to boosting French NatRef market

Raising awareness of natural refrigerants among technicians in the field is crucial to growing the market in France, heard the first-ever ATMOsphere France conference.

Raising awareness of natural refrigerants among technicians in the field is crucial to growing the market for these technologies in France, heard participants in the first-ever ATMOsphere France conference yesterday.

“Technical competence among technicians will play an essential role in growing the natural refrigerant market,” said Edouard Chalhoub from the ALENÇON branch of Afpa, a French training agency for adults.

“The specificities of natural refrigerants are easy to learn,” Chalhoub argued.

Chalhoub is also the face of Frigoristes Solidaires, a ‘Makerspace’ to encourage wider use of natural refrigerants, promote careers in HVAC&R, and share knowledge.

Familiarise yourself with natural refrigerants within a week

He sees growing demand for natural refrigerant training among end users, too, as these environmentally friendly solutions become more popular in view of the HFC phase-down taking place under the EU F-Gas Regulation.

It arguably takes trained technicians just a week to familiarise themselves with the peculiarities of different refrigerants, Chalhoub argued. “CO₂ can be learned in two days, NH₃ in two days, and hydrocarbons in one day,” he said.

The uniqueness of the French refrigeration sector can influence the type of system chosen by customers. End users go through consultants (so-called bureaux d’études) who recommend which system to choose before passing on the blueprint to the installer.

“The French refrigeration market is very complex,” said Sylvain Gillaux of Austrian manufacturer Hauser. “We must see the frigoristes as partners, and spread the word among all actors in the market,” he said.

“The frigoristes are vital as they’re the ones on the ground. We need to give end users the advice they need to make the right decisions,” Gillaux said.

Hauser’s vision is to go 100% natural refrigerants within the next decade. “No matter the climate or physical constraints for natural refrigerants, f gas-based systems are on the way out,” Gillaux said.

Boost understanding among technicians

ENGIE Axima also stressed the importance of communicating the benefits of natural refrigerants.

“It is essential to convince clients that natural refrigerants are the way to go,” said Laurent Meykuchel, director general of Axima Refrigeration. Improving component availability and reducing costs are of paramount importance in growing the market, he argued.

ENGIE Axima has a development strategy for three natural refrigerants: NH₃, CO₂ and hydrocarbons, to cover all cold chain applications: from -50°C to +20°C and from 1 kW to 5 MW.

“We need to boost understanding of natural refrigerant systems among technicians in France to give end users the confidence to adopt them,” Meykuchel said.

For ENGIE Axima, the energy transition, f-gas quotas and the increase in HFC prices are all major drivers of natural-refrigerant technology development.

“We did our first NH₃ installation in 1908 and our first industrial CO₂ installation in 2000,” said Meykuchel.

Profroid, part of the Carrier/United Technologies group, reported strong growth in CO₂ transcritical system sales in France in 2016 and 2017.

“I’m convinced that the standards and regulation represent a huge opportunity for our sector to put in place environmentally friendly technologies,” said Profroid’s Pierre Boyer.

“We are very much engaged in training because that is a crucial way of reaching new end users,” Boyer said.

[Ammonia21, 6 July 2018, By: Andrew Williams](#)



12. Investigan irregularidades en instalaciones frigoríficas de explotaciones ganaderas

El Equipo del Seprona de la Guardia Civil de León observó irregularidades en varias instalaciones frigoríficas de explotaciones ganaderas dedicadas a la producción de leche en la provincia de León.

La Guardia Civil investiga a tres personas de entre 38 y 44 años de edad, como presuntos autores de los delitos de falsedad documental, estafa, intrusismo profesional y contra el medio ambiente, delitos relacionados con las inspecciones realizadas en numerosas instalaciones frigoríficas de explotaciones ganaderas dedicadas a la producción de leche en la provincia de León.

La investigación se inició a principios de marzo de 2017, cuando el Equipo del SEPRONA de la Guardia Civil de León, tuvo conocimiento de que una empresa frigorista ubicada en la provincia de León, estaba realizando inspecciones y trámites para la inscripción de los tanques de frío en el registro de Industria, encargándose de gestionar a los ganaderos las solicitudes de inscripción de las instalaciones frigoríficas que poseen, expidiendo para ello certificados de instalación, en los que se acreditan presuntamente, de manera falsaria, datos, ensayos, pruebas, revisiones, marcados y/o documentación.

Durante estas pesquisas, se realizaron numerosas inspecciones a explotaciones ganaderas destinadas a la producción de leche, inspeccionando los sistemas de frío que cotejándolos con la documentación presentada en el Servicio Provincial de Industria de la JCyL, se aprecian diversas irregularidades de índole penal. En las más de las 180 inspecciones realizadas por la Guardia Civil, en coordinación con el Servicio de Industria de la JCyL, se comprobó que ninguno de los equipos de frío de las explotaciones inspeccionadas había sido dado de alta en el registro habilitado al efecto, puesto que el Servicio de Industria detectó anomalías en la documentación presentada por la empresa en cuestión, la cual cobraba a sus clientes por los trámites realizados.

El SEPRONA verifica que la empresa nunca había recuperado y gestionado los gases de los equipos de frío, los cuales dada su antigüedad la mayoría utilizan gases fluorados, de los que agotan la capa de ozono, por lo que se desprende que los mismos fueron liberados al medio ambiente, con los consiguientes perjuicios para el mismo. Dichas sustancias se encuentran incursas en el Protocolo de Montreal sobre sustancias que agotan la capa de ozono y por el Protocolo de Kioto sobre gases de efecto invernadero, dado su alto poder destructivo para el ozono estratosférico, lo que contribuye al calentamiento de la atmósfera.

Realizadas gestiones con el Servicio Territorial de Medio Ambiente de la Delegación Territorial de Junta de Castilla y León, en León, se comprobó que esta empresa no se encontraba dada de alta en el registro de productores y gestores de residuos de Castilla y León.

Una vez finalizadas todas las investigaciones, los agentes comprobaron que la manipulación los equipos con sistemas frigoríficos que contenían gases fluorados (instalación, mantenimiento, revisión, manipulación, etc...), no se habían llevado a cabo por personal con la certificación exigida, documento mediante el cual la administración reconoce a su titular la capacidad para desempeñar los trabajos en ellas designadas, debiendo formar parte de una empresa frigorista habilitada. Por todo ello, a estas tres personas, se les imputa los supuestos ilícitos penales antes mencionados.

Las anomalías detectadas en los equipos no afectaban al grado de enfriamiento de la leche, y, por tanto, está garantizada la correcta conservación y la calidad de la leche almacenada.

Las personas investigadas y las diligencias instruidas, fueron puestas a disposición del Juzgado de Instrucción de Guardia de los de León.

[Castilla y León Servicios Integrales de Comunicación, 20 junio 2018](#)



13. Lisbon tests AC demand response

An automatic demand response system involving air conditioning and cold storage now under test in Lisbon could become a model for other European cities.

The Japanese/Portuguese project has multi-split air conditioning systems and cold storage systems installed in four public buildings, including Lisbon City Hall. During the demonstration, the upper limit of electricity consumption for the air conditioning system will be automatically controlled in response to the needs of the grid.



The project, which started this month, is planned to continue through to the end of 2019. It involves co-operation between Japan's New Energy and Industrial Technology Development Organisation (NEDO), Portugal's National Energy and Geology Laboratory, Daikin Industries, local electric power retailers and virtual power plant (VPP) operators.

Based on the results of this demonstration project, Daikin Industries aims to develop an air conditioning automatic demand response system in Portugal and other European regions.

Portugal is a leader in the introduction of renewable energy such as wind power generation and hydroelectric power generation. Portugal's average renewable generation for the month of March exceeded 103% of consumption and the country is predicting that renewables will satisfy its mainland electricity needs by 2040. However, its renewable energy can be unpredictable, so Portugal still currently needs fossil fuels to even out supply.

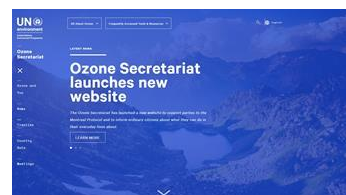
[CoolingPost, 8 July 2018](#)

Featured



OZONE SECRETARIAT

Visit the **NEW** Ozone Secretariat [website](#)



"Keep Cool and Carry On", Theme for World Ozone Day 2018

The theme is accompanied by the tagline: The Montreal Protocol

The theme for this year's World Ozone Day is a motivational rallying call urging all of us to carry on with the exemplary work of protecting the ozone layer and the climate under the Montreal Protocol.

The theme has two connotations – that our work of protecting the ozone layer also protects climate and that the Montreal Protocol is a “cool” treaty, as exemplified by its outstanding success.

Ozone Secretariat is inviting people to join in keeping our planet cool and celebrating the Montreal Protocol's success in protecting the ozone layer and its contribution to combating climate warming by phasing out nearly 100% of controlled ozone-depleting substances that are also potent global-warming gases.

The Montreal Protocol is poised to contribute even more to the fight against global warming through the Kigali Amendment, which will enter into force on 1 January 2019.

The theme and tagline of this year's World Ozone Day in all the six official UN languages are posted on our [website](#) for wider dissemination.



To support your World Ozone Day communication activities, the Secretariat has developed two posters in all the six official UN languages. Please download them from our [website](#) for dissemination in your commemorative activities.

As in previous years, the United Nations Secretary-General's message for World Ozone Day and other materials will be shared prior to the day for further dissemination.

UN Environment, Ozone Secretariat, May 2018

Kigali Amendment: [Thirty nine parties to the Montreal protocol have ratified](#) (as of 25 June 2018).



- [40th Meeting of the Open-ended Working Group of the Parties to the Montreal Protocol](#), 11-14 July 2018, Vienna, Austria

The documents for the forthcoming 40th meeting of the Open-ended Working Group of the Parties to the Montreal Protocol (11 to 14 July 2018, Vienna), and the associated workshop on energy efficiency opportunities while phasing-down hydrofluorocarbons (9 and 10 July 2018) are available on our meeting portal and mobile app.

Please find the documents at the following links on the meeting portal:

- [40th Meeting of the Open-ended Working Group of the Parties to the Montreal Protocol](#)
- [Workshop on energy efficiency opportunities while phasing-down hydrofluorocarbons \(HFCs\)](#)

Mobile app

How to access the app:

Step 1: Download the 'UN Environment Events' app from your app store and install it on your device.

Step 2: Open the app and tap the event titled 'OEWG40 & Energy Efficiency Workshop' to download it.

Step 3: Once the download is complete, the app is available to use. Tap any icon on the app to browse and engage with the content.

The Secretariat will continue to update the meeting portal and mobile app with relevant documents and other material.

- Vienna Convention and Montreal Protocol Meetings: A Primer - [Read/Download](#)
- [29th Meeting of the Parties to the Montreal Protocol](#)
- [28th Meeting of the Parties to the Montreal Protocol](#)
- Final text of the Kigali Amendment to the Montreal Protocol available in all the six official UN languages ([A](#) [C](#) [E](#) [F](#) [R](#) [S](#))
- OEWG 39: The 39th Session of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, preceded by the 58th meeting of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol, held on 9 July and a workshop on safety standards relevant to the use of low-GWP alternatives to HFCs, held on 10 July 2017.
- [Draft report of the thirty-ninth meeting of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer - Addendum](#)
- [Draft report of the thirty-ninth meeting of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer](#)
- Click [here](#) for further information.
- Browse through the Ozone Secretariat "[In Focus](#)" to learn about latest updates.
- Click [here](#) for Montreal Protocol Meetings Dates and Venues

The UN Environment Assessment Panels have been the pillars of the ozone protection regime since the very beginning of the implementation of the Montreal Protocol. Through provision of independent technical and scientific assessments and information, the Panels have helped the Parties reach informed decisions that have made the Montreal Protocol a world-recognized success.

UNEP initiated the process of setting up the assessment panels in 1988, pursuant to Article 6 of the Montreal Protocol, to assess the scientific issues of ozone depletion, environmental effects of ozone depletion, and the status of alternative substances and technologies and their economic implications.

Four panels, namely the panels for Scientific, Environmental Effects, Technology, and Economic Assessments were formally established and approved at the First Meeting of the Parties to the Montreal Protocol in 1989 where their first set of Terms of Reference were adopted. Shortly after the Second Meeting of the Parties in 1990, the Panels for Technical Assessment and the Panel for Economic Assessment were merged into one Panel called the Technology and Economic Assessment Panel (TEAP), which together with the Scientific Assessment Panel (SAP) and the Environmental Effects Assessment Panel (EEAP) make up the three assessment panels active today.

In accordance with Article 6 of the Montreal Protocol and subsequent decisions of the Parties, the three panels carry out a periodic assessment at least every 4 years. The first assessment reports were published in 1989 and since then major periodic assessments have been published by all three panels in 1991, 1994, 1998, 2002, 2006 and 2010. For each periodic assessment, the key findings of the panels are synthesized into a short report. The full SAP assessment report for 2014 was published in December 2014, while the EEAP assessment report for 2014 was published in January 2015.

PROGRESS & QUADRENNIAL ASSESSMENT REPORTS

- [EEAP](#)
- [SAP](#)
- [TEAP](#)

SYNTHESIS REPORTS

- [2014 assessments](#)
- [2010 assessments](#)
- [2006 assessments](#)

[Assessment Panels List of Meetings](#)



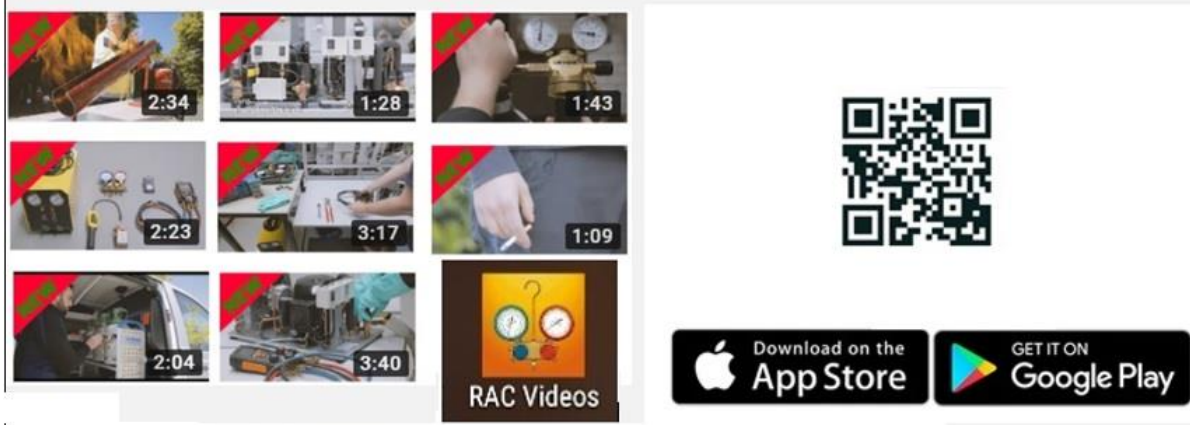
THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL

- [81st meeting of the Executive Committee](#), Montreal, Canada, 18 to 22 June 2018
- [2018 Executive Committee Primer](#)
- [Report](#) of the 80th meeting of the Executive Committee
- [Report](#) of the 79th meeting of the Executive Committee

[Learn more](#)



OZONACTION



New videos available on the OzonAction RAC video application

A series of new videos has just been released on the Refrigeration and Air-conditioning Technician Video Series application, with a focus on working with flammable refrigerants ...

50,000 downloads and counting!

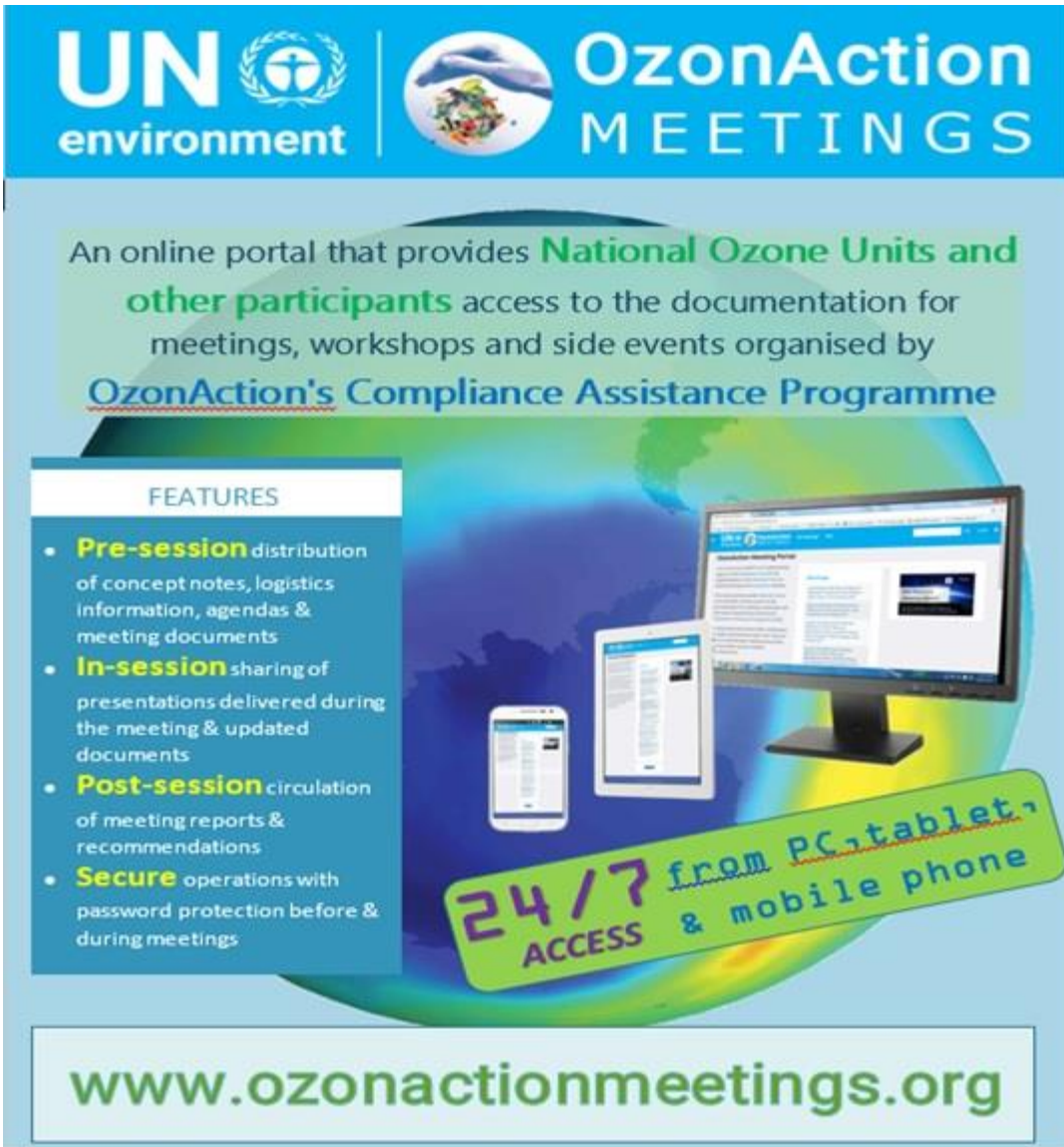
To install, search for "RAC Video" in the Google Playstore or Apple IOS store, or scan the QR code.

OzonAction launches initiative to highlight 'Women in the refrigeration and air-conditioning sector'

OzonAction, in cooperation with UN Women, is seeking to collect experiences and short 'stories' from women working in the refrigeration and air-conditioning (RAC) sector. From female service technicians to installers, from designers to trainers, from manufactures to RAC associations, UN Environment OzonAction are looking to highlight your experience...

"Women in the RAC Sector" [flyer](#) | [Submission Form](#)

Learn more [UN Environment, OzonAction, March 2018](#)



UN environment | **OzonAction MEETINGS**

An online portal that provides **National Ozone Units and other participants** access to the documentation for meetings, workshops and side events organised by **OzonAction's Compliance Assistance Programme**

FEATURES

- **Pre-session** distribution of concept notes, logistics information, agendas & meeting documents
- **In-session** sharing of presentations delivered during the meeting & updated documents
- **Post-session** circulation of meeting reports & recommendations
- **Secure** operations with password protection before & during meetings

24/7 ACCESS from PC, tablet, & mobile phone

www.ozonactionmeetings.org

Visit the [OzonAction Meetings Portal](http://www.ozonactionmeetings.org) and learn more about our current, upcoming, and future events



OzonAction Scoop- A tri-annual newsletter by UN Environment, OzonAction under the Multilateral Fund for the Implementation of the Montreal Protocol.
Issue#1 | Issue#2



The application allow you to easily convert ODP, CO₂-eq and metric quantities of refrigerants and other chemicals

- Helps in understanding and reporting under the Montreal Protocol (and future commitments under the Kigali Amendment)
- The calculator will automatically perform the conversion between metric tonnes, ODP tonnes and/or CO₂-equivalent tonnes (or kg) and display the corresponding converted values
- The app includes both single component substances and refrigerant blends
- The components of a mixture and their relative proportions (metric, ODP, CO₂-eq) are also displayed.

**Available for free from the Apple IOS store and Google PlayStore. Search for "GWP ODP CALC" in the Playstore to install!
Download it Now!**



OzonAction Smartphone Application WhatGas? Quickly search for the information you need

- Chemical name
- Chemical formula
- Chemical type
- ASHRAE designation
- Trade names
- HS code
- CAS number
- UN number
- Montreal Protocol Annex and Control measures
- Ozone depleting potential (ODP)
- Global warming potential (GWP)
- Blend components
- Toxicity and flammability class
- Main uses

OzonAction Smartphone Application WhatGas?
Available for free in the Google Play and Apple IOS Store
Scan the QR code or search for “UNEP”, “OzonAction” or “WhatGas?”



The Kigali Amendment to the Montreal Protocol - Opportunities and Next Steps - OzonAction Video

The Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer reached agreement at their 28th Meeting of the Parties on 15 October 2016 in Kigali, Rwanda to phase down hydrofluorocarbons (HFCs). The UN Environment, OzonAction developed a video to find out from renowned international scientific, health, technical, financial and national experts about background and significance of this Kigali amendment.

The amendment presents many opportunities: improving the environment, refrigeration and air-conditioning systems and especially energy efficiency. It also presents new challenges. It is absolutely critical now for industry, governmental bodies and civil society to work together to adopt greener technologies in each country of the world and fight global warming.

[OzonAction YouTube](#) | See also: [United Nations Treaty Collection](#)

OzonAction Factsheets

Update on New Refrigerants Designations and Safety Classifications
 June 2019

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 assigned an A1 or A2 safety class and introduced into the international market.

Standard 34
 ASHRAE Standard 34, Designation and Safety Classification of Refrigerants, establishes a simple means of referring to common refrigerants other than by their chemical name, formula, or trade name. ASHRAE assigns numbers and safety classification to the refrigerants based on toxicity and flammability data submitted by the refrigerant's producer.

ASHRAE's Numbering System
 Refrigerants are numbered with an R-, followed by the ASHRAE assigned number.

ASHRAE Standard 34
 ASHRAE Standard 34, Designation and Safety Classification of Refrigerants, establishes a simple means of referring to common refrigerants other than by their chemical name, formula, or trade name. ASHRAE assigns numbers and safety classification to the refrigerants based on toxicity and flammability data submitted by the refrigerant's producer.

For pure compounds, the numbers are based on chemical formulae. For blends, numbers are assigned sequentially based on the completion of a satisfactory review of data provided by the refrigerant's producer. Information is available in the current edition, ANSI/ASHRAE Standard 34-2019.

Refrigerants having the form R-xxxx are zeotropic blends of two or more refrigerants whose liquid phase and vapor phase compositions are different (non-azeotropic). Zeotropic blends with the 20th R- class are azeotropic blends of refrigerants whose liquid phase and vapor phase have the same compositions at a specific pressure.

NEW >>> UN Environment-ASHRAE Factsheet Update on New Refrigerants Designations and Safety Classifications

OzonAction Series of Fact Sheets relevant to the Kigali Amendment

UNEP

In October 2016 the Parties to the Montreal Protocol adopted the Kigali Amendment. This brings the production and consumption of hydrofluorocarbons (HFC) under the control of the Protocol and offers to significantly contribute to the fight against climate change.

UN Environment has prepared a series of fact sheets to provide information to Parties (Government, business, industry), and assess on what changes and challenges the new Amendment brings as well as how to address these in order to meet and comply with the new phase-out target.

Below is the list of the fourteen (14) Kigali Fact Sheets. Click on the titles to read or download the document.

- OzonAction Kigali Fact Sheet No. 1 Introduction to the Kigali Amendment
- OzonAction Kigali Fact Sheet No. 2 Current Use of HCFCs and HFCs
- OzonAction Kigali Fact Sheet No. 3 ODS, CFCs and the Banlist of CFCs
- OzonAction Kigali Fact Sheet No. 4 Low GWP Fluids and Technologies
- OzonAction Kigali Fact Sheet No. 5 HFC Bans and Technologies
- OzonAction Kigali Fact Sheet No. 6 Heat Exchangers and Energy Efficiency
- OzonAction Kigali Fact Sheet No. 7 Heat Exchangers and Refrigeration
- OzonAction Kigali Fact Sheet No. 8 Heat Exchangers and Refrigeration
- OzonAction Kigali Fact Sheet No. 9 Technical Issues, High Ambient Temperature
- OzonAction Kigali Fact Sheet No. 10 Technical Issues, Flammability
- OzonAction Kigali Fact Sheet No. 11 Barriers to Successful Implementation
- OzonAction Kigali Fact Sheet No. 12 Interactions with Other Ozone Matters
- OzonAction Kigali Fact Sheet No. 13 Barriers to Implementation
- OzonAction Kigali Fact Sheet No. 14 Delivery and References

Download the Ozone Action Series of Fact Sheets
 1. Download the Ozone Action Series of Fact Sheets
 2. Download the Ozone Action Series of Fact Sheets
 3. Download the Ozone Action Series of Fact Sheets
 4. Download the Ozone Action Series of Fact Sheets
 5. Download the Ozone Action Series of Fact Sheets
 6. Download the Ozone Action Series of Fact Sheets
 7. Download the Ozone Action Series of Fact Sheets
 8. Download the Ozone Action Series of Fact Sheets
 9. Download the Ozone Action Series of Fact Sheets
 10. Download the Ozone Action Series of Fact Sheets
 11. Download the Ozone Action Series of Fact Sheets
 12. Download the Ozone Action Series of Fact Sheets
 13. Download the Ozone Action Series of Fact Sheets
 14. Download the Ozone Action Series of Fact Sheets

Click [here](#) to access **OzonAction Series of Fact Sheets** relevant to the Kigali Amendment.

UNEP

HS Nomenclature (HS Codes) for HCFCs and Certain Other Ozone Depleting Substances

Post-Kigali Update

INTRODUCTION

In recent years, trade patterns in ozone depleting substances (ODS) have changed with the complete phase-out of chlorofluorocarbons (CFCs) on 1 January 2010 (except for a few exempt uses), the hydrochlorofluorocarbon (HCFC) phase-out in progress and the increased trade hydrofluorocarbons (HFCs) and other alternatives in replacement.

To better facilitate monitoring of trade in ODS, the Parties to the Montreal Protocol requested the World Customs Organization (WCO) to review the Harmonized Commodity Description and Coding System, also known as the Harmonized System (HS) codes for HCFCs. This resulted in amending heading 28.23 of Chapter 28 with the addition of existing HS codes for HCFCs and at the same time adding individual HS codes for the new ozone depleting substances.

HS codes previously assigned to CFCs, this amendment entered into force on 1 January 2012.

With the 2018 Kigali Amendment to the Montreal Protocol, phase-out of HFCs is expected that a future amendment of the HS will assign separate HS codes for the most commonly used HFCs and isomers containing HFCs.

HS Classification for ODS (2012)

Under the HS 2012 HCFCs and certain other ODS are to be classified in the HS as follows:

Chapter 28. Organic chemicals

28.23 Halogenated derivatives of hydrocarbons.

2823.11 - Chlorofluoromethane (CFC-11)

2823.12 - Dichlorodifluoromethane (CFC-12)

2823.13 - Chlorotrifluoromethane (CFC-113)

2823.14 - Dichlorodifluoroethane (HCFC-123)

2823.15 - Chlorotrifluoroethane (HCFC-113a)

2823.16 - Dichlorodifluoroethane (HCFC-123a)

2823.17 - Chlorotrifluoroethane (HCFC-113b)

2823.18 - Dichlorodifluoroethane (HCFC-123b)

2823.19 - Chlorotrifluoroethane (HCFC-113c)

2823.20 - Dichlorodifluoroethane (HCFC-123c)

2823.21 - Chlorotrifluoroethane (HCFC-113d)

2823.22 - Dichlorodifluoroethane (HCFC-123d)

2823.23 - Chlorotrifluoroethane (HCFC-113e)

2823.24 - Dichlorodifluoroethane (HCFC-123e)

2823.25 - Chlorotrifluoroethane (HCFC-113f)

2823.26 - Dichlorodifluoroethane (HCFC-123f)

2823.27 - Chlorotrifluoroethane (HCFC-113g)

2823.28 - Dichlorodifluoroethane (HCFC-123g)

2823.29 - Chlorotrifluoroethane (HCFC-113h)

2823.30 - Dichlorodifluoroethane (HCFC-123h)

2823.31 - Chlorotrifluoroethane (HCFC-113i)

2823.32 - Dichlorodifluoroethane (HCFC-123i)

2823.33 - Chlorotrifluoroethane (HCFC-113j)

2823.34 - Dichlorodifluoroethane (HCFC-123j)

2823.35 - Chlorotrifluoroethane (HCFC-113k)

2823.36 - Dichlorodifluoroethane (HCFC-123k)

2823.37 - Chlorotrifluoroethane (HCFC-113l)

2823.38 - Dichlorodifluoroethane (HCFC-123l)

2823.39 - Chlorotrifluoroethane (HCFC-113m)

2823.40 - Dichlorodifluoroethane (HCFC-123m)

2823.41 - Chlorotrifluoroethane (HCFC-113n)

2823.42 - Dichlorodifluoroethane (HCFC-123n)

2823.43 - Chlorotrifluoroethane (HCFC-113o)

2823.44 - Dichlorodifluoroethane (HCFC-123o)

2823.45 - Chlorotrifluoroethane (HCFC-113p)

2823.46 - Dichlorodifluoroethane (HCFC-123p)

2823.47 - Chlorotrifluoroethane (HCFC-113q)

2823.48 - Dichlorodifluoroethane (HCFC-123q)

2823.49 - Chlorotrifluoroethane (HCFC-113r)

2823.50 - Dichlorodifluoroethane (HCFC-123r)

2823.51 - Chlorotrifluoroethane (HCFC-113s)

2823.52 - Dichlorodifluoroethane (HCFC-123s)

2823.53 - Chlorotrifluoroethane (HCFC-113t)

2823.54 - Dichlorodifluoroethane (HCFC-123t)

2823.55 - Chlorotrifluoroethane (HCFC-113u)

2823.56 - Dichlorodifluoroethane (HCFC-123u)

2823.57 - Chlorotrifluoroethane (HCFC-113v)

2823.58 - Dichlorodifluoroethane (HCFC-123v)

2823.59 - Chlorotrifluoroethane (HCFC-113w)

2823.60 - Dichlorodifluoroethane (HCFC-123w)

2823.61 - Chlorotrifluoroethane (HCFC-113x)

2823.62 - Dichlorodifluoroethane (HCFC-123x)

2823.63 - Chlorotrifluoroethane (HCFC-113y)

2823.64 - Dichlorodifluoroethane (HCFC-123y)

2823.65 - Chlorotrifluoroethane (HCFC-113z)

2823.66 - Dichlorodifluoroethane (HCFC-123z)

2823.67 - Chlorotrifluoroethane (HCFC-113aa)

2823.68 - Dichlorodifluoroethane (HCFC-123aa)

2823.69 - Chlorotrifluoroethane (HCFC-113ab)

2823.70 - Dichlorodifluoroethane (HCFC-123ab)

2823.71 - Chlorotrifluoroethane (HCFC-113ac)

2823.72 - Dichlorodifluoroethane (HCFC-123ac)

2823.73 - Chlorotrifluoroethane (HCFC-113ad)

2823.74 - Dichlorodifluoroethane (HCFC-123ad)

2823.75 - Chlorotrifluoroethane (HCFC-113ae)

2823.76 - Dichlorodifluoroethane (HCFC-123ae)

2823.77 - Chlorotrifluoroethane (HCFC-113af)

2823.78 - Dichlorodifluoroethane (HCFC-123af)

2823.79 - Chlorotrifluoroethane (HCFC-113ag)

2823.80 - Dichlorodifluoroethane (HCFC-123ag)

2823.81 - Chlorotrifluoroethane (HCFC-113ah)

2823.82 - Dichlorodifluoroethane (HCFC-123ah)

2823.83 - Chlorotrifluoroethane (HCFC-113ai)

2823.84 - Dichlorodifluoroethane (HCFC-123ai)

2823.85 - Chlorotrifluoroethane (HCFC-113aj)

2823.86 - Dichlorodifluoroethane (HCFC-123aj)

2823.87 - Chlorotrifluoroethane (HCFC-113ak)

2823.88 - Dichlorodifluoroethane (HCFC-123ak)

2823.89 - Chlorotrifluoroethane (HCFC-113al)

2823.90 - Dichlorodifluoroethane (HCFC-123al)

2823.91 - Chlorotrifluoroethane (HCFC-113am)

2823.92 - Dichlorodifluoroethane (HCFC-123am)

2823.93 - Chlorotrifluoroethane (HCFC-113an)

2823.94 - Dichlorodifluoroethane (HCFC-123an)

2823.95 - Chlorotrifluoroethane (HCFC-113ao)

2823.96 - Dichlorodifluoroethane (HCFC-123ao)

2823.97 - Chlorotrifluoroethane (HCFC-113ap)

2823.98 - Dichlorodifluoroethane (HCFC-123ap)

2823.99 - Chlorotrifluoroethane (HCFC-113aq)

2823.00 - Dichlorodifluoroethane (HCFC-123aq)

2824.00 - Other (i.e. all remaining HCFCs and a number of other halogenated derivatives of acyclic hydrocarbons containing two or more different halogens, including other than the following ozone depleting substances controlled by the Montreal Protocol: hydrochlorofluoromethane (HCFC) and fluorochloromethane (FC)

Download is presented a correlation table showing the previous HS classification of ODS until 31 December 2011 (HS 2007) and the revised classification which were applicable from 1 January 2012 (HS 2012). Information is also provided on the current HS codes for ODS-containing mixtures (see back page).

HS codes for HCFCs and certain other Ozone Depleting Substances ODS(post Kigali update)

UNEP

The Kigali Amendment to the Montreal Protocol: HFC Phase-down

28th Meeting of the Parties to the Montreal Protocol

INTRODUCTION

The Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer reached agreement at their 28th Meeting of the Parties on 15 October 2016 in Kigali, Rwanda to phase-down hydrofluorocarbons (HFCs).

HFCs are commonly used alternatives to ozone depleting substances (ODS) which not only deplete the ozone layer, but also contribute to global warming. HFCs and greenhouse gases which can have high or very high global warming potentials (GWPs), ranging from about 12 to 14,800.

The phase-down of HFCs under the Montreal Protocol has been under negotiation by the Parties since 2009 and the successful agreement of the Kigali Amendment (Decision XXXI/1) and accompanying Decision XXXI/2) continues the historic legacy of the Montreal Protocol.

This fact sheet summarizes and highlights the main elements of the Amendment of particular interest to countries operating under Article 5 of the Protocol (Article 5 Parties).

OVERVIEW OF AMENDMENT

The Kigali Amendment adds to the Montreal Protocol the phase-down of the production and consumption of HFCs. The main features of the amendment are the following:

- The Kigali Amendment will enter into force on 1 January 2019, provided that it is ratified by at least 20 Parties to the Montreal Protocol (or 50 ODS-free ratifications by the GPP Parties).
- There are two groups of Article 5 Parties with different baseline years and phase-down schedules (see chart and graph on page 2).
- Some non-Article 5 Parties have different baseline quantities and different initial phase-down dates from the main group of non-Article 5 Parties (see chart and graph on page 2).
- A new Annex F has been added to the Protocol. This lists the HFCs separated into two groups:
 - Annex F, Group 1: all HFCs (except HFC-125 and HFC-134a)
 - Annex F, Group 2: HFC-125
- Global warming potential values have been added to the Protocol for the HFCs and selected HCFCs and CFCs (see page 6).
- Production, consumption, trade, exports and imports as well as destruction (tonnes of ODS equivalent).
- Baselines will be calculated from both HFC and HCFC production/consumption.
- There is an exception for high ambient temperature countries (see page 2).
- Import and export licensing systems for HFCs must be in place by 1 January 2019.
- Trade with Parties that have not ratified the Kigali Amendment ("non-Parties") will be banned from 1 January 2021.
- The Executive Committee is requested to develop, within two years, guidelines for financing the phase-down of HFCs.
- A review of the HFC phase-down is proposed on page 4.

The Kigali Amendment to the Montreal Protocol: HFC Phase-down - The phase-down of HFCs under the Montreal Protocol on Substances that Deplete the Ozone Layer has been under negotiation by the Parties since 2009 and the successful agreement on the Kigali Amendment at the 28th Meeting of the Parties on 15 October 2016 in Kigali, Rwanda to phase-down hydrofluorocarbons (HFCs) continues the historic legacy of the Montreal Protocol.

This factsheet summarizes and highlights the main elements of the Amendment of particular interest to countries operating under Article 5 of the Protocol (Article 5 Parties).



OzonAction Multimedia Video Application: Refrigeration and Air-conditioning Technician Video Series - 50,000 download to date - OzonAction has launched an exciting new application which hosts series of short instructional videos on techniques, safety and best practice for refrigeration and air-conditioning technicians.

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

New videos on flammable refrigerants just added!

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

OzonAction Multimedia Video Application: Refrigeration and Air-conditioning Technician Video Series

Available in the [Android Play Store](#) and [Apple Store/iTunes](#).
(Just search for "OzonAction", or scan this QR code)



OzonApp eDocs+ launched in [Android Play Store](#) and [Apple Store](#).

This new application launched by OzonAction on February 12, includes publications, videos, fact sheets and other awareness materials to help National Ozone Units (NOUs) and other stakeholders to build their capacity to implement the Montreal Protocol in a sustainable manner and at the same time to derive climate benefits.

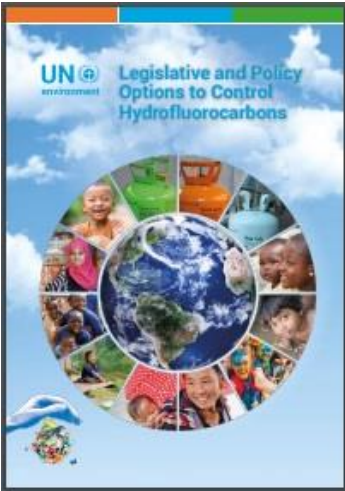
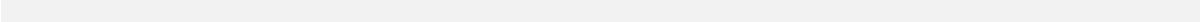
OzonApp eDocs+ available in the [Android Play Store](#) and [Apple Store/iTunes](#).
(Just search for "OzonAction", or scan this QR code)



Publications



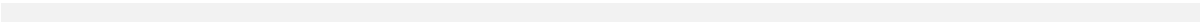
Twinning of National Ozone Officers and Energy Policymakers - Under the Kigali Cooling Efficiency Program (K-CEP), UN Environment is implementing a two-year "twinning" project to build the capacity of National Ozone Officers and national energy policymakers for linking energy efficiency and Montreal Protocol objectives in support of the Kigali Amendment.



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.



Events

2018

- [International Conference on Emerging Technologies for Sustainable and Intelligent HVAC&R Systems](#), 27-28 July 2018, Kolkata, West Bengal, India
- [Solar Heating and Cooling Forum](#), 9 August 2018, Brisbane, Qld, Australia
- **Booking now open** [1st IIR International Conference on the Application of HFO Refrigerants](#). 2-5 September 2018, Austin Court Conference Centre, Birmingham, United Kingdom.
- [The Future of HVAC Conference 2018](#), 12–13 September, Melbourne, Australia.
- [3rd IIR Conference on Cold Application in Life Sciences 2018](#), 12-14 September 2018, St. Petersburg, Russia
- [3rd IIR Conference on Cold Application in Life Sciences 2018](#), 12-14 September 2018, St. Petersburg, Russia

- [8th International Conference on Magnetic Refrigeration at Room Temperature \(Thermag VIII\)](#), 16-20 September 2018, Darmstadt, Germany
- [Healthcare ColDays](#), 15 November 2018, Lyon, France,

See other [IIR upcoming events](#)

Reading



[Twenty Questions and Answers About the Ozone Layer](#), presents complex science in a straightforward manner. It complements the [2014 Scientific Assessment Report of Ozone Depletion](#) by WMO and the U.N. Environment Programme.

Lead Author:

Michaela I. Hegglin

Coauthors:

David W. Fahey, Mack McFarland, Stephen A. Montzka, Eric R. Nash



[Primer on Hydrofluorocarbons \(HFCs\)](#) - IGSD -11 January 2018

Summary:

Fast action under the Montreal Protocol can limit growth of hydrofluorocarbons (HFCs), prevent 100 to 200 billion tonnes of CO₂-eq by 2050, and avoid up to 0.5°C of warming by 2100.

Lead authors:

Durwood Zaelke, Nathan Borgford-Parnell, and Stephen O. Andersen.

Contributing authors:

Kristin Campbell, Xiaopu Sun, Dennis Clare, Claire Phillips, Stela Herschmann, Yuzhe Peng Ling, Alex Milgroom, and Nancy J. Sherman.



The [IIR International Dictionary of Refrigeration](#) Available in 11 languages, the complete version of the International Institute of Refrigeration (IIR) International Dictionary of Refrigeration is now freely accessible online.

The IIR International Dictionary of Refrigeration offers researchers, industrialist or administrations the practical resources required to produce content related to refrigeration technologies in multiple languages.

This online tool allows you to find definitions, in English and French, of scientific and technical terms, as well as identify terms in the language of your

choice and find corresponding translations in the 10 other languages.

The dictionary provides term searches in Arabic, Chinese, Dutch, English, French, German, Italian, Japanese, Norwegian, Russian and Spanish.

The dictionary in numbers:

- more than 4,300 terms in English and French, including 800 synonyms,
- around 3,500 definitions in English and French,
- approximately 7,800 terms, synonyms and definitions
- content in 11 languages.

This international tool is the result of the work of nearly 200 experts, members of the IIR network, from around 30 countries throughout the world.

The dictionary's content covers all areas of refrigeration such as:

- basic principles (thermodynamics, transfer of heat and mass ...)
- production of refrigeration (refrigerated systems, refrigerants...)
- refrigerated installations
- methods of chilling, refrigeration and freezing
- storage, transport and distribution
- refrigeration applications for perishable products and the agro-food industry
- air conditioning
- heat pumps
- cryogenics
- environment

Access the International Dictionary of Refrigeration on the IIR [website](#)



Letter to the Editor

Refrigerants: There is still no vision for sustainable solutions

Risto Ciconkov

Refrigerants: There is still no vision for sustainable solutions

by Risto Ciconkov

Letter to the Editor, International Journal of Refrigeration

[Abstract and highlights](#)

Miscellaneous



I am in the Montreal Protocol Who's Who... Why Aren't You?

The United Nations Environment, OzonAction, in collaboration with Marco Gonzalez and Stephen O. Andersen are updating and expanding the "Montreal Protocol Who's Who" as part of the 30th Anniversary of the Montreal Protocol celebration.

The new website was launched during the 29th Meeting of the Parties to the Montreal Protocol, Montreal, Canada, 20-24 November 2017.

We are pleased to invite you to submit your nomination*, and/or nominate Ozone Layer Champion(s). **The short profile should reflect the nominee's valuable work related to the Montreal Protocol and ozone layer protection.**

Please notify and nominate worthy candidates through the **on-line form**

We look forward to receiving your nomination(s), and please feel free to contact our team for any further assistance concerning your nomination.

Take this opportunity to raise the profile of men and women 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, OzonAction

** If you are already nominated, no need to resubmit your profile*



New *International Journal of Refrigeration* service for IIR members - As of January 2017, not only will IIR members continue to receive the hard copy of the journal but IIR membership will now also give members access to the complete archives of the International Journal of Refrigeration (IJR) online.

Designed with IIR members in mind, this new and practical electronic subscription gives members substantial advantages:

- Immediate and permanent access to the latest research and to IJR archive
- Access the latest articles as soon as they become available online.
- Browse, search and read each one of the nearly 4,500 papers since Volume 1, Issue 1.
- Unlimited access to seminal contributions to the field of refrigeration dating

back to 1978.

- Keep up-to-date with subscriptions to customized e-alerts on New Volumes, Topics and saved Searches.

Enhanced content and functions

- Easily export references, citations and abstracts.

- Print, download or share articles with colleagues or peers.

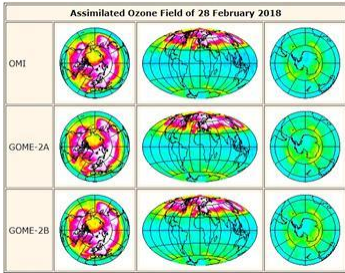
- See which papers, published in Elsevier or elsewhere, have cited any selected article.

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

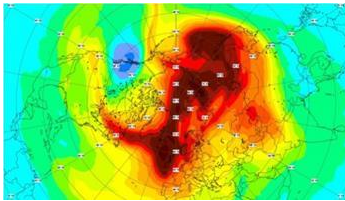
To access this new service, click "[activate my e-IJR subscription now](#)" and follow the instructions.



International Observers - New AREA membership category - Due to the significant worldwide interest in European legislative developments and the increase in competence of personnel who handle new refrigerants, AREA is pleased to introduce its brand new "International Observer" membership category. This provides a fantastic opportunity for non-European RACHP installer bodies the world, to benefit from the expertise and discussions within Europe through access to AREA. Contact: info@area-eur.be



TEMIS -- Near-real time global ozone field. The in near-real time delivered total ozone columns, derived from satellite observations, are input to a data assimilation program which provides global ozone fields for today and a forecast for the coming days.



Copernicus Atmosphere Monitoring Service. Since 7 February, CAMS has predicted the appearance of an ozone mini-hole over western Canada around 12-13 February. The 5-day forecast from the ECMWF Copernicus Atmosphere Monitoring Service (CAMS) showed the location of this ozone mini-hole and predicted its shape and size. This prediction was broadly consistent with other leading global atmospheric composition forecasting centres. Satellite observations acquired on 12 and 13 February data assimilation actually confirmed these predictions. "It is a nice way for us to show that our models really work and can accurately predict these kinds of events," says Mark Parrington, senior scientist for CAMS...



The World Meteorological Organization (WMO) 2019 Calendar Competition
WMO is holding a photo competition for its 2019 calendar. The theme is "**The Sun, the Earth and the Weather**" – which is also the theme of World Meteorological Day on 23 March 2019. [Learn more](#)

Current and previous OzoNews Issues, are available from
OzonAction website



Disclaimer:

The United Nations Environment (UNEP), Economy Division, OzonAction provides OzoNews as a free service for internal, non-commercial use by members of the Montreal Protocol community. 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 the Montreal Protocol. 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, OzonAction

Reviewed by: Shamila Nair-Bedouelle, Head OzonAction Branch, and Ezra Clark, OzonAction

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

Samira Korban-de Gobert,

Tel. (+33) 1 44.37.14.52,

Samira.deGobert@uneenvironment.org



[unsubscribe](#)

