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In this issue:

1. **NEW OzonAction smartphone application: Good Servicing: Flammable Refrigerants Quick Guide**
2. **NEW OzonAction smartphone application: Refrigerant Identifier Video Series**
3. **National Ozone and Customs Officers in SADC region hold twinning workshop and Border Dialogues (South Africa)**
4. **South Asia and South-East Asia Ozone and Customs Officers strengthen import-export controls of Ozone Depleting Substances and for future controls under Kigali Amendment**
5. **Bhutan National Environment Commission confident to phase out ozone-depleting substance HCFCs by 2025**
6. **3 arrested, 2 sought after chemical raid - China**
7. **Making cooling system eco-friendlier, UNDP organizes 'Green Supply Chain Workshop for Cooling Without Warming'**
8. **Europe and Central Asia (ECA) meeting of Ozone Officers in Antalya, Turkey, 11-12 October 2018**
9. **Europe and Central Asia countries explore opportunities for energy-efficient cooling under Kigali Amendment**
10. **Impact of standards on hydrocarbon refrigerants in Europe Market research report**
11. **Taxe HFC : rendez-vous fin 2020 pour voir si la filière respecte ses engagements (France)**
12. **Brazilian Ministry and GIZ in partnership with technical schools provide training for more than 8.000 refrigeration technicians national wide**
13. **Chile will publish a new ammonia standard once the Ministry of Health has approved it**
14. **US EPA proposal would relax HFC refrigerant restrictions**
15. **Climate change: Low cost, low energy cooling system shows promise**
16. **Kuwaiti environmental official calls for unifying GCC energy efficiency programs**

Global



1. NEW OzonAction smartphone application: Good Servicing: Flammable Refrigerants Quick Guide

An interactive Quick Guide on Good Practices for Flammable Refrigerants.

This is the electronic and interactive version of the UN Environment OzonAction **Quick Guide on Good Servicing Practices for Flammable Refrigerants**.

It offers easy reference to the key safety classification and technical properties of flammable refrigerants that are available in the market.

It also provides important safety guidance for the installation and servicing of room air-conditioners designed to use flammable refrigerants.

This interactive guide allows you to scroll and browse the text, jump to specific chapters or use the comprehensive dynamic index to locate specific keywords, figures and tables.



The application also includes a refrigerant charge size calculator and a room size calculator for flammable refrigerants.

Available for free on the Google play store (*Apple version coming soon*) - Search for "UNEP Quick guide" or use the QR code.

UN Environment, OzonAction, October 2018



2. NEW OzonAction smartphone application: Refrigerant Identifier Video Series

Guidance on how to identify refrigerants using a refrigerant identifier.

This new OzonAction video series consists of short instructional videos showing how to use and maintain a refrigerant identifier.

The videos provide useful guidance on safety and best practice, understanding the difference between different identifier units, testing procedures and identification of results.

It is intended for use by Montreal Protocol National Ozone Officers, Customs and Enforcement Officers as well as technicians involved in the servicing and maintenance of refrigeration and air-conditioning systems.



UN Environment, OzonAction, October 2018

Africa



3. National Ozone and Customs Officers in SADC region hold twinning workshop and Border Dialogues (South Africa)

JOHANNESBURG, 26 October 2018 - National Ozone and Customs Officers from the Southern African Development Community (SADC) region (Africa Anglophone Network) gathered at the Birchwood Hotel in Johannesburg, South Africa from 24-26 October 2018, for a three-day Twinning Workshop and Border Dialogues. The workshop was organised by UN Environment OzonAction in collaboration with the Government of South Africa.

The workshop was officially opened by Mr Obed Baloyi, Chief Director, Chemical Management, Department of Environmental Affairs, South Africa. In his remarks, Mr Obedi emphasised the need for strengthening collaboration especially with regards to the Sustainable Development Goals (SDGs) and he encouraged colleagues to prioritise work on chemicals that is carried out in the regions. Mr Baloyi also honoured the late Minister of Environmental Affairs, Edna Molewa, for her selfless sacrifice and great support she offered to the Chemicals Management and Ozone team during her tenure at the Department of Environmental Affairs. She played an active role in the signing of both the Kigali and Paris Amendments. Her passing is a great loss to the Department as well as to the Nation.

Mrs Cecilia Njenga, Head of the UN Environment Office in South Africa gave her opening remarks in which she advised colleagues that they should all be aware of the high level of HCFC consumption in many countries. "There is, in many countries, continued import of HCFC-based equipment and high level of HCFC consumption in the servicing sector". She requested participants in the workshop to review the Ozone Depleting Substances (ODS) policies to ensure that they are comprehensive, up-to-date, and that they have the objective of reducing this high demand. Mrs. Njenga strongly recommended participants to properly implement and enforce their HCFC licensing and quota systems, as a priority.

Mrs. Memory Ndou from the South African Revenue Service within Customs and Excise Division, stressed that the cooperation and coordination of such workshops/activities is critical, to better manage and protect the environment, internationally, regionally and nationally. Improving, integrating and coordinating of border posts and related infrastructure are critical to deepening regional integration and developing transboundary projects. Existing legal instruments of cooperation should be optimally used and should be supported by an effective implementation of strategies. It is therefore important for SADC [Southern African Development Community] countries to strengthen coordination and bilateral engagement to fight against illegal trade of ODS. Furthermore, the accurate data becomes pivotal to all the countries.

The workshop was organised over three days with a varied agenda consisting of presentations and discussions to consider overall challenges in the region and good practices on ODS trade controls. The meeting also considered the management of seized and unwanted ODS, facilitating legal trade and combatting illegal trade of environmentally sensitive commodities and risk profiling techniques for combatting illegal trade. A significant portion of the workshop was dedicated to sharing of enforcement mechanisms and cooperation activities. The final day of the workshop was dedicated to bilateral discussions, which allowed two

trading partner countries, in a confidential setting, to exchange their import-export statistics and explore the differences in reported in import-export data. A parallel session on ODS identification practical exercises with refrigerant identifiers and demonstration of OzonAction smartphone applications was also conducted.

The workshop was part of the 2018 work plan of UN Environment Compliance Assistance Programme (CAP) to support countries in implementing their Montreal Protocol commitments.

Contact:

[Patrick Salifu](#), Montreal Protocol Regional Coordinator, Anglophone Africa

[Ezra Clark](#), Capacity Building Manager

Asia Pacific



4. South Asia and South-East Asia Ozone and Customs Officers strengthen import-export controls of Ozone Depleting Substances and for future controls under Kigali Amendment

BANGKOK, 19 October 2018 – Twenty-six Ozone and Customs Officers from nine countries in South Asia and Southeast Asia Networks attended a Twinning Workshop and back to back Parallel Border Dialogues, which was organised by UN Environment OzonAction from 17-19 October 2018 in Bangkok, Thailand.

Seizures of hydrochlorofluorocarbons (HCFCs) continue around the world with cases of chlorofluorocarbons (CFC) seizures also starting to re-appear, implying increasing evidence of a rise in illegal trade in ozone depleting substances (ODS). Although informal communications to establish the veracity of shipments between trading partners is being promoted through the Informal Prior-informed Consent (iPIC) and this points to considerable quantities of prevented illegal in ODS, a number of countries have been experiencing mis-declaration or mislabelled refrigerants, which poses a risk for countries and presents difficulties to manage confiscated refrigerants by the relevant authorities. There are two main aspects that need to be considered in relation to illegal trade in ODS: monitoring of ODS trade in the domestic market and monitoring of ODS trade between countries. The workshop was organised with the objective to establish collaboration mechanisms within and between countries to tackle illegal trade in ODS.

The workshop was attended by nine countries from South Asia and Southeast Asia Networks: Afghanistan, Brunei Darussalam, China, Indonesia, Iran, Malaysia, Pakistan, Thailand and Timor Leste. Resource persons from UN Environment - National Environmental Law Unit of Law Division, United Nations Office on Drugs and Crime (UNODC) and Regional Intelligence Liaison Offices (RILO) Asia and Pacific also participated in the workshop to share their experiences relevant to enforcement.

Over the three days, the workshop was organised with various approaches and themes. Day 1 was a plenary session and reviewed the overall challenges and good practices on ODS trade control, management of unwanted ODS, facilitating legal trade and combatting illegal trade of environmentally sensitive commodities and risk profiling techniques for combatting illegal trade. It also identified potential areas in collaboration, enforcing monitoring and sustaining capacity of relevant authorities that need could be strengthened for the current ODS control and future HFC (hydrofluorocarbon) control.



The second day focused on sharing enforcement mechanisms and cooperation activities: from issuance of import license until customs clearance and market inspection of each country. Each country shared their specific challenges and learnt good practices from others. Based on information exchange and discussions, role-play exercises were conducted which allowed countries to analyse a number of issues in detail and to exchange ideas and perspectives on different scenarios; data validation, smuggled ODS in the domestic market, harmonised code for HFCs and mis-declaration of the controlled substances.

The last day of the workshop was dedicated to bilateral discussions, whereby two countries, in a confidential setting, exchanged their import-export statistics to understand the difference in import-export data between two trading countries. The bilateral discussion revealed a number of reasons thought to be the cause of the data differences, and countries have agreed to further collaborate on enforcement and data reporting. A session on ODS identification practical exercises with refrigerant identifiers and demonstration of OzonAction smartphone applications was also conducted.

The workshop was part of the 2018 work plan of UN Environment Compliance Assistance Programme (CAP) to support countries in implementing their Montreal Protocol commitments.

Contact:

[Shaofeng Hu](#), Montreal Protocol Regional Coordinator, Asia and the Pacific Office

[Ezra Clark](#), Capacity Building Manager

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



5. Bhutan National Environment Commission confident to phase out ozone-depleting substance HCFCs by 2025

The National Environment Commission (NEC) is confident of phasing out hydrochlorofluorocarbons (HCFCs), an ozone-depleting substance by 2025, five years ahead from other countries.

Commission officials said this during the three-day Montreal Protocol Enforcement training organised by NEC in coordination with the department of revenue and customs in Phuentsholing.

The Montreal Protocol on Substances that Deplete the Ozone Layer came into effect in 1987 to protect human health and the environment through the control of consumption of Ozone Depleting Substances.

The training commenced on October 25 and concludes today. [28 October 2018]

Officials from the custom, Phuentsholing thromde, the ministry of economic affairs, and police attended the training.

The commission's head of policy and program services, Karma Tshering, said Bhutan is trying all the efforts to phase out the HCFCs early.

"It is possible," he said, adding that the commission is aiming for 2025 to keep enough cushion period.

It would also be quite easy for Bhutan, unlike other countries, Karma Tshering said, as the country does not make the depleting substances.

He said Bhutan imports the substances and explained that it was about replacing the substances with other alternatives that are not harmful to the ozone layer. "It would be replaced with a substance that is allowed and ozone-friendly."

Meanwhile, the Montreal training is one of the regular activities NEC conducts every year for the stakeholders that are mostly the enforcement agencies.



Air cooler, air-conditioner, and refrigerators are some of the electronic machinery that use ozone-depleting gases (substances). Chlorofluorocarbons (CFCs), a highly effective substance that has high ozone depleting potential, was substituted with HCFC, a substance that has a slightly lower impact, in 2010.

NEC had targeted to phase it out in 2005 and successfully carried out its mission.

In 2012, NEC then scheduled to phase out HCFC completely by 2025.

Bhutan consumed 5.6 metric tonnes (MT) of HCFC in 2012. In 2017, the country was able to reduce to 3.6MT.

An NEC official at the training, Rinchen Tshering, said the commission has two ways to work this out. "It has decreased as targeted."

He said one is the supply reduction method and the other is the demand reduction method. "We are on track."

People still import HCFCs for their old machinery. However, CFC is prohibited.

Meanwhile, in 2025, HCFC would be phased out and by hydrofluorocarbons (HFCs) would be allowed as an alternative. It doesn't deplete the ozone layer but contributes to global warming.

Post-2025, NEC would then work towards "phase down," which is to gradually minimise the use of HFCs.

Kuensel Online, 27 October 2018, By: Rajesh Rai

6. 3 arrested, 2 sought after chemical raid - China

Local police in Central China's Henan province arrested three suspects regarding the illegal production of an ozone-depleting chemical, with two still on the run.

In August, the Ministry of Ecology and Environment and the local environmental protection department seized a secrete of illegally produced CFC-11, a chlorofluorocarbon often used as a refrigerant, in Mengzhou, Henan province.

The site was hidden in a courtyard of a mechanical factory. The CFC-11 production facility was built without any approval. The ministry seized 29.9 tons of illegally produced CFC-11 and about 30 tons of carbon tetrachloride raw materials on the spot.

The raw materials and products have been transferred to a different storage facility and will be disposed of by qualified personnel. The illegal facility was dismantled according to law.

The Ministry of Ecology and Environment launched a nationwide campaign against illegal use and production of ozone-depleting substances in July.

China Daily, 15 October 2018, By Wang Keju



7. Making cooling system eco-friendlier, UNDP organizes 'Green Supply Chain Workshop for Cooling Without Warming'

UNDP organized a global workshop "Green Supply Chain Workshop for Cooling without Warming" on 8-10 October in Jakarta, Indonesia, which counted with the participation of National Ozone Units representatives from 18 countries and private sector individuals.

Many developing countries are currently facing challenges related to the availability of low Global Warming Potential (GWP) refrigerants and blowing agents alternatives, as well as parts and components required for the conversion of manufacturing plants and aftermarket.

Securing a reliable supply chain of alternatives and components is critical for the successful implementation of the Hydrochlorofluorocarbons Phase out Management Plan (HPMPs).



The Workshop tried to “unlock” the supply chain issue and promoted partnerships across countries and industries to address these challenges.

The workshop materials can be accessed [here](#)

The United Nations Development Programme (UNDP), October 2018

Europe & Central Asia



8. Europe and Central Asia (ECA) meeting of Ozone Officers in Antalya, Turkey, 11-12 October 2018

European and Central Asian countries, the Ozone Secretariat and implementing agencies of the Montreal Protocol met in Antalya to share information and lessons learned from their efforts to reduce the use of ozone-depleting and global warming chemicals.

The meeting of the Regional Ozone Network for Europe and Central Asia (ECA network) took place after to the twinning workshop for Montreal Protocol officers (formerly ozone officers) and national energy policymakers on ozone layer-friendly, climate-friendly and energy-efficient refrigeration and air-conditioning. It was jointly organized by the Ministry of Environment and Urbanization of Turkey and UN Environment / OzonAction and opened by Ms. Pervin Dogan, Chief of the Division for the Protection of the Ozone Layer of the Ministry of Environment and Urbanization of Turkey.

The participants included the designated Montreal Protocol officers of the ECA network countries as well as representatives of Kazakhstan, Russia and Ukraine which are countries with economies in transition (CEIT countries). It was supported by the representatives of the Ozone Secretariat in Nairobi and the implementing agencies UNDP, UN Environment and UNIDO.

Overview of topics discussed

The agenda covered the report of the Ozone Secretariat on the status of compliance, reporting and ratification of the Kigali Amendment in the ECA region, outcomes of the Open-Ended-Working Group meeting and the energy-efficiency workshop in Vienna, policy matters related to the forthcoming Meeting of the Parties in Quito as well as highlights of the World Ozone Day celebrations.

The status of enabling activities for Kigali Amendment ratification was reviewed and several countries might request additional time to complete the projects. Participants shared their experience related to Article 7 and Country Programme data reporting and discussed the difference between both type of reports and how to obtain reliable data on the use of controlled substances by sector. It was highlighted that the experts who conduct verification reports would need to be independent and should not be involved in the preparation or implementation of HCFC phase-out management plans. There have been lively discussions on gender mainstreaming of Montreal Protocol projects and policies and countries requested a webinar and training on that issue.

The countries shared information on World Ozone Day activities and several countries focused on industry stakeholders this year. Macedonia FYR presented potential synergies between Montreal Protocol related legislation and that for end-of-life electronic and electrical equipment which includes refrigeration and air-conditioning appliances. Armenia described non-state actions on promoting energy-efficiency in the country based on a GIZ publication and related posters. UNDP presented several case studies and results of demonstration projects focusing on energy-efficiency. UNIDO briefed the participants on the status of the regional centre of excellence in Yerevan which offers training for refrigeration technicians on the safe use of alternative refrigerants.

UN Environment encouraged the countries to use available publications, tools and resources in the design of HCFC phase-out and HFC phase-down strategies. Countries were encouraged to submit nominations for the Global Montreal Protocol Award for Customs and Enforcement Officers. Bosnia and Herzegovina reported two additional seizures and Serbia prevented illegal trade through the application of the informal Prior Consent mechanism. So far, UN Environment received 23 preliminary indications of seizures out of which 15 took place in the ECA region. This demonstrates the commitment and dedication of customs and enforcement officers in the region.

Small working groups prepared action plans for the implementation of selected panel recommendations of the inter-regional thematic technical workshops and network meetings in Paris in January 2018. This exercise was meant to encourage Montreal Protocol officers to review the list of more than 130 panel recommendations, to select priority recommendations and to develop action plans for implementation.

The results of the survey on ECA needs and priorities, which was conducted in Valencia in June 2018, were presented and the host countries for ECA and KCEP meetings in 2019 decided. Ukraine agreed to host the ECA meetings with the involvement of customs and enforcement officers in May 2019 and Serbia offered to host the ECA / KCEP meeting with the involvement of national energy policymakers in December 2019.

Interested participants visited an ozone-friendly, climate-friendly and energy-efficient ammonia / carbon dioxide cascade system in the nearby Erm Tarim AS factory in Ermenek / Karaman.

Click [here](#) to read more...

UN Environment, OzonAction, October 2018



9. Europe and Central Asia countries explore opportunities for energy-efficient cooling under Kigali Amendment

ANTALYA, TURKEY, 10 October 2018 - Forty-seven experts including officials from 13 governments in Europe and Central Asia gathered in this Mediterranean city to identify opportunities and forge cooperation for promoting energy efficient cooling equipment in their countries and region. The catalyst for the gathering was the recent agreement of the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer. The Amendment, which will enter into force on 1 January 2019, is helping to protect the climate by phasing down the use of powerful greenhouse gases known as hydrofluorocarbons (HFCs). These gases are commonly used in air conditioners and refrigerators. During the transition to alternative gases taking place under the Montreal Protocol, countries have the opportunity to introduce more energy-efficient cooling equipment that would not only reduce carbon dioxide emissions, but also save consumers and businesses money on their electricity bills, help utilities meet ever growing needs for power, and enable governments to reduce fossil fuel imports.

The two-day “Twinning Workshop on Energy-Efficient and Climate-Friendly Refrigeration and Air Conditioning” was organized from 9-10 October in Antalya by UN Environment Programme’s OzonAction Branch and United for Efficiency initiative, and delivered in cooperation with ASHRAE, the international engineering society. The event was supported by the Kigali Cooling Efficiency Program (K-CEP), a new philanthropic initiative that is committing US\$ 52 million to help developing countries transition to energy-efficient, climate-friendly, affordable cooling solutions.

The workshop brought together two traditionally separate communities from the governments of the Europe and Central Asia region – those responsible for managing compliance with the Montreal Protocol and those responsible for national energy policies. With their combined expertise and remits, these officials are key to transitioning global markets toward better performing cooling products that also protect the Earth’s climate.

James S. Curlin, Network and Policy Manager, UN Environment, stated that “It is becoming increasingly evident to many people that one of the major paths to reaching climate protection success is by a combined approach that replaces refrigerants and increases the energy efficiency of the cooling and refrigeration equipment that use them. This is in fact the aspiration that is behind the Kigali Amendment. UN Environment obtained support from K-CEP to hold these Twinning workshops, which build on the successful platform of the Regional Networks of Ozone Officers under the Multilateral Fund, to provide space for Ozone Officers and Energy Officials to find common ground and start a dialogue that they will continue once they return home.”

Mr. Orhan Solak, Head of Department for Climate Change, Turkey’s Ministry of Environment and Urbanization, emphasized that “Turkey is successfully implementing the Montreal Protocol and recently adopted the regulation on fluorinated gases in line with the European F-gas regulation and intend to continue working within the scope of Kigali Amendment. Despite of its rapid economic development, Turkey is striving for sustainable development including climate projection as well as social inclusion.”

Ms. Hu Min, Head of K-CEP’s Access for Cooling and China, noted “Without early and ambitious action in improving cooling efficiency, we would not be able to achieve the goal to keep global warming under 2 degrees, let alone 1.5 degrees.”

The workshop provided a platform for the national energy officials to learn more about the Kigali Amendment and for National Ozone Officers to better understand how energy efficiency considerations could be pursued alongside the refrigerant transition.

UN Environment gave the respective groups short introductions to their counterpart’s subject areas of the Montreal Protocol and energy efficiency. ASHRAE then delivered a technology overview, followed by a presentation by ERKASIS Refrigeration and Heating Systems about a new energy-efficient carbon dioxide-ammonia cascade refrigeration system used for cooling dairy products (later in the day, many participants took part in a site visit to the factory to see the dairy refrigeration system first-hand). Daikin Turkey gave a hands-on training session using an R-32 room air-conditioner, which was well-appreciated by the participants. The International Energy Agency shared global and regional perspectives on policies for transforming cooling markets, as well as model programmes and policies. Inspiring country case examples were then shared by Kyrgyzstan, Albania, Moldova, and Ukraine. Along with the Basel Agency for Sustainable Energy and the Ministry of Nature Protection, Armenia, the International Energy Agency presented options that could be considered for financing energy-efficient cooling programmes. The Regional Environmental Centre for Central Asia presented an overview of the regional energy landscape, and OzonAction did the same for refrigerants. The Ministry of Economy, Montenegro, moderated a group discussion of priorities for enhancing regional collaboration. Throughout, the workshop employed practical exercises and interactive discussions to delve into

critical issues such as understanding the national context, identifying and engaging stakeholders, data collection, and implementing model policies and programmes.

Overall, the workshop achieved its goal of starting a “twinning” dialogue between the Ozone Officers and energy officials and beginning the flow of information at the national level related to the energy efficiency and refrigerants nexus, the first step down the road towards realizing the goals of the Kigali Amendment.

Contact:

[James Curlin](#), Network and Policy Manager, OzonAction UN Environment Programme

[Brian Holuj](#), Programme Officer, United for Efficiency UN Environment Programme

UN Environment, OzonAction, October 2018

10. Impact of standards on hydrocarbon refrigerants in Europe Market research report



An international standards revision to increase the charge limits on using hydrocarbons in HVAC&R systems should expand the market for these natural refrigerants, according to new market research conducted for LIFE FRONT.

The report found that standards limiting the refrigerant charge size and a lack of trained technicians are slowing down the uptake of hydrocarbons for RACHP applications in Europe. According to the research, industry is anticipating the implications of the F-Gas Regulation (EU) No 517/2014. The report reveals that a standards revision for these systems is helping to improve system design and trigger research on the ignition causes for flammable refrigerants, encouraging manufacturers to invest in the development of systems using higher charges.

Based on an online survey of almost 500 HVAC&R experts, and interviews and quantitative data collection from leading European HVAC&R manufacturers, the report analyses the market availability of non-fluorinated flammable refrigerant products and the impact of standards on that market.

According to a majority of survey respondents, for RACHP applications hydrocarbons represent an energy-efficient and low-GWP alternative to hydrofluorocarbons (HFCs). The entry into force in 2015 of the new EU F-Gas Regulation, which requires a reduction in HFC consumption of more than two thirds by 2030 compared to a baseline of average levels in 2009-12, the market for hydrocarbon-based equipment is expected to see vibrant growth in the coming years.

The review of existing safety standards demonstrates that the primary barriers to flammable refrigerants in these standards are mainly related to refrigerant charge size limits, which limit the ability of systems to provide the desired cooling capacity.

Efforts to review the current charge size limits for flammable refrigerants are underway within several European and international standards relevant to the refrigeration, air conditioning and heat pump (RACHP) sector. Nevertheless, the process is lengthy and the timelines for review are unclear in most cases. The development of requirements is in general much more advanced for A2L refrigerants than for A3 refrigerants (hydrocarbons).

Out of the three applications considered by the report (heat pumps, commercial refrigeration and air conditioning), the number of hydrocarbon-based display cabinets in supermarkets is around 2.5 million globally. According to the data collected, there are more than 200,000 heat pumps and a similar number of portable air conditioners using hydrocarbons in Europe; nevertheless, respondents expected propane to see robust growth in the short term, especially for portable AC units

Over half of respondents indicated they already work with hydrocarbons to some extent. Out of those that do not yet offer or use products with hydrocarbons, over 50% plan to start in the future, while about 30% are undecided. More than two thirds of those that will start working with hydrocarbons plan to do so by 2020.

This finding can be seen as industry anticipating the prohibitions and growing HFC prices under the F-Gas Regulation, but also the expected standards revision to smoothen the transition to hydrocarbons within two years.

Read/download the [full report](#)

LifeFront, October 2018

11. Taxe HFC : rendez-vous fin 2020 pour voir si la filière respecte ses engagements (France)

Plus d'une vingtaine d'organisations professionnelles représentant l'ensemble de la filière du froid et de la climatisation s'engagent à accélérer la réduction des émissions de gaz à effet de serre. Une taxe HFC pourrait être votée en 2021 si ces promesses ne sont pas tenues d'ici là.

Nouveau rebondissement dans le dossier de la fiscalité des HFC. Le ministre de la Transition écologique et solidaire, François de Rugy, a annoncé lors d'une interview sur RMC, que le gouvernement déposera un amendement pour la création d'une taxe sur les hydrofluorocarbures (HFC) en 2021, « si les industriels ne respectent pas d'ici là leurs engagements volontaires. »

Dans le cadre d'échanges très soutenus conduits par Uniclimate et l'ADC3R avec les plus hautes autorités de l'État, plus d'une vingtaine d'organisations vont signer un engagement à suivre une série de mesures plus contraignantes encore que les règles imposées par le règlement européen F-Gas. Parmi celles-ci, inscrites dans un texte dont la rédaction n'est pas encore totalement finalisée, figure, par exemple, la fin des installations neuves au R 404A.

Pour vérifier la mise en place de ces actions, un comité de suivi devra être créé pour contrôler les quantités de fluides réellement mises sur le marché. Si les promesses n'étaient pas tenues, alors la taxe serait effective dès 2021. L'annonce officielle des mesures sur lesquelles reposera l'accord devrait intervenir prochainement.

Cette orientation, discutée le 18 octobre à l'Assemblée, avec une concertation jugée "bonne" de la Commission du développement durable, et notamment sa rapporteure Madame Laurianne Rossi, avec son collègue de la commission des finances et le Gouvernement, devrait être confirmée d'ici la fin de la discussion budgétaire.

« La mise en place d'une taxe sur les hydrofluorocarbures (HFC) en 2021, si les industriels ne respectent pas d'ici là leurs engagements volontaires, est une vraie avancée sur un thème essentiel », a déclaré le député Matthieu Orphelin, lui-même à l'origine d'un amendement allant dans ce sens.

La Revue Pratique du Froid (La Rpf), 19 Octobre 2018, Par: Pierre LE MERCIER

La Rpf LA REVUE DES PROFESSIONNELLS DU FROID ET DE LA CLIMATISATION

Taxe HFC : rendez-vous fin 2020 pour voir si la filière respecte ses engagements

LE 19 OCTOBRE 2018

DÉCEMBRE 2020

TAXE ?

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Latin America and Caribbean

12. Brazilian Ministry and GIZ in partnership with technical schools provide training for more than 8.000 refrigeration technicians national wide

Training is crucial when servicing room air conditioning systems with the aim to reduce leakages of refrigerants and correct maintenance: Against this background, the Brazilian Ministry of Environment (MMA) together with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH have so far provided training for almost 1.300 refrigeration technicians countrywide. The so-called "Best Practice Course for Room Air Conditioning Systems" is offered under the HCFC Phase out Management Plans (HPMP) – coordinated by the MMA and implemented by GIZ. Trainings have already taken place in seven states (since 2017), and will reach other seven Brazilian regions over the next months.



Stage 2 (2016 to 2023) of the HPMP foresees the training of as many as 7.000 refrigeration technicians working on split and window type ACs or in the commercial sector and will hence contribute to the reduction of 39,9% of HCFCs until 2020, and 51,6% of HCFCs until 2021.

The courses strengthen the concept of recovery, recycling and reuse of HCFC-22 and thus prepare the sector for a reduced availability of HCFC-22 in the future. Furthermore, the training includes methods of leak detection, planned preventive maintenance activities, documentation of technical data and sealed system design practices. For technicians to improve their practical skills, the project provides adequate demonstration equipment and tools.

Additionally, so far over 80 instructors benefitted from one of the seven "Train the Trainer" workshops throughout Brazil. These were carried out by specialized consultants of GIZ providing all necessary information regarding methodology, training materials and equipment. The trained instructors from 14 different Brazilian are now responsible for the knowhow transfer of the best practice training courses to the service technicians.

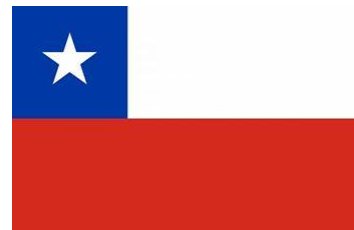
More information about the HPMP in Brazil, the best practice training courses, publications and other news about the project are available on the project [website](#) and the official [website](#) of the MMA.

Photo 1: Jefferson Costa - Photo of the training of trainers (for room air conditioners: split and window type) which happened in São Paulo, at SENAI, in November of 2017.

Photo 2: Tiago Zenero - Photo of the training of trainers (commercial refrigeration) that happened in Natal, at CTGAS-ER, in September of 2018.

Contact: [Nicole Annette Mueller](#), Proklima, OE G330 Climate Change, Environment, Infrastructure

13. Chile will publish a new ammonia standard once the Ministry of Health has approved it



At Chillventa, Seattle-based Highland Refrigeration's Sales Manager Patrick Fossey gave a presentation explaining how he worked with the Chilean chamber of International Institute of Ammonia Refrigeration (IAR) to develop an ammonia refrigeration standard for ammonia refrigeration for the South American country's ministry of health.

"Everybody in the [Chilean] industry is working together for safety," Fossey said at an event hosted by trade association Eurammon (of which he is a member, along with IAR) "The standard was given to the Ministry [...]; it's been sitting there for a year," he said.

Fossey, together with members of the Chilean IAR and the Chilean refrigeration and air-conditioning association (CCRHYC; 12% of which currently use ammonia) developed the standard.

The ministry had asked the CCRHYC to write it, given the association's experience developing a guide for ammonia installations in Chile.

"We started developing an ammonia manual based on IAR standards [in 2014] and guidelines but [halfway] through, we were approached by the ministry to develop a standard," Fossey said.

The whole Chilean industry was involved in the safety and installation guide for ammonia, from end users to manufacturers and contractors.

"We [also] have developed a new diploma for ammonia refrigeration in the University de Santiago, starting in March 2019," he added.

Ammonia21, 18 October 2018, By: Charlotte McLaughlin

14. US EPA proposal would relax HFC refrigerant restrictions



The U.S. Environmental Protection Agency has announced that it plans to roll back restrictions on the use of HFC replacement refrigerants that took effect in 2016.

Issued Sept. 18, the proposed rule, Protection of Stratospheric Ozone: Revisions to the Refrigerant Management Program's Extension to Substitutes, will revisit the Agency's recent approach to regulating appliances containing substitute refrigerants such as hydrofluorocarbons (HFCs) by proposing to rescind the November 18, 2016 extension of the leak repair provisions to appliances using substitute refrigerants.

There was a public comment period in mid-October for the new regulation, which would also rescind other provisions that were extended to substitute refrigerants. This proposal would not affect the requirements for ozone-depleting refrigerants, the agency maintains.

If finalized as proposed, the new rule would rescind the leak repair and maintenance requirements at 40 CFR 82.157 for substitute refrigerants. Therefore, appliances with 50 or more pounds of substitute refrigerants would not be subject to the following requirements:

- conduct leak rate calculations when a refrigerant is added to an appliance,
- repair an appliance that leaks above a threshold leak rate,
- conduct verification tests on repairs,
- conduct periodic leak inspections on appliances that exceed the threshold leak rate,
- report to EPA on chronically leaking appliances,
- retrofit or retire appliances that are not repaired, and
- maintain related records.

The EPA is also requesting comment on rescinding other provisions that were extended to substitute refrigerants, including things like certification of those purchasing or installing refrigerants, disposal and reclamation requirements, etc. [...]

Plumbing and HVAC, 15 October 2018

15. Climate change: Low cost, low energy cooling system shows promise



Researchers in the US have scaled up a new low-cost system that could provide efficient cooling for homes while using very little electricity.

The team has developed a roof-top sized array, built from a highly reflective material made from glass and polymers.

In tests, the system kept water around 10C cooler than the ambient air when exposed to midday sunlight in summer.

The approach could also be scaled up to cool power stations and data centres.

The system is based around what's termed a cooling meta-material, which is essentially an engineered film not found in nature.

Last year, researchers at CU Boulder in the US published research on the extraordinary properties of the new film, which reflects back almost all incoming light from the Sun.

But it also has another cooling trick that makes it quite special. If you use the film to cover water, it allows any heat in the liquid to escape into the air.

So when the heat escapes and is not replaced because the material deflects away sunlight, temperatures drop rapidly.

Now the scientists have improved the system and and built and tested a 13-sq-metre array of panels, that's small enough to fit on most rooftops.

"You could place these panels on the roof of a single-family home and satisfy its cooling requirements," said Dongliang Zhao, lead author of the study from CU Boulder's Department of Mechanical Engineering.



How effective is this material?

The system has been tested outdoors in a variety of weather conditions. In experiments carried out in the summer of 2017, the reflective system kept a container of water some 12C cooler than the surrounding air in the warmest hours of the day.

"We can now apply these materials on building rooftops, and even build large-scale water cooling systems with significant advantages over the conventional air-conditioning systems, which require high amounts of electricity to function," said Associate Professor Gang Tan, another author of the study from the University of Wyoming.

What makes it work?

The key material is made with glass microspheres embedded into a polymer film, with a thin silver coating.

At just 50 micrometres, it is slightly thicker than aluminium foil.

Another big advantage of the material is that it can be manufactured on rolls, making it easier to apply on residential and commercial applications.

What is it likely to be used for?

The authors say that one of the most effective uses of the new material would be to cool thermoelectric power generating plants. These installations use large amounts of water and electricity to maintain the operating temperatures of their machinery. Using the new material could make them more efficient.

How much cooling does the world need?

In 2016 around 10% of the world's energy use went to power air conditioning. The International Energy Agency says that this rate is set to triple by 2050, with air conditioning (AC) consuming as much electricity as is used in China today.

As well as all the CO₂ that is produced as electricity is created to power these devices, AC units also contain potent greenhouse gases in the form of hydrofluorocarbons.

HFCs were introduced to protect the ozone layer, because the previous generation of the cooling chemicals exacerbated the hole over Antarctica that had developed in the 1980s.

While HFCs are less damaging, they have a large global warming potential. In 2016, countries agreed that they would be phased out over the course of the next 15-20 years. If this happens successfully it could have a significant impact on limiting future temperature rises.

The [new study has been published](#) in the journal Joule.

BBC, 26 October 2018, By: Matt McGrath

West Asia

16. Kuwaiti environmental official calls for unifying GCC energy efficiency programs



A Kuwaiti environmental official called for the unification of energy efficiency programs in the GCC countries and testing programs to measure the efficiency of cooling and air conditioning systems to enhance environmental sustainability in the region and reduce climate change.

The representative of Kuwait's Environment Public Authority, Eng. Yaqoub Al-Ma'touq, stressed, in an interview with Kuwait News Agency on the sidelines of the fifth summit for sustainability, the need to look at the non-typical air conditioning and refrigeration systems and reduce dependence on traditional cooling systems through awareness programs for consumers and decision makers.

Al-Ma'touq, who is also the President of the Conference of the Parties to the Montreal Protocol on Substances that deplete the Ozone Layer and is involved in the air conditioning, cooling and insulation industries, noted the importance played by the GCC countries during the negotiations for the Kigali Amendments 2016 during which exemptions were extracted of restrictions on alternatives and available technologies due to the nature of climate in the GCC States.

He said that this peculiarity is that the GCC countries are among the states with very hot climates, adding that these exceptions allow the GCC states to build long-term sustainable strategies and stability in the commercial market of these industries.

On the goals of sustainable development, he said that the United Nations described these goals as integral, indivisible and interdependent, noting that the experience of the Montreal Protocol shows this fundamental interdependence as the aspects of implementation of the Protocol affect multiple objectives.

Kuwait News Agency (KUNA), 24 October 2018

Featured



OZONE SECRETARIAT

- 61st Meeting of the Implementation Committee under the Non-Compliance Procedure of the Montreal Protocol, Quito (Centro de Convenciones QUORUM, Cumbaya), Ecuador | 3rd Nov 2018
- Bureau Meeting of the Twenty-Ninth Meeting of the Parties to the Montreal Protocol, Quito (Centro de Convenciones QUORUM, Cumbaya), Ecuador | 4th Nov 2018
- 30th Meeting of the Parties to the Montreal Protocol, Quito (Centro de Convenciones QUORUM, Cumbaya), Ecuador | 5 - 9 Nov 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 the meeting portal and mobile app.

Read/download [OEWG40 Summary](#)
[OEWG-40 Daily coverage by IISD](#)

- Click [here](#) for Montreal Protocol upcoming Meetings Dates and Venues
-

The UN Environment Assessment Panels

The Assessment Panels have been vital components of ozone protection since the Montreal Protocol was first established. They support parties with scientific, technological and financial information in order to reach decisions about ozone layer protection and they play a critical role in ensuring the Protocol achieves its mandate.

The Assessment Panels were first agreed in 1988 to assess various direct and indirect impacts on the ozone layer. The original three panels are:

[The Technology and Economic Assessment Panel](#)

[The Scientific Assessment Panel](#)

[The Environmental Effects Assessment Panel](#)

In the past there were 4 main panels. The Panels for Technology and Economic Assessments were merged in 1990 into one Panel, now called the Technology and Economic Assessment Panel.

Why are the three current panels important to ozone layer protection? Each carries out assessment in its respective field. Every four years, the key findings of all panels are consolidated in a synthesis report.



THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL

- [Provisional agenda for the 82nd meeting of the Executive Committee](#)
- [Adjusted Prorated 2018-2020 business plan of the Multilateral Fund \(16 August 2018\)](#)
- [81st meeting of the Executive Committee](#), Montreal, Canada, 18 to 22 June 2018
- [Reports of projects demonstrating alternatives to HCFC technologies \(updated 81st meeting\)](#)

- [2018 Executive Committee Primer](#)

[Learn more](#)



OZONACTION

Find out about 2018 World Ozone Day Country Activities

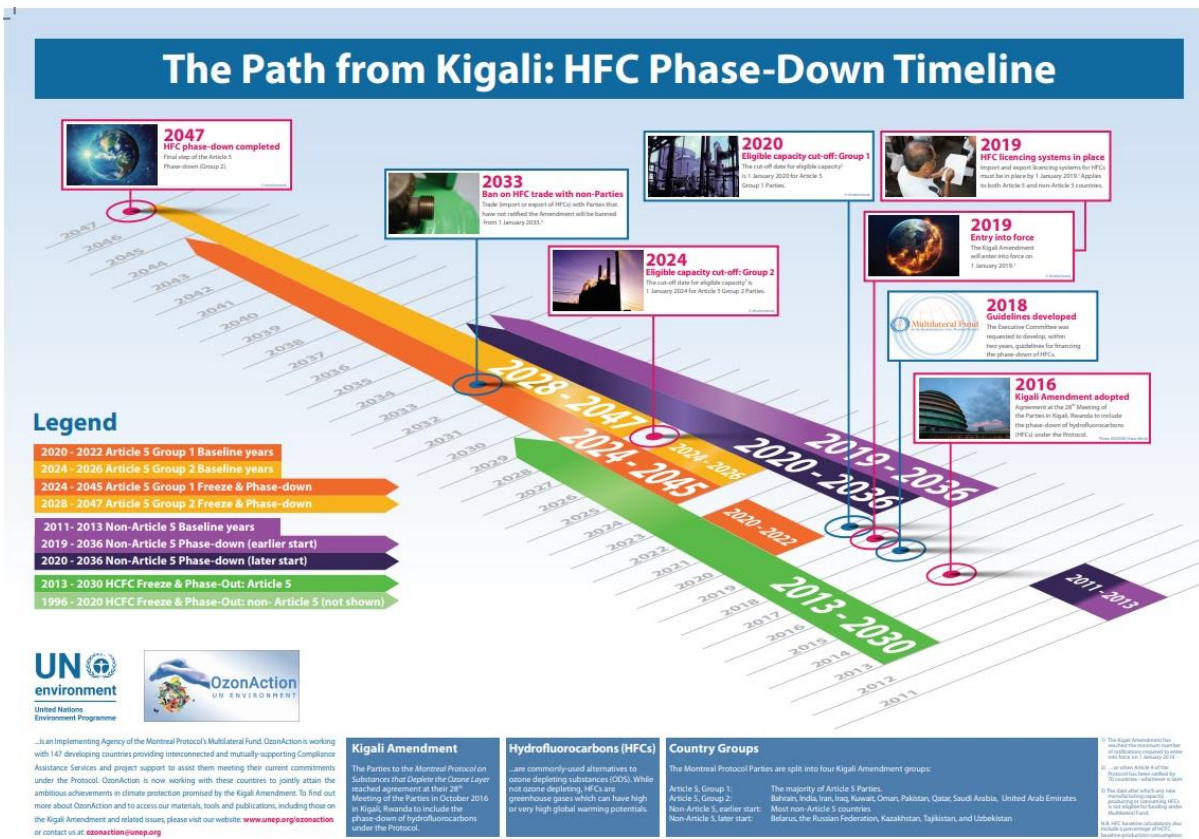


Ozone Day activities on 16 September - OzonAction is keen on highlighting your country's activities on the occasion of the 2018 World Ozone Day celebrations.

[Find out about 2018 World Ozone Day Country Activities.](#)

[Take this opportunity to share your innovative and inspiring events with the world!](#)

Please send us the related information/photos to this [email](#)



The Path from Kigali: HFC Phase-Down Timeline

This timeline, produced by OzonAction, highlights key hydrofluorocarbons (HFCs) phase-down dates.

Click [here](#) to download the timeline

RAC Videos

Download on the App Store

GET IT ON Google Play

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.



GWP-ODP Calculator Smartphone Application

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

The factsheets cover various topics related to the Montreal Protocol and the Kigali Amendment, including:

- The 28th Meeting of the Parties to the Montreal Protocol
- Opportunities and Challenges of the Kigali Amendment
- The Montreal Protocol for Ozone and the Climate Change Connection
- The Kigali Amendment to the Montreal Protocol: A New Phase Down
- The Kigali Amendment: A New Phase Down
- Update on New Refrigerants Designations and Safety Classifications
- Tools Commonly Used by Refrigeration and Air-Conditioning Technicians

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

OzonAction Series of [19 Fact Sheets](#) related to the Kigali Amendment.

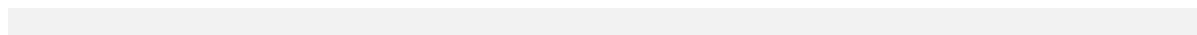
[HS codes for HCFCs and certain other Ozone Depleting Substances ODS](#) (post Kigali update).

[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 hydrofluoro-carbons (HFCs) continues the historic legacy of the Montreal Protocol. This factsheet summarises and highlights the main elements of the Amendment of particular interest to countries operating under Article 5 of the Protocol (Article 5 Parties).

[Refrigerant Blends: Calculating Global Warming Potentials](#) (post-Kigali update).

[Global Warming Potential \(GWP\) of Refrigerants: Why are Particular Values Used?](#) (post-Kigali update).

[Tools Commonly used by Refrigeration and Air-Conditioning Technicians.](#)



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)

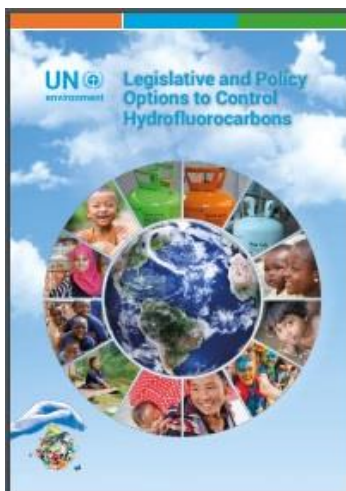


Publications



"The Dawn of a New Refrigeration Era - The Kigali Amendment for a Brighter Future" The New International Industria&Formazione Special Issue 2018-2019 will be launched Tuesday 16 October in Chillventa. The seventh edition of this renowned international publication, edited in cooperation among Centro Studi Galileo, United Nations Environment and the International Institute of Refrigeration after months of tight joint action, will be also presented in a world premiere at the 30th Meeting of the Parties to the Montreal Protocol (MOP-30), 5-9 November 2018, Quito, Ecuador.

Request your free copy ahead of the upcoming MOP-30 by filling out [this form](#)



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

- [Methyl Bromide Alternatives and Emissions Conference](#), 13-15 November 2018, Orlando, FL. USA
- [Healthcare ColDays](#), 15 November 2018, Lyon, France
- [ATMOsphere Europe 2018](#), 19-21 November 2018, Lago di Garda, Italy
- [Asia Cold Chain Show 2018](#), 28-30 November 2018, Bangkok, Thailand

2019

- **Call for abstracts - 15th Cryogenics 2019 Conference**, 7-11 April 2019, Prague, Czech Republic
- **8th Conference on Ammonia and CO₂ Refrigeration Technologies**, 11-13 April 2019, Ohrid, Macedonia (FYROM)
- **25th IIR International Congress of Refrigeration** - 24-30 August 2019, Montreal, Canada

Click [here](#) for more information / [International Institute of Refrigeration](#)

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.

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



Letter to the Editor

Refrigerants: There is still no vision for sustainable solutions

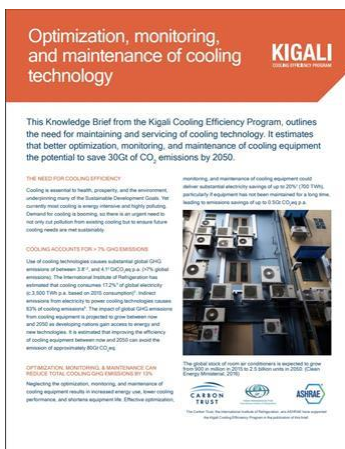
Risto Ciconkov

Refrigerants: There is still no vision for sustainable solutions

by Risto Ciconkov

Letter to the Editor, International Journal of Refrigeration

Abstract and highlights



“**Optimization, monitoring, and maintenance of cooling technology**” outlines the need for maintaining and servicing of cooling technology. It estimates that better optimization, monitoring, and maintenance of cooling equipment the potential to save 30Gt of CO₂ emissions by 2050.

Cooling as a Service (CaaS) **KIGALI**

This brief presents a new approach to cooling – Cooling as a Service. This approach can benefit companies, governments and society at large and is based on the servitization concept which is rapidly penetrating other marketplaces.

WHAT IS CaaS?
The standard business model of delivering cooling typically involves the manufacturer selling size and quality of equipment. Higher production volumes generally support more sales and more profit. As a result, manufacturers can lack a strong incentive to otherwise focus on maximizing the energy efficiency and performance of their products. Alternative business models are possible – and can promote much more energy and resource efficient technologies.

CaaS in its purest sense involves customers paying for the cooling they receive rather than the physical product or infrastructure that delivers the cooling. Examples of the CaaS model include direct cooling where customers do not own the cooling infrastructure, and pay per service (PPS) models, where technology providers install and maintain the cooling equipment, and receive costs through periodic payments made by the customer. These payments are fixed and payable for the cooling service delivered (for example, dollars per tonne of refrigeration or cubic metres of cooled air), and are based on actual usage. The payment is not dependent on the savings achieved with CaaS model but agreed in advance as a function of actual usage. This makes it easier and more transparent for the client, as broader service customers may otherwise view CaaS models as a form of CaaS as they also can involve a series of ongoing service agreements and associated upfront capital costs of cooling equipment.

WHY IS IT INTERESTING?
At the global scale, the anticipated explosion of demand for cooling in developing countries (due to population growth, and as infrastructure and planetary warming increase, will lead to rapid escalation of energy and resource use for cooling. The ICA projects that global annual energy use from space conditioning will reach 200 EJ by 2050. In the United States, under a business as usual (BAU) scenario (BAU 2050), there is an urgent need to reduce the energy intensity and carbon footprint from cooling, and to ensure efficient cooling systems are affordable to all those who need them.

CaaS models benefit customers through lower energy and maintenance costs, the absence of upfront capital commitments, reduced working capital, and a transparent and predictable pricing structure. The model effectively turns capital expenditure into operational expense for clients, freeing up capital for other investment priorities. The model also reduces the perceived technology risk for the clients, as they are not required to invest in the technology directly, and are not exposed to equipment failure.

CaaS goes beyond providing a design incentive to increase the competitiveness of their products, operating costs through innovation, helping companies split investment between manufacturing and sales. Some cooling technology providers already offering CaaS, its differentiable characteristics, in the marketplace and complete right-to-quality, efficient and low-cost cooling solutions.

CaaS can also increase the likelihood that cooling equipment is effectively repaired and maintained, lowering the risk of unplanned breakdowns and ensuring efficiency. Proper maintenance can deliver electricity savings up to 20% (IEA, 2016).



“Cooling as a Service (CaaS)” presents a new service approach to cooling, which can benefit companies, governments and society at large and is based on the servitization concept which is rapidly penetrating other marketplaces.

Life is On **Schneider Electric**

The Different Types of Cooling Compressors

White Paper 254

by Paul Lin
Victor Avellar

Executive summary
There is much confusion in the marketplace about different compressor types and their characteristics. In this paper, each of these compressors is defined, benefits and limitations are listed, and practical applications of each are discussed. With this information, an educated decision can be made as to most appropriate compressor for a given need.

“The Different Types of Cooling Compressors”, A new free-to-download white paper launched by Schneider Electric.

Introduction: There is much confusion in the marketplace about different compressor types and their characteristics. In this paper, each of these compressors is defined, benefits and limitations are listed, and practical applications of each are discussed.

With this information, an educated decision can be made as to most appropriate compressor for a given need.

Conclusion: Various compressor types are appropriate for different uses, and no single compressor type is ideal for all applications. The intent of this paper is to contrast the benefits and limitations of the various compressor

types on the market today.

Significant differences in compressor designs offer theoretical and practical benefits for different purposes. Nevertheless, the compressor is just one of four basic components of an air conditioner. The compressor type, cooling system configuration (e.g. condenser, evaporator), control, etc. will determine the ultimate performance achieved in a particular application.

For more information on the types of cooling systems, see *White Paper 59, The Different Technologies for Cooling Data Centers.*

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 -

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

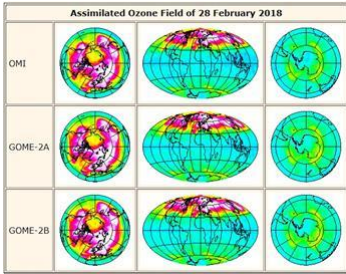
- Immediate and permanent access to the latest research and to IJR archive
- Access the latest articles as soon as they become available online.
- Browse, search and read each one of the nearly 4,500 papers since Volume 1, Issue 1.

- Unlimited access to seminal contributions to the field of refrigeration dating back to 1978.
 - Keep up-to-date with subscriptions to customized e-alerts on New Volumes, Topics and saved Searches.
- Enhanced content and functions
- Easily export references, citations and abstracts.
 - Print, download or share articles with colleagues or peers.
 - See which papers, published in Elsevier or elsewhere, have cited any selected article.
 - Consult the research highlights overview of articles in volumes from 2012 onwards.

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



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.



The International Institute of Refrigeration supports World Refrigeration Day - As the only independent intergovernmental organisation in the field of refrigeration, the International Institute of Refrigeration (IIR) joins associations and companies worldwide to support the initiative of an official World

Refrigeration Day on 26 June every year. The annual World Refrigeration Day, to be launched on 26 June 2019, aims to raise awareness among the wider public about the importance of refrigeration technologies in everyday life.

Refrigeration is essentially a question of temperature and, as such, it only seems natural to celebrate the field on the birthday of the pioneer at the origin of the international unit of temperature, Lord Kelvin (Sir William Thomson) – born 26 June 1824.

With increasing global stakes at hand, over the past years refrigeration has come to take a leading role at the heart of international affairs.

The inauguration of a World Refrigeration Day would not only be an ideal way to recognise the many historical achievements of the industry, but also a means to anticipate and overcome together the challenges we face. ... Click [here](#) for more information.

Current and previous OzoNews Issues, are available from
OzonAction website

Download a [PDF](#)



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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

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