

OZONNEWS

15 – 30 July 2014

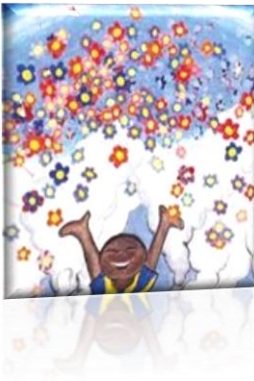
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A fortnightly electronic news update on ozone and climate protection and the implementation of the Montreal Protocol



“Ozone Layer Protection: The Mission Goes On” is the theme for 2014 International Day for the Preservation of the Ozone Layer.

The Ozone Secretariat invites all Parties to the Montreal Protocol to celebrate Ozone Day on 16 September... [▶ Read more](#)



Invitation to join the upcoming OzonAction webinar on:
“How the Montreal Protocol is Leading the Way to Ozone and Climate Protection”

Description: We all agree that the Montreal Protocol is a success, what does that really mean - a success for ozone, but what about for climate? Has Montreal done enough, could it do more? Is this successful treaty still ambitious? ...

Prof. Durwood Zaelke, Founder and President of the Institute for Governance & Sustainable Development (IGSD) will answer these questions and more!

Date: Thursday, 31 July 2014 | Time: 2:30 PM - 3:30 PM (CEST)

Other time zones: [Bangkok 07:30 PM | Manama 03:30 PM | Nairobi 03:30 PM | Panama 07:30 AM | check other/your time zone:
<http://easyclock.appspot.com/>]

 **Register now!**

After registering, you will receive a confirmation email containing information about joining the webinar.

[▶ View System Requirements](#)

UNEP DTIE OzonAction Branch is offering this forum to promote ozone layer protection through the use of modern electronic communication technologies, and to increase global online learning and knowledge sharing, as part of its clearinghouse mandate under the Multilateral Fund for the Montreal Protocol Implementation.

Note: The information above is available from the OzonAction website @ <http://bit.ly/1naMJ4j>

~°~°~ **Feel free to share the invitation with anyone who might be interested** ~°~°~



GLOBAL

1. 34th Open-ended Working Group of the Parties to the Montreal Protocol



Montreal Protocol Parties Discussed Various Issues Related to the Protection of the Ozone Layer (Paris/Nairobi, 21 July 2014). The 197 Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer discussed various issues regarding the protection of the earth's fragile ozone layer, during the 34th Meeting of the Open-Ended Working Group (OEWG 34) of the Parties, conducted from 14 to 18 July in Paris, France.

The Parties considered the appropriate funding requirement for the replenishment of the Multilateral Fund for the Implementation of the Montreal Protocol for the 2015 – 17 triennium. Since 1991, the Fund has provided over US\$3 billion to support developing countries to phase out ozone-depleting substances (ODSs).

The Parties developed draft decisions on several issues, including on exemptions for various uses of ODSs: an extension of the global exemption for certain laboratory and analytical uses; a nomination for an essential-use exemption for chlorofluorocarbon-113 for aerospace applications in the Russian Federation; and an exemption for using carbon tetrachloride in testing water quality in China. The Parties also developed draft decisions on the import and export of used halons for civil aviation, monitoring trade in hydrochlorofluorocarbons (HCFCs) and their substitutes, and emissions.

OEWG 34 also discussed alternatives to ozone-depleting substances in various sectors, current and future demand for those alternatives, their economic costs and implications, as well as the environmental benefits of avoiding alternatives to ODSs with high-global warming potential. The Parties sought from the Scientific Assessment Panel of the Montreal Protocol Parties information on four newly detected ODSs that are small but increasing in concentration in the atmosphere.

For the fifth consecutive year, the Parties also discussed proposed amendments to the Montreal Protocol to phase down hydrofluorocarbons (HFCs), which are not ozone-depleting substances, but are global-warming gases.

The proposed amendments and other issues discussed at OEWG 34 will be considered further at the 26th Meeting of the Parties to the Montreal Protocol (MOP 26), which takes decisions. MOP 26 will be held jointly with the 10th Meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer from 17 to 21 November 2014.

Interesting side events also occurred, focused on various issues related to ozone protection, including the progress achieved in phasing out methyl bromide for controlled uses in developing countries, the role of international standards in refrigeration and air-conditioning in the context of HCFC phase-out in developing countries, and the applications of natural refrigerant solutions in developed and developing countries.

OEWG 34 was preceded by a workshop on the management of HFCs, held on 11 and 12 July. The workshop involved independent facilitators and sessions on financial, legal, technical, policy and technology transfer issues associated with managing HFCs. It included expert panelists to provide an opportunity for focused and in-depth discussions to bring out the key concerns of all stakeholders, including industry associations from various regions. It was attended by more than 300 participants.

▶ Learn more: [UNEP Ozone Secretariat](#)

OEWG 34 - A Brief Analysis - Provided by IISD Reporting Services

At the 34th meeting of the Open-Ended Working Group to the Montreal Protocol, discussions of HFCs once again proved to be the most contentious item on the agenda. Many delegates had attended the Workshop on HFC Management held just prior to the meeting, which had concluded on an upbeat note after two days of constructive discussion and debate on a wide range of concerns, including finance, technology transfer and legalities. Participants hailed the discussions on these complex issues as a success, and several expressed hope that the constructive workshop would set the tone for OEWG 34. Many were disappointed, therefore, when

discussions in the OEWG quickly became contentious, with extensive debate on seemingly minor issues such as the adoption of the agenda for the meeting.

Over the course of the five-day meeting, participants tackled a number of issues, including, among others: the TEAP report on ODS alternatives; the TEAP study on the Multilateral Fund replenishment for 2015-2017; and the amendment proposal on the management of HFCs. While delegates anticipated difficult discussions of these complex issues, many said they had not anticipated the stalemates that ultimately developed. Several identified a marked change in the atmosphere of OEWG 34 and expressed concern about the impact of the discussions on the future work of the Montreal Protocol, including at the upcoming 26th Meeting of the Parties, scheduled for November 2014.

This analysis assesses the key issues at OEWG 34, the outcomes of the discussions and how these are likely to affect the future work of the parties to the Montreal Protocol.

HFC AMENDMENTS

As in recent years, the proposals to amend the Montreal Protocol to address HFCs were again a source of heated debate. The two-day HFC management workshop, which arose from a decision taken at MOP 25, gave many delegates hope that discussions on the amendments could move out of the “informal discussion groups” and into a formal contact group. However, several participants expressed strong opposition to such a move, and once again a decision was taken to address HFCs in the context of an informal discussion.

Reasons for opposition focused largely on a lack of suitable alternatives in high ambient temperature conditions, and concerns on the legality of the Montreal Protocol addressing a substance that, although it is not an ODS, is still in widespread use as a result of the Montreal Protocol’s decision to ban HCFCs. As many workshop participants noted, there is no legal obstacle to addressing HFCs under the auspices of the Montreal Protocol, but legal “wrinkles” will still have to be addressed. To wit, Article 2 of the Vienna Convention mandates parties to address the adverse effects of efforts to protect the ozone layer, which Article 1 defines as including the effects on the climate system. This clause, along with the Protocol’s well-functioning institutions and extensive experience with the same sectors that an HFC phase-down will impact, would indicate, according to one experienced delegate, that the Protocol is the right institution to be managing HFCs.

Delegates also pointed to a proposal from the EU to the UNFCCC that was submitted in 2013 calling for parties to the UNFCCC to recognize the Montreal Protocol as the “correct” institution to address HFCs management. However, this proposal has received little attention. In general, little action on HFCs has occurred under the UNFCCC, a situation which, according to some, is due to the wide variety of issues the UNFCCC has to address.

Noting that opposition to discussion of the proposed amendments seems to have increased this year, some delegates suggested the more vociferous objections could be a reaction to a sense of growing acceptance among the wider community of the need to phase down HFCs. Several delegates, including both opponents to and supporters of the amendments, privately noted signs of growing support for eventual adoption of the proposed amendments on HFCs. One said “it is now more a question of ‘when’ than ‘if,’ as well as a question of what the amendments will contain in the end.” Several delegates pointed to an increasing number of national and regional action on HFCs, including the commitment by the Group of 20 to decrease HFC consumption and the new F-gas regulation in the EU, as signs of momentum in that direction.

Other delegates suggested that opposition might be related to the ongoing negotiations in the climate process, rather than to the Montreal Protocol itself. Some delegates explained that by addressing HFCs only within the UNFCCC process, the UNFCCC “basket of gases” approach could be used to act on greenhouse gases other than HFCs, leaving these chemicals untouched. Still others suggested that some parties may wish to ensure that nothing happens in the context of the Montreal Protocol that could influence, in any fashion, the negotiations toward a climate agreement at the twenty-first meeting of the Conference of the Parties to the UNFCCC in Paris in 2015.

MLF REPLENISHMENT

Finance is another pressing issue for the Montreal Protocol. At MOP 26, parties will have to address the replenishment of the MLF for the next triennium. This is a key issue for work on HFCs, as Article 5 parties cite lack of funding for implementation as another concern associated with potential efforts to phase out HFCs under the Protocol. Notably, both the FSM and North American HFC amendment proposals allow for MLF funding of efforts to phase down HFCs. Recognizing the importance of finance for both political will and effective implementation of parties’ obligations, some delegates asserted that successful discussions on the MLF replenishment would help “send the right signals” about funding for an HFC phase-down.

At MOP 25, parties charged the TEAP with preparing a report for the consideration of parties to decide on an appropriate level of funding. The report also contains a separate element estimating the additional resources needed to support Article 5 parties in gradually avoiding high global warming potential (GWP) alternatives to ODS. The report indicated that the current estimation is US\$23 million per year over two triennia, in addition to the other funding requirements under the MLF. By establishing an estimate of the additional funding required, donor countries could begin discussions in their capitals to secure the funding needed. This could also provide a solid starting point for discussions on finance; a key issue for many Article 5 countries. Although providing funding to avoid high-GWP alternatives could place non-Article 5 countries under additional pressure, many donor countries have already realized this and acknowledged during this OEWG meeting that there will be a need to commit these additional funds for HFC phase-out should the amendments ever be accepted. However, since no formal discussions have taken place, questions regarding specificities have not been asked, let alone answered. Some parties have indicated that while they are not opposed to the amendments, they will need specifics on funding and technology transfer before they commit. This is something that is likely to be achieved in a formal, on the record, discussion.

Despite this, some countries argue that no matter what, there will still be insufficient low-GWP alternatives for high-ambient temperatures for all applications, given the technical challenges in finding and developing low-GWP alternatives for these conditions that are safe, efficient, efficacious and affordable. Amendment advocates counter that Article 5 countries with high ambient temperatures would not be forced to act when viable alternatives do not exist for a given sector or application, and past MP experience suggests that once countries signal the marketplace by placing a chemical on the Protocol's control schedules, industry responds by accelerating research and development of alternatives to the controlled substance for all relevant applications. This was a point echoed by industry representatives at the Workshop on HFC Management.

Having overcome the hurdle of whether or not to discuss the proposed HFC amendments at all, proceedings were nearly derailed again by disagreement within the contact group on the mandate for TEAP to carry out additional analyses on the MLF replenishment during the intersessional period. Part of the contention involved an attempt by one delegation to reopen a portion of the group's text that they had agreed to the day before. Stunned participants, unaccustomed to such tactics within the OEWG, refused to reopen the text and warned that ignoring normal rules of procedure, and the Chair's clear instructions on how the contact group would perform its task, could seriously damage faith in MP processes. When the dispute was taken to the plenary, only last-minute reminders of the Protocol's history of cooperation and inclusion led to an agreement.

Some observers from donor countries also noted that the opposition to adding their data requests to the TEAP's supplemental report, for example on the environmental benefits of supporting low-GWP alternatives, will make it more difficult for environment ministries to persuade their finance ministries and legislatures to approve any additional funding. A few delegates were heard commenting later that if this is what a discussion on a report's terms of reference leads to, then what is going to happen at the MOP where the actual funding level will be decided.

The Montreal Protocol has a long history of cooperation and decision-making based on consensus. It is also one of the few fora that has habitually allowed the full and open participation of non-governmental organizations. Some of the tactics used to prevent constructive debate are not familiar to the forum, took many by surprise and had many wondering what lay ahead at MOP 26. Many also wondered if perhaps alternate ways to reach agreements need to be explored, in order to avoid such circumstances in the future.

ONE STEP FORWARD, TWO STEPS BACK?

The question of the HFC amendments was, as expected, contentious. What was not expected was the extent of the disagreements, which seemed to leave many questioning whether the workshop had contributed to any progress on furthering discussion of the amendments, as was intended by MOP 25. One veteran delegate expressed disappointment with the outcomes of the meeting, saying that by the close of OEWG, the work on this issue could have "actually regressed."

Despite the past successes of the Montreal Protocol, work remains to be done, as Executive Secretary Tina Birmpili emphasized in her opening remarks to OEWG 34. Just as important as forward momentum on these contentious issues, some veterans contend, is recognizing where past decisions have had unfortunate unintended consequences. The exponential growth in use of HFCs is the prime example of this problem; although HFCs are not ODS, their development and growth was spurred by the accelerated phase-out of HCFCs under the Protocol. More than one of the OEWG delegates declared, on and off the record, "this is the mess we made; it is up to us to clean it up." Another delegate called for parties to learn their lessons and move forward, saying "Our destiny may be determined by the will of the wind, but we as human beings have the

ability to adjust our sails...” The question on many minds is how best to find the path forward and, at MOP 26, avoid the ruts in the road that became so visible during OEWG 34.

▶ [Daily reporting services](#) from IISD / Linkages Updates

Briefing Note on the Workshop on HFC Management

The Workshop on Hydrofluorocarbon (HFC) Management 11-12 July 2014 in Paris, France, was convened in response to discussions held at the twenty-fifth Meeting of the Parties (MOP 25) to the Montreal Protocol on Substances that Deplete the Ozone Layer. The sessions addressed four topics related to HFC management, namely: technical aspects; legal aspects; finance and technology transfer; and policies and measures.

Over 300 participants from governments, UN agencies, non-governmental organizations, academia and industry attended the workshop, which was convened to provide an opportunity for focused and in-depth discussions on key issues related to HFC management.

This [briefing note](#) summarizes the discussions that took place and is organized according to the agenda.

The Workshop on Hydrofluorocarbon (HFC) Management opened on Friday, 11 July 2014, with a keynote presentation by Ibrahim Thiaw, Deputy Executive Director, UNEP, about the opportunity to maximize both climate and ozone benefits, followed by brief presentations by A.R. Ravishankara and Paul Newman, Co-Chairs of the Scientific Assessment Panel, on the effect of current and projected HCFC and HFC emissions on ozone depletion and climate change, Lambert Kuijpers, Co-Chair of the Technology and Economic Assessment Panel (TEAP) on the current production data on HFCs and estimates of current consumption, and Janet Bornman, Co-Chair, Environmental Effects Assessment Panel (EEAP) on the effect of HFCs and HCFCs on the biosphere.

The rest of the workshop was divided into four topical sessions, each opened by short presentations by invited speakers on aspects of the session's focus, followed by reactions and discussion by a resource panel and audience members, including inputs from an online board for posting questions. Session 1: Technical Aspects, and Session 2: Legal Aspects, were held on Friday. Session 3: Finance and Technology Transfer, and Session 4: Policies and Measures for HFC Management, were held on Saturday, 12 July.

In a Saturday afternoon closing session, the rapporteurs of the four sessions reported on key takeaway messages from their sessions that will be included in the report to Montreal Protocol's Open-Ended Working Group (OEWG) next week.

Tina Birmbili, Executive Secretary, Ozone Secretariat, closed the workshop at 6:01 pm.

▶ [Daily Reporting Services](#) from IISD

2. CCAC Highlights Win-Wins in Reducing Short-Lived Climate Pollutants



24 June 2014: The Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC) has released a graphic publication highlighting that a rapid uptake of recently-identified near-term 'win-win' measures targeting emissions from short-lived climate pollutants (SLCP) bears potential to quickly improve human well-being, with multiple benefits.

Such measures range from implementing energy-to-waste solutions, eliminating high-emitting vehicles, to avoiding hydrofluorocarbon (HFC) use by phasing in new technologies in industry.

The publication, titled 'Time to Act to Reduce Short-Lived Climate Pollutants,' presents latest scientific findings on SLCPs in non-technical language and with infographics. It highlights the relevance of SLCPs to near term climate change, and stresses that identified 'win-win' measures, which are cost-effective and readily available, could deliver multiple benefits for climate protection, public health, and food and energy security. In addition to a recommendation to phase down the production and consumption of HFCs, the publication presents 16 black carbon and methane control measures targeting primary SLCP-emitting sectors, including fossil fuel production and distribution, energy use in the residential, transport and industry sectors, waste management and agriculture.

CCAC highlights that likely benefits of large-scale implementation of measures to target SLCP emissions by 2030 include: prevention of 2.4 million premature deaths per year resulting from outdoor pollution; avoidance of crop yield losses representing an increase of up to 4% in total global annual production; and slowing down of global warming expected by 2050 by around 0.5°C.

The publication was launched at the UN Environment Assembly (UNEA) in Nairobi, Kenya, and builds on, inter alia, the UNEP Synthesis Report from 2011 titled 'Near-Term Climate Protection and Clean Air Benefits: Actions for Controlling Short-Lived Climate Pollutants.' The graphic publication is intended as an information and communication resource for governments, non-governmental organizations (NGOs) and other public and private organizations.

CCAC is a voluntary partnership of governments, intergovernmental organizations, private sector and environmental community representatives, and other civil society members. It focuses on addressing SLCPs, including methane, black carbon and HFCs, through awareness-raising, support to new national and regional actions, promotion of best practices, and improving scientific understanding of SLCPs. The CCAC secretariat is hosted at UNEP.

- ▶ [\[UNEP Press Release\]](#) [Publication: [Time to Act to Reduce Short-Lived Climate Pollutants](#)] [[IISD-RS Coverage of the CCAC Side Event on SLCPs](#)] [[IISD RS Coverage of the UN Environment Assembly](#)] [[CCAC Website](#)] [Publication: [Near-term Climate Protection and Clean Air Benefits](#)]

3. Depleting Ozone May Lead to Increased Ultraviolet Radiation on Earth



Picture: The Laguna Verde (Green Lagoon) at the foot of the Licancabur volcano in the Bolivian Andes. (Photo : Flickr)

A team of US and German researchers has measured the highest level of ultraviolet radiation ever recorded on Earth's surface - in the Bolivian Andes - and their study indicates that depleting ozone may be what caused such harmful radiation levels.

Only 1,500 miles from the equator, the Bolivian Andes boasted levels far above those normally considered to be harmful to both terrestrial and aquatic life. Using the European Light Dosimeter Network (Eldonet), researchers came to the surprising realization that South America, of all places, demonstrated record ultraviolet (UV) fluxes in the summer of 2003 and 2004.

"These record-setting levels were not measured in Antarctica, where ozone holes have been a recurring problem for decades," lead author Nathalie A. Cabrol of the SETI Institute and NASA Ames Research Center said in a statement. "This is in the tropics, in an area where there are small towns and villages."

The measurements were taken as Cabrol's team was investigating high altitude Andean lakes as part of an astrobiology study of Mars-like environments. The combination of midday sun and high elevation of these Bolivian mountains - some 20,000 feet above sea level - produced higher irradiance levels because of naturally low ozone in such locations.

"A UV index of 11 is considered extreme, and has reached up to 26 in nearby locations in recent years," Cabrol noted. "But on December 29, 2003, we measured an index of 43. You simply do not want to be outside when the index reaches 30 or 40."

For comparison, if you are on a US beach in the summer, you may experience an index of 8 or 9.

Researchers speculate that this increased UV flux may have been caused by ozone depletion - a result of increased aerosols from both seasonal storms and fires in the area. Also, a large solar flare occurred just two weeks before the highest UV fluxes were registered. While the evidence linking the solar event to the record-breaking radiation is only circumstantial, particles from such flares are known to affect atmospheric chemistry and may have increased ozone depletion.

"While these events are not directly tied to climate change, they are sentinels of what could occur if ozone thins globally," Cabrol explained. "The thinner and more unstable the ozone, the more prone we will be to this kind of event."

Cabrol and his colleagues, who published their study in the journal *Frontiers in Environmental Science*, believe that ozone levels should be more closely monitored, as this sort of event could happen again, "because the factors that caused it are not rare," he said.

► [Nature World News](#), 8 July 2014, By Jenna Iacurci

4. F-gas: a Blueprint for Developing Countries



Marco Buoni instructs during the practical exam with Rwandese technicians

BRUSSELS: Contractors' association AREA is using its F-gas regulation knowledge and experience to advise emerging and developing economies with refrigerant handling and certification.

AREA vice-president Marco Buoni has recently been involved in United Nations Environment Programme events in Suriname, Rwanda and Sri Lanka to explain and discuss the European F-gas regulations with particular reference to training and certification. Earlier this month, Marco Buoni was invited to attend a UNEP workshop for the establishment and operation of certification schemes and regional and national refrigeration and air conditioning associations in Kigali, Rwanda. In the one-day session, 14 technicians participated in the theoretical F-gas test. Two of the technicians failed this part of the assessment, scoring less than the 60% of correct answers required.

The 12 technicians who passed the initial theory test then participated in the practical exam, requiring them to be able to correctly undertake refrigerant recovery, vacuum, charge, leak detections, temperature and pressure evaluation.

According to Marco Buoni, the technicians, who were selected from the most skilled technicians across the African continent, were very well trained and demonstrated a high level of knowledge to prevent refrigerant emissions.

The practical session was held in the University Polytechnic IPRC in Kigali where a laboratory is completely dedicated to air conditioning and refrigeration. The equipment was reported to be of a high standard, with multiple examples of recovery machines, leak detectors, vacuum pumps and tools. The material was made available by UNEP.

The practical side was failed by only one technician who was unable to demonstrate to the assessor his ability to carry out the essential operation of recovery and vacuum of the system.

At the end of the three-day workshop (during which the Minister of the Environment and Energy of Rwanda was present) the candidates who were expert technicians from various countries in Africa, and the 28 Ozone Officers who attended from Anglophone African countries, have all expressed the desire to implement the European certification scheme and adapt it to their national requirements. They believe that training without certification is less effective.

During the last week of April, a video conference was held with Suriname for the Caribbean regional workshop. In that workshop, three speeches led to discussions about new F-gas regulation in Europe, certification and training schemes for handling refrigerants and the step-by-step creation and strengthening of National Associations.

At the end of May AREA was involved in a similar UNEP workshop held in Sri Lanka and targeting Asian countries.

AREA has also received further invitations to exchange knowledge with Arabic and Balkan countries about certification schemes for handling refrigerants in these regions. Under AREA's influence a number of recommendations were made as to training, certification and the formation of associations.

Countries which have not yet done so were advised to consider establishing and implementing national certification systems for refrigeration technicians that are able to address the needs for handling and the safe use of all types of refrigerants. Countries were also requested to ensure that training and certification programmes addressed low-GWP alternatives.

Countries were encouraged to establish or strengthen national refrigeration associations that are able to support and sustain the HCFC Phase out Management Plan.



Theoretical exam to obtain the EU certification for handling refrigerants

► [CoolingPost](#), 23 June 2014

5. Global Blowing Agents (HCFCs, HFCs, HCs, & Others) Market - Forecasts to 2019



The growth in the global polymer foam industry is driving the demand in blowing agents market. Additionally, major suppliers are responding towards the phase-out of CFC's and HCFC's by providing a wide variety of alternative blowing agents and maintaining their supply globally. The major polymeric foam industry utilizing practically all types of blowing agents is the polyurethane foams industry.

The blowing agents market has great growth potential. The market is expected to grow at a compound annual growth rate of 5.8%, over the next five years and reach 452 kilotons by 2019. Asia-Pacific, with its thriving economies and rapidly expanding manufacturing bases, is expected to experience highest consumption during the next five years.

The growing demand for polyurethane foams and high growth in the Asia-Pacific region is expected to remain the driving force for blowing agents demand in the long run. However, the frequent change in Montreal Protocol and Kyoto Protocol with respect to choice in blowing agents is restraining the market growth. The use of traditional blowing agents such as HCFCs and HFCs is leading to ozone depletion and global warming, so its use is being restricted. So the demand for Zero ODP and Low GWP blowing agents is emerging in the global market.

This report studies and forecasts the blowing agents market till 2019. The market has been segmented on the basis of product types where major product types such as HCFCs (HCFC-141b, HCFC-142b, HCFC-22, & others), HFCs (HFC-245fa, HFC-134a, HFC-365mfc/227ea, HFC-152a, & others), HCs (n-Pentane, Cyclopentane, Isopentane, n-butane, Isobutane, & others), and Others (HFO's, Inert Gases, Methyl Formate, Methylal, & others) have been discussed in detail and a comprehensive view and forecast is provided for each category with the market volumes and revenues

The market is also segmented on the basis of major foams type utilizing these blowing agents that includes Polyurethane (Rigid & Flexible) foam, Polystyrene (EPS & XPS) foam, Phenolic foam, Polyolefin (PP & PE) foam, and Others. The market is further segmented and forecasted for the major geographic regions such as: North America, West Europe, Asia-Pacific, and ROW including key growth countries of that region. Major countries with the volumes and revenues are covered for each of the region. Market estimations have been provided in terms of consumption volume (kilotons) and market revenue (\$Millions). The global as well as regional markets have been segmented by blowing agents types such as HCFCs, HFCs, HCs and Others.

▶ [Research and Markets](#), 3 July 2014



ASIA PACIFIC

6. Consumption of Ozone Depleting Substance Down by 10 Percent



A multipronged approach is needed to meet the challenge of zero emission by 2025

Consumption of ozone depleting substance (ODS), hydrochlorofluorocarbons (HCFC), has been reduced by 10 percent, national environment commission (NEC) officials say.

Bhutan is obligated to phase out some ODS, as required by the Montreal protocol, a treaty that addressed the depletion of ozone layer in the atmosphere, the consequences of which would lead to serious health and environmental damages. Some of the major users of ODS, NEC officials said, are servicing workshops, equipment importers, hotels, industries and larger institutes.

Through the HCFC phase out management plan (HPMP), Bhutan has committed to phase out HCFCs by January 1, 2025 and progress towards zero consumption. NEC's national ozone officer, Peldon Tshering, said, to achieve the targets, three approaches are carried out.

“We’ll limit the supply of HCFCs by restricting imports through import quotas, controlling sales of HCFC appliances, and through information exchange and advocacy programs,” she said. “We’ll also reduce the demand of HCFCs for servicing existing equipment and limiting new demands of HCFCs.”

To reduce demand of HCFCs for servicing equipment, a two-year course on refrigeration and air-conditioning (RAC) will be put in place to introduce the course as a part of green skills, and to reduce ozone-depleting substances as a part of the phasing out of HCFCs and CFCs.

The purpose of the course, which is to be implemented by the labour ministry, is also to train adequate number of manpower in RAC repairing and servicing for sustainable human resource capacity in the long run. It is also expected to enhance employability of youth in the labour market.

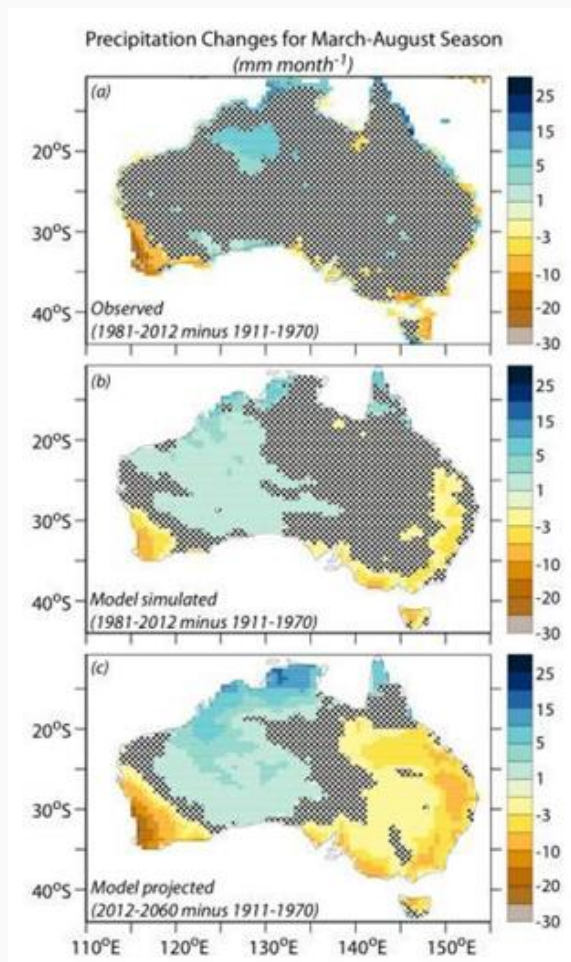
The RAC curriculum module includes fundamentals of RAC, service domestic refrigeration system, installing and servicing mobile air conditioning and carrying out tools and equipment, among others. “The institute for implementing the course would either be the technical training institute in Samthang, Khuruthang or Thimphu,” Peldon Tshering said, adding that lack of technical capacity was a challenge.

“The biggest challenge is the availability of substitutes in the market, there are substitutes, but the price always plays a major role, given that a consumer who goes to buy the equipment will always choose the cheapest one,” she said. “For the long run, it’s more sustainable to have a non-ODS equipment, but the upfront cost may be 10 to 15 percent higher.”

“Secondly, it’s a highly technical sector, where we’re talking about HCFC gas, which has a huge range, so for the customs and enforcement officers, to differentiate between an ODS and non-ODS appliances is very difficult,” Peldon Tshering said. “We still need to have trainings and capacity building activities and create awareness on removing HCFCs.”

► [KuenselOnline](#), 28 June 2014, By Sonam Choden

7. Computer Models Says Australia Drying Due To Ozone Depletion, Greenhouse Gases



A new climate model says that southwestern Australia's long-term decline in fall and winter rainfall is caused by increases in man-made greenhouse gas emissions and ozone depletion.

NOAA researchers conducted several climate simulations using their global climate model to study long-term changes in rainfall in various regions across the globe. One of the most striking signals of change emerged over Australia, where a long-term decline in fall and winter rainfall has been observed over parts of southern Australia.

Simulating natural and man-made climate drivers, scientists showed that the decline in rainfall is primarily a response to man-made increases in greenhouse gases as well as a thinning of the ozone caused by man-made aerosol emissions. Several natural causes were tested with the model, including volcano eruptions and changes in the sun's radiation. But none of these natural climate drivers reproduced the long-term observed drying, indicating this trend is due to human activity.

The agreement between observed and model simulated rainfall changes supports the idea that human activity contributed to the drying of southwestern Australia and that the drying will increase in the 21st century. Changes in fall-winter rainfall from observations (top panel) as compared to model simulation of the past century (middle panel), and a model projection of the middle of the 21st century. Graphic by NOAA's Geophysical Fluid Dynamics Laboratory.

"This new high-resolution climate model is able to simulate regional-scale precipitation with considerably improved accuracy compared to previous generation models," said Tom Delworth, a research scientist at

NOAA's Geophysical Fluid Dynamics Laboratory in Princeton, N.J., who helped develop the new model and is co-author of the paper. "This model is a major step forward in our effort to improve the prediction of regional climate change, particularly involving water resources."

Southern Australia's decline in rainfall began around 1970 and has increased over the last four decades. The model projects a continued decline in winter rainfall throughout the rest of the 21st century, with significant implications for regional water resources. The drying is most severe over southwest Australia where the model forecasts a 40 percent decline in average rainfall by the late 21st century.

"Predicting potential future changes in water resources, including drought, are an immense societal challenge," said Delworth. "This new climate model will help us more accurately and quickly provide resource planners with environmental intelligence at the regional level. The study of Australian drought helps to validate this new model, and thus builds confidence in this model for ongoing studies of North American drought."

▶ [NOAA Headquarters](#), quoting "Nature Geoscience", 13 July 2014



EUROPE AND CENTRAL ASIA

8. Ice Rinks on Firm Ground with Ammonia



Ice rink operators, one of the largest users of R22, have been particularly hard hit by the phase out of HCFCs in Europe. With servicing of R22 equipment banned from January 1 next year, an alternative solution is essential if the rinks are to remain open.

For many plant replacement is the best, if costliest, long-term solution with many opting for low-charge ammonia systems.

Live Active Leisure (LAL) which operates 15 leisure venues throughout Perth and Kinross and provides a range of sport and leisure services for the local community called on Johnson Controls to offer a solution for its state-of-the-art curling ice rink at Dewars Centre in Perth.

Since it opened in 1990 the centre has evolved into a first class business and function venue as well as an internationally acclaimed sporting arena.

Live Active Leisure demanded an environmentally friendly and efficient system to replace the existing R22 system. Johnson Controls proposed the creation of an air-cooled ammonia chiller complete with heat recovery and a very low ammonia charge due to the location being close to a pedestrians' footpath.

The chosen solution included a low charge air-cooled ammonia chiller with three variable-speed-drive screw compressors. Waste heat recovery from a desuperheater and oil coolers for ice pit snow melting were also incorporated.

A SCADA (Supervisory Control and Data Acquisition) was chosen to provide complete remote monitoring of the system. The glycol pumping system also employed variable speed drives

Finally, new flow and return headers were supplied and flow and return individual loops replaced.

Due to controls on the use of ammonia, the skid mounted ammonia chiller could not be placed inside the existing plant room. Johnson Controls set up a new construction outside the building on the loading area and because of the proximity to the near public areas and the intake of goods, the infrastructure had to be made save with consideration given to sound proofing the installation.

Extensive calculations were completed to ensure the noise was kept to a minimum. EC fans were employed on the air-cooled condenser and the fully-enclosed chiller was made weatherproof and equipped with acoustic removable panels and lockable access doors.

The installation has a low ammonia charge at just 0.3kg/kW of the refrigeration capacity.

The use of a new glycol system, ensured the temperature of the cooling mat was brought down more rapidly which resulted in quicker ice formation than the previous system. Consequently, the hours working on the ice pad formation and running times of the chiller were greatly reduced. And when there is minimum load on the ice rink during off peak hours, the chiller and pumps drop down in capacity to match site conditions.

► [CoolingPost](#), 5 July 2014

9. R22 Conversion is No Fishy Tale



UK: A spiral freezer plant at a Grimsby fish processing facility running on R22 is believed to be the first of its kind in the UK to be converted to operate on the new alternative R407F.

The conversion was carried out by Coldstar Refrigeration at Young's Seafood Grimsby facility with the A-Gas R407F refrigerant Genetron Performax LT supplied by Climate Center.

With the use of R22 for servicing existing equipment finally being banned in Europe at the end of this year, plant running on R22 must either be replaced or retrofitted to run on an alternative.

R407F is a blend of three fluids, R32, R125 and R134a, and has an operating pressure similar to that of R22. The non-flammable gas is suitable for use in both medium and some low temperature commercial refrigeration applications.

Its makers claim it can reduce refrigeration energy use by up to 15%, cut CO₂ emissions by up to 40%, and reduce overall operating costs by up to 10%. The gas also requires fewer plant modifications than other R22 alternatives.

The spiral freezer system at the Grimsby plant is based on a two-stage Grasso compressor with liquid injection, with a cooling capacity of around 80kW. The stand-alone system freezes fish fillets following processing, for storage or onward delivery.

Jay Burton of national contractor Coldstar Refrigeration said: "The conversion process required an oil change and some new gaskets and O-rings. Once the plant had been prepared, the gas change – using about 200kg of R407F – took just a day to complete, followed by inspection to ensure everything was running smoothly."

Robert Franklin, Climate Center's national sales manager for refrigeration, says: "The project is an excellent example of how R407F can extend the life of valuable plant and equipment currently dependent on R22. It offers a practical and cost-effective solution in wide range of applications. We expect take-up of the refrigerant to grow significantly over the coming months, as the final deadline for R22 approaches."



Robert Franklin:
"practical and cost-effective solution"

Following the success of the project, the contractor has been commissioned by Young's Seafood to convert the facility's central refrigeration plant to run on R407F. This substantial project involves the main plant at the site, which provides cooling for all the storage rooms. It will require between 700 to 1000kg of R407F.

The collaborative project is being headed up by Jay Burton of Coldstar, Zach Wynne of Climate Center, and Roger Smith of A-Gas.

► [CoolingPost](#), 16 July 2014

10. Russia to Allocate \$15 Mln for Global Environment Facility



Russian Prime Minister Dmitry Medvedev
© RIA Novosti, Dmitry Astakhov

MOSCOW, July 21 (RIA Novosti) - Russian Prime Minister Dmitry Medvedev signed the decree allocating \$15 million for the Global Environment Facility (GEF), according to a statement published on the official web portal of legal information on Monday.

"To make a contribution of up to \$15 million to the trust fund of the Global Environmental Facility established within the framework of the World Bank, funded with the federal budget's appropriations," the statement says.

The Global Environment Facility is a partnership for international cooperation addressing global environmental issues and uniting 183 countries. GEF was established in 1991 to provide new funding to ensure biological diversity, climate change, international waters, land degradation, ozone layer depletion, and persistent organic pollutants.

Since 1991, the GEF has provided \$12.5 billion in grants and leveraged \$58 billion in co-financing for 3,690 projects in 165 developing countries.

▶ [RIAN News Service](#), 21 July 2014



LATIN AMERICA AND CARIBBEAN

11. “HCFC Alternatives for the Foam Sector – Technologies and Equipment Solutions” (Seminar, 23 – 24 July 2014, Brazil)



The National Ozone Unit of the Ministry of Environment of Brazil and the United Nations Development Program (UNDP), in partnership with the Ministry of Environment and Protection of Land and Sea of Italy, are organising the seminar “HCFC Alternatives for the Foam Sector – Technologies and Equipment Solutions” to be held in the city of Chapecó, state of Santa Catarina, Brazil, on 23 – 24 July 2014.

The seminar will bring together a number of representatives of small and medium size enterprises, PUR sector associations, technology and equipment solution suppliers, as well as representatives of the Brazilian, Italian and other Latin American and the Caribbean governments, and international implementing agencies.

The aim of the seminar is to address HCFC-141b alternative technologies—with zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP), as well as equipment solutions in the PU sector. The seminar will also provide a session for interaction between companies and equipment suppliers.

Contact:

[Rafael Moser](#), UNDP

[Magna Luduvica](#), Ministério do Meio Ambiente, Brazil

▶ [Ministério do Meio Ambiente do Brasil](#), Julio de 2014

12. El Gobierno y Fundación Infocal unidos por el ozono (Bolivia)



Como parte de las actividades de la Comisión Gubernamental del Ozono, unidad dependiente del Ministerio de Medio Ambiente y Agua (MMAyA), se dará inicio hoy a la capacitación de técnicos en el manejo y control de sustancias agotadoras de la capa de ozono, en las instalaciones de la Fundación Infocal.

A través de estos cursos que cuentan con el apoyo de la Cooperación Belga, se otorgará la posibilidad a 100 estudiantes, quienes serán becados por seis meses, para formarse como técnicos en el ámbito de la refrigeración y realizar dichas labores en sus diferentes fuentes de trabajo.

Dado el importante impacto que implica contar con personal calificado y certificado en el manejo de hidroclorofluorocarbonos (HCFC), sino cumple con el cumplimiento del Protocolo de Montreal.

▶ [El Mundo](#), 21 de Junio de 2014



NORTH AMERICA

13. EPA Warning: Recharging Air Conditioners with Wrong Refrigerant Poses Injury and Fire Risks

WASHINGTON – The U.S. Environmental Protection Agency (EPA) is cautioning homeowners, manufacturers of propane-based refrigerants, home improvement contractors and air conditioning technicians of the safety hazards related to the use of propane in existing motor vehicle and home air conditioning systems.

A number of refrigerants with “22a” or “R-22a” in the name contain highly flammable hydrocarbons, such as propane. These refrigerants are being marketed to consumers seeking to recharge existing home and motor vehicle air conditioning systems that were not designed to use propane or other flammable refrigerants. These refrigerants have never been submitted to EPA for review of their health and environmental impacts and are not approved for use in existing air conditioning systems

Using propane-based refrigerant in an air conditioner that is not designed for flammable refrigerants poses a threat to homeowners as well as service technicians because systems that are recharged with “22a” refrigerants can catch fire or explode resulting in injury and property damage. EPA is investigating instances where propane-based refrigerants have been marketed and used as a substitutes for HCFC-22 (R-22) and will take enforcement actions where appropriate.

- ▶ US EPA Press Release 21 July 2014, Contact: [Enesta Jones](#)
- ▶ [Information](#) about R-22a and alternatives for air conditioning

See Also >>

[Seeking Victims in the Matter of Super-Freeze 22a and Other Flammable Refrigerants](#)

The Federal Bureau of Investigation (FBI), the Environmental Protection Agency (EPA) - Criminal Investigation Division, and the U.S. Department of Transportation - Office of Inspector General are conducting an investigation into a flammable “refrigerant” sold as Super-Freeze 22a, Super-Freeze12a, Super-Freeze 134a, Enviro-Safe 22a, and R134a. These products have not been submitted to the EPA for review as alternative and accepted refrigerants...

14. US EPA Proposes to Prohibit Certain High-GWP HFC Alternatives under SNAP



On July 9, 2014 EPA Administrator Gina McCarthy signed a proposed rule to prohibit the use of certain chemicals that significantly contribute to climate change where safer, more climate-friendly alternatives exist. This is the agency’s second action aimed at reducing emissions of hydrofluorocarbons (HFCs), a class of potent greenhouse gases, under President Obama's Climate Action Plan. Today’s proposed action would change the status of certain high-global warming potential (GWP) HFCs that were previously listed as acceptable under the SNAP Program to be unacceptable. The HFCs and HFC-containing blends affected by the proposal are used in aerosols, motor vehicle air conditioning, retail food refrigeration and vending machines, and foam blowing.

The pre Federal Register (FR) publication version of the rule is available on EPA’s website at: http://www.epa.gov/ozone/downloads/SAN_5750_SNAP_Status_Change_Rule_NPRM_signature_version-signed_7-9-2014.pdf

A fact sheet is available at: http://www.epa.gov/ozone/downloads/SAN_5750_SNAP_Status_Change_Rule-Fact_Sheet_070714.pdf

Note: While we have taken steps to ensure the accuracy of this Internet version of the document, it is not the official version. Please refer to the official version in a forthcoming Federal Register publication. Upon publication in the Federal Register, an official version of the rule and supporting information will be made available at www.regulations.gov in Docket No. EPA-HQ-OAR-2014-0198. Once the official version of this document is published in the Federal Register, this version will be removed from the Internet and replaced with a link to the official version.



FEATURED

OZONE SECRETARIAT

What's New Highlights: http://ozone.unmfs.org/new_site/en/index.php

Montreal Protocol Meetings Dates and Venues 2014

TEAP May 2014 Reports:

- [TEAP May 2014 - Progress Report \(vol.1\)](#)
- [TEAP May 2014 - Essential Use Nominations Report \(vol. 2\)](#)
- [TEAP May 2014 - Critical Use Nominations Report \(vol. 3\)](#)
- [TEAP May2014- Decision XXV/5 Task Force Report: Additional Information to Alternatives on ODS \(Draft Report\) \(vol.4\)](#) - Final version (advance version replaced on 16 June 2014)
- [TEAP May 2014 - Response to Decision XXV/6 \(vol. 5\)](#)
- [TEAP May 2014 - Decision XXV/8: Assessment of the Funding Requirement for the Replenishment of the Multilateral Fund for the Period 2015-2017 \(vol. 6\)](#) - Final version (advance version replaced on 10 June 2014)

Assessment Panels Meetings - Dates and Venues 2014

THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL

- The 73rd meeting is scheduled to take place in Paris, France from 9 to 13 November 2014.
- Documents related to the [72nd Meeting of the Executive Committee](#) Montreal, Canada, 12 - 16 May 2014, are now available.

OZONACTION

OzonAction [side events at OEWG](#)

Wednesday 16 July 2014
Time: 13:15-14:30
Room IX
Venue: UNESCO PARIS

Happening now: an OEWG side event

International Standards in Refrigeration and Air conditioning: Their importance in the HPMP process

Tuesday 15 July 2014
Time: 13:15-14:30
Room: IX
Venue: UNESCO PARIS

Happening now: an OEWG side event

Methyl Bromide phase-out: The final countdown
Pending issues, valuable experiences and a way forward

[View details](#)



[OzonAction "NewsDrops" Shared on YouTube](#) - A series of short video messages highlighting Scientific Fact-Finding on Ozone Layer...



View the [videos](#)



[International Standards in Refrigeration and Air-Conditioning](#) - This guide is intended to provide an introduction to standards and how they can be useful in supporting the adoption of alternatives in the context of the HCFC phase-out in developing countries. It also includes an overview of existing standards related to HCFCs and their alternatives, barriers to alternatives, the process of the adoption of international and regional standards at the national level, barriers to the adoption and how to overcome them. This publication is intended to be a concise guide for National Ozone Units (NOU), as well as for refrigeration associations, government departments, including those working on standardization issues (but perhaps not familiar with the specific requirements of the Montreal Protocol), and other stakeholders in the refrigeration and air-conditioning sector in Article 5 countries...



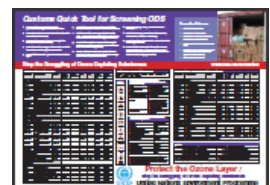
[Informal Prior-Informed Consent \(iPIC\) - Summary Report](#) - This summary report briefly describes how the iPIC system works as well as its advantages. It provides some information on the results and successes of monitoring and controlling illegal and unwanted trade in ODS through the iPIC mechanism in 2013 and encourages countries which are not yet members to join and to begin to reap the benefits of this initiative...



[Phasing-out Methyl Bromide in Developing Countries: A success story and its challenges](#) - This booklet addresses the efforts undertaken to phase-out Methyl Bromide in developing countries, the lessons learned and what is pending to reach final phase-out. It further analyses factors that may impact or put at risk the continuity of the phase-out and possible ways to mitigate them. It aims to promote the south-south and north-south-south cooperation, facilitate information exchange on advanced technologies for materials, varieties, rootstocks, etc. and raise awareness on risk of reversibility of MB uses and encourage policy to avoid it happening...



[Third Edition of the Training Manual for Customs and Enforcement Officers](#) is updated to reflect the evolving role of Customs and enforcement officers in implementing their commitments under the Montreal Protocol. It includes additional information on all the substances now controlled under the Montreal Protocol, with a focus on hydrochlorofluorocarbons (HCFCs) which are primarily used as refrigerants and foam blowing agents. HCFCs replaced chlorofluorocarbons (CFCs) which were phased out by 1st January 2010. As most ozone depleting substances are also potent greenhouse gases, the section dealing with linkages between ozone layer depletion and global warming has been extended to include new scientific findings...



See also the updated Poster "[Customs Quick Tool for Screening ODS](#)"



["A Healthy Atmosphere: the Future we Want"](#) OzonAction Special Issue 2013 (OASI), dedicated to stratospheric ozone and climate change related issues and the implementation of the Montreal Protocol, providing recent information on ozone protection activities from industry, governments, NGOs and international organizations. OASI is devoted to current topics of particular interest to Article 5 countries.



[Achievements & Highlights: 10th Anniversary of the Regional Ozone Network for Europe & Central Asia](#) The 10th anniversary brochure of the ECA network reflects a decade of network operation and aims to share major achievements, case studies and highlights to provide inspiration for countries within and outside the region. Government officials, refrigeration and enforcement experts, building planners and academia, Montreal Protocol secretariats, implementing agencies and bilateral partners, private sector companies and trade associations as well international organizations contributed more than 85 exciting articles and quotes to this bilingual English -Russian brochure.



[National Ozone Officers Guide](#). This guide introduces and summarizes the many important issues about the Montreal Protocol on Substances that Deplete the Ozone Layer that Ozone Officers (NOOs) need to know to perform their job effectively. Presented in an easy to understand format, the guide is designed to provide new NOOs and their assistants with the critical knowledge needed to quickly understand the Montreal protocol system and the country's obligations under the Montreal Protocol.



Putting a face to ozone depletion in Africa: HPMP Implementation in Africa, a special case study of Senegal. This guide introduces the implementation of Montreal Protocol in Africa. It describes the HCFC phase-out management plans (HPMPs) in selected African countries, especially in Senegal. It focuses on ozone, climate and energy efficiency aspects.



OzonAction Publications Catalogue 2014. Information on science, policies, and technologies forms the base of technology support and capacity building. Since 1991, the information clearinghouse of UNEP DTIE OzonAction has been helping developing countries to make informed decisions about phase-out by providing quality reviewed, need-based information services. Never before has such a power tool been so badly needed as now, when the Montreal Protocol is entering the second phase and when the climate benefits of its implementation are becoming so clear and evident. Showcased in this catalogue - sector-wise, as well as function-wise - are more than 145 publications, CD ROMS, videos, posters, TV spots, radio spots, DVD and other awareness materials to help National Ozone Units (NOUs) and other stakeholders in industry and governments to build their capacity to implement the Montreal Protocol and at the same time derive climate.



“The Arctic and the Ozone Layer”- background: In 2011, extremely low ozone levels were recorded in the Arctic region. This episode in the North Pole - the Arctic - has triggered concerns on the trend of the ozone layer's recovery, expected to fully happen by mid-century. With the support of the Government of Norway, UNEP is investigating the causes of this depletion and the scientific explanations for such an unexpected episode in the Arctic. This 16-minute documentary reports the impacts on the region's ecosystem

and the changes' foreseen risks in the Arctic that may affect human life also in mid-latitudes. This video output is jointly branded by the WMO (World Meteorological organisation) and brings to light some of the so much discussed inter-linkages between the climate and ozone issues on the voices of internationally known scientists. [Click here](#) to view video



EVENTS

2014



The Future of HVAC 2014 Conference, July 2014, Sydney, Australia.
Abstract / submissions for this conference are open



11th IIR-Gustav Lorentzen Conference on Natural Refrigerants - 31 August -2 September 2014, Hangzhou, China



Thermag VI -6th International Conference on Magnetic Refrigeration at Room Temperature, 7 -10 September 2014, Vancouver, Canada



5th International Biofumigation Symposium, 9-12 September 2014, Harper Adams University, UK



AIRAH **Acoustics Workshop 2014,** Thursday, 18 September 2014, Sydney, Australia.



[Intercool](#), 21-23 September 2014, Düsseldorf, Germany



[Journée du Ceren - réglementation, fluides à bas GWP, conséquences sur le marché et efficacité énergétique](#) Le 2 octobre 2014, Paris – France



[Énergies Froid](#), 1-2 octobre 2014, Rennes, France - deux journées dédiées à l'information pour répondre aux questions et aux enjeux de la profession.



[Chillventa 2014](#), 14-16 October 2014, Nuremberg, Germany - the Exhibition for Energy Efficiency, Heat Pumps and Refrigeration, Trends & Innovations from the Refrigeration and Air Conditioning Sector



[F-Gas Implementation Conference](#), 11 November 2014, Carisbrooke Hall, London W1, UK - The new F-Gas Regulation will lead to new significant changes and challenges for the sector. This conference from the joint trade associations and professional institutes will provide clear and reliable information on these changes and how they impact key sectors...



[The International Symposium on New Refrigerants and Environmental Technology 2014](#), organized by The Japan Refrigeration and Air Conditioning Industry Association (JRAIA), 20 - 21 November 2014, International Conference Center Kobe, Main Hall, Kobe, Japan.



[4^{emes} journées chaine du froid des produits de santé](#), organisées par AFF et SFSTP, à ENS Lyon, France, 26 - 27 novembre 2014

2015



[ASHRAE Announces Call for Papers for 2015 Winter Conference](#), 24-28 January 2015, Chicago, Atlanta



[International Conference IIR Commission B2 with B1 and D1 / Ammonia and CO₂ - Refrigeration Technologies](#), 16-18 April 2015, Ohrid, Republic of Macedonia.

See more events from the [IIR website](#)



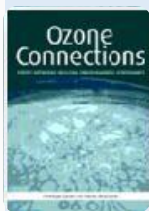
[FRIGAIR Africa 2015 is a go!](#) 3-5 June 2015, Gallagher Estate, Midrand. South Africa. FRIGAIR 2015 Showcasing the crucial role played by the HEVAC&R industry and the rapidly developing technology in eco-friendly efficiency.



[Congress of Refrigeration](#), 16-22 August 2015, Yokohama, Japan

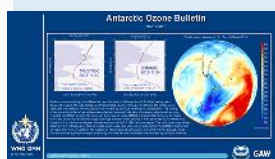


READING



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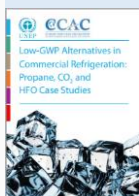
Greenleaf Publishing is pleased to make its book **“Ozone Connections: Expert Networks in Global Environmental Governance”** authored by Penelope Canan and Nancy Reichman, freely available to the UNEP and its National Ozone Units worldwide for one year, beginning on 16 September 2013. [▶ Read more](#)



WMO Antarctic Ozone 2013 Bulletins - The World Meteorological Organization Secretariat issues bulletins containing information on the state of the ozone layer in the Antarctic at roughly two week intervals from August to November. The bulletins are based on data provided by WMO Members which operate ozone monitoring stations in the southern hemisphere and satellites to observe ozone globally. [▶ WMO Antarctic Ozone Bulletins: 2013](#)



“The Antarctic Ozone Hole, An Update”, article in Physics Today, July 2014, Pg. 42-48, Authors: Anne R. Douglas, Paul A. Newman, Susan Solomon



Low-GWP Alternatives in Commercial Refrigeration: Propane, CO₂ and HFO Case Studies The CCAC has launched a transformative initiative (entitled ‘The HFC Initiative, Promoting HFC Alternative Technology and Standards’) for rapid implementation aimed at promoting HFC alternative technologies and standards to significantly reduce the projected growth in the use and emissions of high-global warming potential (GWP) HFCs in coming decades relative to business-as-usual scenarios. The objectives of the initiative are to mobilise efforts of the private sector, civil society, international organisations, and governments...



Renewables 2014 Global Status Report – See Global Overview - Heating and cooling, page 28.



Drawing down N₂O to protect climate and the ozone layer A UNEP synthesis report addressing the benefits of drawing down nitrous oxide (N₂O) emissions. N₂O is now the most significant ozone-depleting substance emission and the third most important greenhouse gas released into the atmosphere. Global anthropogenic N₂O emissions are rapidly increasing and are expected to almost double by 2050 unless mitigation action is accelerated. The continued build-up of N₂O, in the atmosphere will continue to deplete the stratospheric ozone layer and in so doing will to a degree undermine the achievements of the Montreal Protocol. The build-up of N₂O will also make it more difficult to achieve climate targets.



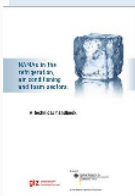
GUIDE+: HFC taxes & fiscal incentives for natural refrigerants in Europe, a comprehensive overview of existing and proposed fiscal measures aimed at reducing the HFCs use and emissions in HVAC&R sectors, while encouraging the switch to climate-friendly technologies, in key Europe countries.



UNIDO & shecco launch first GUIDE on Natural Substances in Developing Countries - The report, summarizing results from the ATMOsphere Technology Summit and global surveys gathering perspectives from emerging economies, is another clear step to strengthen shecco's involvement in international project activities helping developing countries seize additional climate benefits from natural refrigerants and foams.



Primer on Hydrofluorocarbons, Fast action under the Montreal Protocol can limit growth of HFCs, prevent up to 100 billion tonnes of CO₂-eq emissions by 2050, and avoid up to 0.5°C of warming by 2100. IGSD, January 2014, Lead authors: Durwood Zaelke, Nathan Borgford-Parnell, and Danielle Fest Grabiell. Contributing authors: Stephen O. Andersen, Xiaopu Sun, Dennis Clare, Yuzhe Peng Ling, and Alex Milgroom.



A technical handbook by GIZ Proklima on **Nationally Appropriate Mitigation Action (NAMAs) in the refrigeration, air conditioning and foam sectors** (RAC&F) a comprehensive guideline for the preparation and implementation of cost-effective mitigation actions on that particular sector. Produced as part of a global project on NAMAs on RAC&F, financed by the International Climate Initiative of the German Environment Ministry.



“GHG or not GHG: Accounting for Diverse Mitigation Contributions in the Post-2020 Climate Framework.” published by The Organisation for Economic Co-operation and Development (OECD)/International Energy Agency (IEA) Climate Change Expert Group (CCXG), highlights that the parties to the UNFCCC are working towards a new climate change agreement in 2015 and are likely to put forward a diverse range of intended national mitigation contributions. It notes that these contributions could vary from greenhouse gas (GHG) to non-GHG (such as energy efficiency) goals, using a variety of accounting approaches, which would determine the actual levels of emission reductions.



Flammable Refrigerants Safety Guide, AIRAH - Many of the refrigerants traditionally used in refrigeration and air conditioning systems in Australia have been non-flammable, non-toxic, synthetic greenhouse gases (SGGs) that have a high global warming potential (GWP). These were typically synthetic refrigerants including CFCs, HCFCs and HFCs. Due to the growing national and international concern regarding the resulting atmospheric effects of SGGs, the use of alternative low GWP refrigerants is increasing. Most of these low GWP alternative refrigerants are flammable...



IIAR publishes new CO₂ guide The International Institute of Ammonia Refrigeration (IIAR) has published a new edition of its CO₂ Handbook.



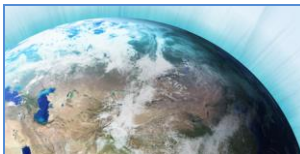
Echangeurs de chaleur à air pour circuits CO₂ - Trouver des solutions alternatives aux installations traditionnelles aux HFC est devenu un argument toujours plus pertinent afin de réduire l'empreinte carbone. Pour cette raison, l'utilisation de fluides réfrigérants naturels dans le domaine de la réfrigération a fortement augmenté ces dernières années. Le CO₂ semble être une solution excellente et écologique, car il n'est ni toxique, ni inflammable, arguments très

intéressants par rapport aux autres fluides réfrigérants naturels tels que les hydrocarbures et l'ammoniac. Le défi est de réaliser une installation aussi efficace (voir plus) que les installations HFC actuelles. Ce dossier expert décrit les points les plus significatifs, qui ont une incidence sur les performances du circuit au CO₂, en se focalisant sur ce que peut apporter un projet efficace d'échangeurs de chaleur à air ventilé. Les propriétés du CO₂ le distinguent des HFC actuels et posent des problèmes importants aux concepteurs, dus aux conditions de fonctionnement à haute pression. D'autre part, ses caractéristiques d'échange thermique élevé, ses bonnes propriétés thermo-physiques et la faible perte de pression ouvrent des possibilités intéressantes pour définir des échangeurs de chaleur à haute performance. Ce dossier illustre dans un premier temps les points clés de l'étude des unités de refroidissement d'air, les différences par-rapport aux appareils au HFC, et souligne la nécessité d'un faible volume interne. Les refroidisseurs d'air à détente directe et à pompe seront évoqués. [La Revue Pratique du Froid](#), 9 Juillet 2014



📺 **“Green Cooling for a Warming World”**. A new [video](#) by [Proklima](#) - explains how cooling technologies are linked to our climate and what it needs to ensure that they are truly environmentally friendly. The video shall enhance awareness on the harmful effects of F-gases on the ozone layer and the climate. Exemplarily, our “green cooling-family” discovers various practises of cooling in their life and learns about the use of natural refrigerants as an environmentally-friendly alternative to chemical refrigerants.

>> See also the related newly launched website: [The Green Cooling Initiative](#)



MISCELLANEOUS

[Reducing the climate impact of refrigerators and freezers in China](#) under a grant agreement signed [July 8, 2014] between the U.S. Trade and Development Agency (USTDA) and Midea, a leading China-based manufacturer of home appliances...

[Solar-powered cooling for MTN data centres](#) ... the system is driven by technology called Linear Fresnel Concentrating Solar Power (CSP) that uses heat generated from the sun and has a peak cooling capacity of 330kW...

[Pest Control Method Using Sex Pheromone Developed to Keep Sugarcane from White Grubs](#) - The Japanese National Institute of Agrobiological Sciences (NIAS), the Okinawa Prefectural Agricultural Research Center, and Shin-Etsu Chemical Co., a Japanese manufacturer of plastic, silicon, and semiconductors, announced on February 20, 2014, that the new method they developed for sugarcane pest control showed successful results. The method uses a sex pheromone to disrupt the mating of pests and prevent them from breeding.

Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC) a series of videos from the recent UNEA meetings. Available [here](#):

- Michel Rentenaar, Climate Envoy, Netherlands Perú (English)
- Manuel Pulgar-Vidal, Ministro del Ambiente, Perú (English and Spanish)
- Kossivi Uwolowudu Essiomle, Secrétaire Général, Ministère de l'Environnement et des Ressources Forestières, Togo (in French)
- Yunus Arikan, Policy Director, ICLEI
- Durwood Zaelke, President, IGSD
- Konrad Paulsen Rivas, Chile, Embajador ante Kenya y Africa del Este (in Spanish)
- Jun Daito, Ministry of the Environment, Japan

AIRAH HVAC&R industry's 2014 Awards are open to individuals, companies, corporate bodies, institutions and government authorities, and recognise work carried out during 2013, [Learn more/Nominate...](#)

AIRAH's Graduate Training Program on Track for 2015 Launch- The training program will cover essential HVAC&R knowledge for engineering graduates – professionals who are employed in consulting or contracting firms, but who have had little or no exposure to the HVAC&R industry before employment.

The pilot subject was “Introduction to HVAC&R – System Types and Applicability”, from the Fundamentals subject group.

The program will run for nine months, separated into two semesters. The content will be delivered online, with 100 hours' worth of topics divided into four key areas: Fundamentals; Equipment and Components; Systems; and Practice and Performance...



A mobile A/C bus training class is available August 29, 2014 in Texas Bus-Air will cover the ABC's of A/C, history, modern applications and system components in an intense class based on practical experiences in mobile A/C repair gained over 44 years. Meet one of the founders of aftermarket A/C from 1957. Hats and shirts will be given away...

E-learning module for law enforcement officers on hazardous chemicals and wastes under the Basel, Rotterdam and Stockholm Conventions, jointly developed by the Secretariat and Interpol, in Arabic, English, French and Spanish.

Geothermal Heat Pump Brings Year-Round Farming to Town in Northern Japan - Niseko, a town in Hokkaido, Northern Japan, is becoming as energy independent as possible by using renewable energy, especially geothermal heat. An experiment at Niseko high school on greenhouse cultivation using a geothermal heat pump in March 2012 proved its promising results, and the geothermal greenhouse heating at the school allows to grow vegetables year-round without relying on fossil fuels, bringing increased productivity and positive effects on the local economy.



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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:

Mrs. Samira Korban-de Gobert, Tel. (+33) 1 44.37.14.52, samira.degobert@unep.org

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