OzoNews

15 January 2015

Vol. XV

In this issue

UNEP

Multilateral Fund for the Implementation of the Montreal Protocol

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

Thank you for your interest in OzoNews!

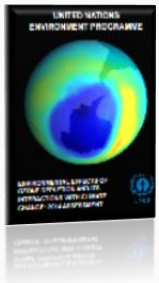
The OzoNews 15 January 2015 issue marks 15 years of continued service of providing, directly to your screen, a regular and brief news update regarding the implementation of the Montreal Protocol and ozone and climate protection.

The 2009 OzoNews Readers Survey -Report showed that at the time 96% of readers were satisfied or very satisfied by OzoNews and three-quarters shared OzoNews with colleagues or friends, thus increasing the number of OzoNews readers to several tens of thousands around the world! We hope this level of satisfaction will continue.

Your invaluable support and feedback throughout the years helped us serve you better. We always welcome your feedback to continue spreading news about the importance of ozone and climate protection and the implementation of the Montreal Protocol.

We would like to take this opportunity to thank you for your continued interest.

GLOBAL



1. Environmental Effects of Ozone Depletion and its Interactions with Climate Change: 2014 Assessment

The Environmental Effects Assessment Panel (EEAP) of the Montreal Protocol has completed its quadrennial assessment in accordance with decision XXIII/13 of the Twenty-Third Meeting of the Parties to the Montreal Protocol. The EEAP report is entitled "**Environmental Effects of Ozone Depletion and its Interactions with Climate Change: 2014 Assessment**" *(click to read/download)*

The assessment reports on key findings on the environment and health since the last full Assessment of 2010, paying attention to the interactions between ozone depletion and climate change. The assessment notes that the Montreal Protocol continues to be effective. However, the success achieved by the Protocol in limiting ozone depletion has not been shown in terms of consistency in UV-B irradiance measurements due to large natural variability. Among other key findings, the assessment report observes that with continued effective implementation of the Montreal Protocol, future changes in UV-B irradiance outside the Polar regions will likely be dominated by changes in factors other than ozone. The report also notes that changing behaviour with regard to sun exposure has probably had a more significant effect on human health than increasing UV-B irradiance due to ozone depletion.

The 2014 assessment by the EEAP has also been published in the current issue of the Photochemical & Photobiological Sciences journal. *(click to read/download)*

Simultaneous publication of the assessment in scientific literature aims to inform the scientific community how their data, modelling and interpretations are playing a role in information dissemination to the Parties to the Montreal Protocol, other policymakers and scientists.

The Ozone Secretariat express its appreciation for the excellent report produced by the EEAP, under the outstanding leadership of its Co-Chairs, as well as the remarkable work of the authors and reviewers who generously contributed their time and knowledge.

As you know, this year, we will commemorate the 30th anniversary of the Vienna Convention. We look forward to celebrating this important milestone with you and sharing with the rest of the world the success story of ozone protection, which is one of the greatest examples of science informing policy.

The Ozone Secretariat trust that you will find this highly informative assessment report to be a useful resource in our ongoing efforts to protect the ozone layer.

- UNEP Ozone Secretariat's website

2. Phasing Out Methyl Bromide: Success and Challenges

Methyl bromide (MB) was introduced into agriculture in the 1950s as a broad-spectrum, efficient fumigant for commodity and pre-plant soil fumigation. In 1992, MB was listed as an ozone depleting substance and controls were imposed by the Montreal Protocol to first regulate consumption and then to phase-out. The deadlines were: 1 January 2005 for developed countries (non-A5 Parties) and 1 January 2015 for developing countries (A5 Parties).

Under a special provision, Parties may use MB after the phase-out date through critical use exemptions (CUE), which may be granted for specific circumstances where replacing MB is particularly difficult for technical or economic reasons. Such exemptions are recommended by MBTOC and authorized on a yearly basis.

MB is also used in many countries for preventing and controlling QPS (quarantine and pre-shipment) pests and diseases that can affect commodities. Since no suitable alternatives were considered available for these uses at the time when MB was classified as an ODS, they remained exempted from control. This situation may change in the future because alternatives to MB have been developed in the QPS sector and are in use in several Parties; in fact, some Parties have already phased-out QPS uses entirely.

Through the Protocol, and often with help from its Multilateral Fund (in the case of A5 Parties) most countries have been able to adopt successful control solutions to some difficult pest and disease issues. The large total phase-out of MB so far achieved has contributed significantly to reducing atmospheric pollution caused by methyl bromide and consequently to ozone layer recovery.

Some benefits associated to the MB phase-out include:

• Over 80% of global consumption of MB has been phased out by 2014.

• Approximately 30% of the fall in stratospheric chlorine levels is due to reductions in MB use and the ozone layer is repairing.

• In non-A5 Parties, present consumption amounts to less than 1% of the overall consumption baseline (average consumption in 1991).

• More than 90% of the overall consumption baseline for A5 Parties (average consumption for the period 1995-1998) has been already replaced with alternatives, ahead of the January 2015 deadline.

• Technically and economically feasible alternatives have been identified and proven effective for the vast majority of MB controlled uses.

• Those sustaining the phase-out gain market benefits, since environment-friendly production practices are increasingly important to consumers.

In spite of these significant successes, some important challenges remain, and efforts in replacing this chemical need to continue:

• Use of MB for QPS is not controlled and QPS consumption is significantly increasing in certain regions. This is particularly true in some A5 Parties over the past decade and is a cause of concern, as it cannot always be explained in terms of increased trade.

• Implementation of alternatives has proven to be much more difficult in some sectors than others, for example in the production of plant propagation material (nurseries) which is subjected to very high health standards and often official certification (pest and disease free).

• Confusion between QPS and non-QPS uses and weak tracking systems for MB imported into a country can lead to illegal use and trade and needs to be controlled.

• Initially successful alternatives may lose effectiveness. For example, resistance to phosphine has been reported in some insect pests resistance breakdown has occurred in certain varieties and rootstocks of vegetables previously resistant to some soil borne pathogens e.g. Fusarium Verticillium, Meloidogyne.

• Some alternatives, particularly fumigants, are becoming restricted in some countries, whilst others are not available or are too expensive, making their use not economically feasible.

- Marta Pizano, Ian Porter, Mohammed Besri, Co-chairs of Methyl Bromide Technical Options Committee (MBTOC), article in OzonAction Special Issue 2014

See also: "**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.

AFRICA

3. Gambia Shows Commitment to Ozone Layer Protection

The director of Inter-Sectoral Service Network at the National Environment Agency (NEA) has reaffirmed that The Gambia is committed to the protection of the Ozone Layer after it had ratified both the Vienna Convention for the protection of the Ozone Layer in May 1990 and the Montreal Protocol on substances that deplete the Ozone Layer in June 1990.

Momodou Jaama Suwareh, who was speaking recently during the opening ceremony of a three-day training workshop on certification for refrigeration technicians residing within the Upper River Region (URR), further hinted that The Gambia government is showing commitment in the phased out ,consumption and production of Ozone Depleting Substances (ODS) since 2010.

Suwareh informed participants that the Ozone layer is the primary protection of the earth from the harmful rays of the sun; as the Ultra-Violet B Radiation from the sun has adverse effects on human and animal health; marine and terrestrial eco-systems. This, he said, can cause diseases such as skin cancer, eye cataract, the suppression of the immune system, and the destruction of food chain of marine and aquatic creatures.

NEA's inter sectorial director, however, disclosed that the continuous emission of Chlorofluorocarbons (CFCs), Halons, Methyl Bromide and Chloroforms could all deplete the ozone layer - something that can result to more severe environmental and health problems. Recognising the vulnerability of human beings, Flora and Fauna to ODS, Suwareh said, The Gambia has over the years taken giant steps towards the reduction and ultimate elimination of ODS through a number of measures. According to Suwareh, participants were expected to clearly understand what ozone and ozone depletion is all about, while on the other hand understand the purpose of them (participants) to join the rest of the world to protect the ozone layer by phasing out at the end of the training.

For his part, Alhagie Sarr, ODS programme officer at the NEA, said the training was aimed at strengthening the capacities of refrigeration technicians and also to enhance detection and retrofitting of ODS. He further pointed out that the training will provide certification for the technicians through the provision of professional license that would allow them to operate.

Sarr disclosed that The Gambia has also ratified the Copenhagen and London Amendments to the Montreal Protocol in 1992 and 1995 respectively. The ODS programme officer, therefore, urged participants to take the training seriously and disseminate their knowledge and skills to others.

Momodou Mendy, Senior lecturer at the GTTI, who served as facilitator at the training noted that by the end of the training, participants were expected to clearly understand what ozone and ozone depletion is all about and would understand the reason why they as technicians must join the rest of the world to protect the ozone layer by phasing out CFCs.

Sheikh Alkinky Sanyang, NEA's environmental education officer who chaired the opening ceremony said nature is at conflict with mankind, and therefore, appealed to participants to use environmentally friendly activities and devices to make the planet suitable and lasting home for the unborn generation.

AllAfrica, 31 December 2015

4. Phasing Out Ozone Depleting Substances (Nigeria)

The year 2015 is opening with a new hope for cleaner environment in terms of tackling challenges that hindered the efforts of achieving the set goals in 2014 for a sustainable environment.

Nigeria's forecast last year was to sustain the environment and protect it from unfriendly elements and activities. Though, so many pronouncements and projects have been infused into the process in order to avert the looming energy and climate crisis. These are expected to cut down on energy poverty, reduce the congestion on the national grid, sustain the environment and improve the health of the people.

The government had set target of 2014 for phasing out candle and kerosene lamps and non-biodegradable plastics and 2015 for trichloroethane substance and methyl bromide respectively. The target for 2014 has been missed, but the right steps have to be put in place to achieve the goals of this year. […]

The ministry has started a programme to phase out the use of trichloroethane substance by 2015 as part of its effort to protect the ozone layer.

Trichloroethane is a solvent used in the cleaning industry and also used as a processing agent.

Also to be phased out is methyl bromide, a substance used for fumigation and preservation in the agricultural industry. To this effect a target has been set for banning the substances to meet the deadline set by the Montreal Protocol to phase out ozone depleting substances in developing countries.

AllAfrica, 7 January 2015, By: Chidimma C. Okeke

ASIA PACIFIC

5. Policy is the key! (Thailand)

Thematic Meeting of South Asia Network Ozone Officers, Customs Officers and Partners Bangkok, 20 December 2014 - National Ozone Officers (NOOs) and Customs Officers gathered for the "Thematic Meeting of the South Asia Network of Ozone Officers". This meeting was organized by UNEP ROAP OzonAction at the United Nations Conference Centre in Bangkok, Thailand, from 17-19 December 2014.

Apart from the South Asia NOOs as the key participants, representatives from Customs Administration or ministries (e.g. Ministry of Commerce) that are implementing national ODS licensing/ quota systems were also invited and participated in the discussions. Among the agencies that took part in the meeting in presence or via virtual platforms were: the European Commission, the Multilateral Fund Secretariat, UNDP, UNIDO, World Bank, World Customs Organisation's Regional Office for Capacity Building – Asia Pacific (WCO ROCB A/P), and Environmental Investigation Agency (EIA).

The meeting focused on policy and enforcement as the key tools for achieving HCFC phase-out. For the first time during the HCFC phase-out, both ozone and customs officers of South Asia countries came together to strengthen their cooperation to remain in compliance with the control measures under the Montreal Protocol on Substances that Deplete the Ozone Layer. This multilateral environmental agreement includes time-bound and measurable deadlines to phase-out ozone depleting substances (ODS).

The main objective was to carry out an in-depth, trans-boundary analysis of the control policies and enforcement issues for HCFCs as identified by the South Asian ozone officers at the last Regional Network meeting in Colombo in May 2014. The meeting also generated a set of concrete actions to be implemented in 2015 by each participating country based on the discussions and information exchanged.

During the three-day meeting, some key policy issues were discussed such as enforcing quota systems for HCFC control, trans-boundary dialogues, combatting ODS smuggling, trade data and reporting of imports and exports. For those who were less familiar with the Montreal Protocol, some sessions were offered to inform them of current issues concerning its enforcement.

The agenda also covered updates on the key decisions from the last Meeting of the Parties to the Montreal Protocol and the Executive Committee Meeting (both held in November 2014); the reviews of the progress made within the South Asia Network, as well as the work plan for 2015.

The meeting resulted in customs officers agreeing to have an informal network amongst them for more effective cross-border enforcement. The meeting also provided an opportunity to explore new partnership with the International Network of Customs Universities (INCU), International Labour Organization (ILO) and World Intellectual Property Organization (WIPO). These partnerships are hoped to assist countries in strengthen their capability to meet the Montreal Protocol obligations.

Managed by UNEP's OzonAction Compliance Assistance Programme (CAP), The South Asia Network includes 13 countries: Afghanistan, Bangladesh, Bhutan, China, India, Iran, Democratic Republic of Korea, Republic of Korea, Maldives, Mongolia, Nepal, Pakistan and Sri Lanka. Japan is the developed country partner

of the network. The network receives financial support from the Multilateral Fund for the Implementation of the Montreal Protocol.

Contact: Atul Bagai, Regional Network Coordinator, South Asia, OzonAction Compliance Assistance Programme, UNEP Regional Office for Asia and the Pacific

- UNEP OzonAction Branch, December 2014

6. Pohnpei Campus RAC Professor Conducts Training for Technicians in Chuuk

Weno, Chuuk (January 5, 2015) – Associate Professor Bertoldo Esteban Jr. from Pohnpei Campus conducted training in Refrigeration and Air Conditioning (RAC) in Chuuk from November 19-21, 2014.

The training was part of core activities charted under the Pacific Regional Hydrochlorofluorocarbon Phaseout Management Plan (HPMP), which currently is under its implementation stage.

The purpose of the training was to re-enforce the vision of Montreal Protocol. The training is also required under the Pacific Regional Hydrofluorocarbon Phase-Out Management Plan (HPMP).

This training targeted technicians currently servicing the refrigeration and air condition sector in the State of Chuuk; Not only to enhance their skills in handling new refrigerant but also to expose governmental policy, and obligations under the Montreal Protocol in relation to the RAC sector.

A total of 28 RAC technicians from both private and public sectors and 2 customs officers participated in this training.

The training was also part of collaboration efforts between Office of Environment & Emergency Management (OEEM) and COM-FSM/Pohnpei Campus.

- College of Micronesia-FSM, 5 January 2015

EUROPE AND CENTRAL ASIA

7. Invitation of Nominations for the ECA Ozone Protection Award for Europe & Central Asia 2016 (4th edition)

The Europe & Central Asia (ECA) network is inviting the customs & enforcement community to submit nominations for the 4th edition of the ECA Ozone Protection Award. It is a regional award for the ECA network & associated CEIT countries as well as their trade partners. The award ceremony is scheduled in Ashgabat, Turkmenistan in May 2016.

The nomination including a detailed description of the case, any evidence and photographs should be submitted to Halvart Koeppen, UNEP DTIE OzonAction Programme, Email: halvart.koppen@unep.org using the nomination form included in the info note on the seizures and iPIC, as soon as the information is available but at the latest by 30 April 2016.

The ECA Ozone Protection Award for Customs & Enforcement Officers aims to provide incentive and recognition to customs and enforcement officers and their respective organizations, who successfully prevented illegal / unwanted trade of substances, equipment or products relevant for the implementation of the Montreal Protocol. It contributes to raising awareness about the Montreal Protocol and promotes cooperation between national customs services and ozone units.

The award has been initiated by UNEP OzonAction and endorsed by the World Customs Organization, Ozone Secretariat, Multilateral Fund Secretariat, and Czech Republic as the initial donor for enforcement activities in the ECA region. In 2014, customs & enforcement officers from Albania, Belarus, Bosnia and Herzegovina, China, Cyprus, European Union, Georgia, Germany, India, Israel, Kyrgyzstan, Montenegro, Russia, Serbia, Spain, Tajikistan, Turkey, Ukraine and Uzbekistan received the award during the ECA Customs Cooperation meeting in Sarajevo, Bosnia and Herzegovina, 20-21 May 2014.

During the period of September 2012 and April 2014, the award winners reported 133 successful seizures of

7370 pieces of equipment (appliances and compressors) and 9513 refrigerant cylinders / containers containing more than 467 metric tons of ozone-depleting chemicals and mixtures. Informal Prior Informed Consent (iPIC) consultations prior to the issuance of trade licenses avoided 67 unwanted / illegal shipments of more than 846 metric tons of ozone-depleting chemicals and mixtures. In addition, more than 175 metric tons of illegal trade in ODS has been detected, which had taken place in the past.

The info note on the seizures and iPIC consultations reported in the context of the award ceremony of the 3rd edition includes descriptions and photos of the major cases, summary statistics as well as the nomination form for the 2016 4th editions. Click here to read/download.

Contact: Halvart Koeppen, Coordinator of ECA network, UNEP OzonAction Compliance Assistance Programme

8. Natural Refrigerants Set to Fill Vacuum Created by EU's Now Active F-Gas Regulation and R22 Ban

Europe is set to have a landmark year for the usage and promotion of natural refrigerants. The entry into force of both the new F-Gas Regulation and the HCFC phase out across the EU at the beginning of 2015 will see the appeal of natural refrigerants increase exponentially in Europe and beyond.

The measures under the EU F-Gas Regulation agreed among the EU institutions and 28 Member States became binding as of 1 January 2015. F-gas emissions are to be reduced by 2/3 by 2030 compared to today's levels as part of the Regulation. Within the next decade, a number of new measures restricting the use of HFCs will be phased in, with HFC bans in new equipment expected to have the most immediate effect on the introduction of natural refrigerants.

Moreover, as of 2015 it is no longer legal to use recycled or reclaimed R22 to service R22 equipment in the EU. Such technology becomes obsolete and needs to be replaced once a refill is needed. Considering the restrictions under the EU F-Gas Regulation the direct switch to natural refrigerants is the logical step for end users.

Key measures in F-Gas Regulation

The ink has barely dried, but already it is easy to envisage an exciting decade for natural refrigerants within this new paradigm. While the F-Gas Regulation is a multi-faceted policy measure, there are some prominent restrictions, which will shake up the EU's refrigerant market and open up the way for natural refrigerants.

The gradual phasing down of HFC usage via quotas will lead to an increase in price as production dissipates and supply dwindles, the price for the luxury of continuing using high- GWP HFCs will become unsustainable for most firms. This means that alternatives will be sought: namely natural refrigerants. In addition to this, bans on the use of HFC in newly produced equipment will gradually enter into force in certain sectors such as (but not limited to):

– Domestic refrigerators and freezers with global warming potential (GWP) ≥ 150 as of 2015

Refrigerators and freezers for commercial use, hermetically sealed, with GWP ≥ 2500 as of 2020 and GWP ≥ 150 as of 2022

– Stationary refrigeration equipment (except those designed to cool below -50oC) with GWP ≥ 2500 – as of 2020

– Multipack centralized refrigeration systems for commercial use with capacity ≥ 40kW with GWP ≥ 150 – as of 2022, except in the primary refrigerant circuit of cascade systems where f-gases with a GWP < 1500 may be used.

Other measures that will impose stricter measures on the use of HFCs include service ban on refrigerants with GWP > 2500, strengthened containment and end of life requirements, among others.

The time for wide-spread use of natural refrigerants

Since the agreement on the EU F-Gas rules were sealed earlier in 2014, the interest in natural refrigerants has been steadily on the rise especially for sectors that will see introduction of HFC bans. In commercial

refrigeration for example, some of the major system manufacturers expect that Europe will see over 6,000 CO2-only stores annually by 2018, with progressively more being installed in southern Europe as solutions for warmer climates become increasingly available.

As HFCs are gradually phased out, the vacuum which will be created will grow bigger and bigger. Natural refrigerants are the obvious answer to fill this demand. With a surge in demand expected, awareness and availability are also set to match expectations meaning this could be a defining year for the identity of natural refrigerants, setting a prime example for the rest of the world to follow.

R744, 9 January 2015

See also: EU F-Gas Regulation: Guidance for Users, Producers and Traders - The EU has introduced a new regulation on the use of fluorinated greenhouse gases (F gases) like hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexaflouride (SF6). The regulation replaces the 2006 regulation. It impacts anyone who:

manufactures, uses or services equipment that contains F gases, like refrigeration and air conditioning systems, solvents or aerosols;

produces or wholesales F gas imports or exports F gas, or equipment containing F gas, to or from the EU

Requirements of the 2014 EU fluorinated greenhouse gas (F gas) regulation, including the phasing out of HFCs and product bans. Contents:

- 'Operators' (users) of equipment containing F gas
- Refrigeration or air conditioning equipment containing HCFCs
- Service companies that maintain equipment containing F gas
- HFC phase down
- Equipment manufacturers and importers
- Semiconductor manufacturers and magnesium smelters
- Businesses with record keeping requirements
- Regulated gases and supporting guidance

Department for Environment, Food & Rural Affairs and Environment Agency, (*First published 31 December 2014*)

9. New Legislation to Impact Fire Suppression Methods

Today there is a vast array of solutions for managing the fire risk in data centers and whilst this provides plenty of choice to the end user, it can make the decision-making process a challenge.

Now, there's a new issue to consider: environmental regulation. Recent changes have been made to the F-gas Regulation in Europe, which aims to reduce the use of greenhouse gases, including hydrofluorocarbons (HFCs).

The future for HFCs

When halon-based systems were phased out at the end of the last decade, one of the most popular alternatives was HFCs (Hydrofluorocarbons), man-made compounds used in refrigeration, air conditioning, insulating foam, aerosols, medical devices, solvent cleaning and fire suppression systems. One of the more widely used examples in the fire protection industry is HFC-227ea (i.e. FM-200 brand) considered a first generation halon alternative.

However, even without the new legislation, there were already some concerns around use of HFCs: while the ozone depletion potential of HFCs is zero, they are potent greenhouse gases. For instance, the global warming potential (GWP) of HFC-227ea is 3,220. This means it is 3,220 times more potent than CO2 in its climate impact.

It has been reported in the US Proceedings of the National Academy for Sciences that if nothing changes, HFC emissions are likely to be equivalent to between 9-19 per cent of global greenhouse gas emissions by 2050. Of course, regions will differ, but it's interesting to note the claim that without significant action, HFC emissions in the US are expected to double by 2020 and nearly triple by 2030, as reported on the Climate Action Plan website.

The legislation

On 12 March 2014 the European Parliament voted to support a European Commission proposal to cut the use of hydrofluorocarbons (HFCs) to 79 per cent below average 2009-2012 levels by 2030, as part of the Regulation (EU) No 517/2014 of the European Parliament and of the Council of 16 April 2014 on fluorinated greenhouse gases and repealing Regulation (EC) No 842/2006. It has since become law, the provisions of which will come into effect this month.

This has direct impact on the use of HFCs in fire suppression systems, since they have some of the highest global warming potentials (GWPs) relative to other sectors.

Some people may claim that the F-gas Regulation can be dismissed in the fire suppression market, on the basis that HFCs have low emissions in fire suppression (in other words, the claim that they are non-emissive unless a system discharge occurs). In fact, the F-gas Regulation is about reducing emissions by controlling the use (and as a consequence, the production and importation of HFCs). Therefore, the effect on the fire suppression industry is very real.

Under the HFC cap and phase-down, HFC producers will be allocated a production/import quota for HFCs and will have difficult decisions to make. Because the quota will be in CO_2 equivalent (related to the GWP), this framework does not favor the HFCs used in fire suppression with their comparatively high GWPs. For example, an HFC producer would consume the same percentage of a quota by making either one ton of HFC-227ea, three tons of HFC-245fa, or five tons of HFC-32

Nor is it just new fire suppression systems that are affected by this legislation. Given that fire suppression systems can easily remain in situ for 20 or more years, any HFC-based system already installed or purchased over the next few years will be affected by the F-gas Regulation. HFCs used for recharging existing systems, or in the installation of additional new HFC-based systems, will be increasingly impacted by the phase-down schedule.

Suddenly those purchasing HFC-based fire suppression systems will not only face immediate price consequences, they will also need to be aware of other future issues such as system recharge costs and potential end-of-life costs when a system is ultimately decommissioned. […]

Data Center Dynamics, 9 January 2015, By: Bart Goeman

10. EU Convention ISPM-15: KCA Urges Exporters to Ensure Strict Compliance

The Karachi Cotton Association on Monday urged all the members of textile sector to strictly comply with International Sanitary and Phytosanitary Measures (ISPM-15) to avoid imposition of a ban on import of perishables from Pakistan to European Union.

In a press communication based on a letter received from the country's Ministry of Textile Industry, KCA has reminded all textile companies and exporters of textile goods that under EU policy decision no textile product carrying wooden pallets or any wood material should be exported to any of its member states without fumigation with methyl bromide from registered fumigator of the Plant Protection Department.

This textile specific warning issued by Ministry of Textile Industry was said to be due to the fact that some textile companies have used wood packing material, wooden pallets with harmful organism carrying exported textile products to member states of EU. It was reminded that Pakistan is also signatory to International Plant Protection Organization and IPPC Portal, under which wooden material are not only required to be fumigated with methyl bromide but have to be also certificated from National Plant Protection Organization.

The relevant authority, in context of Pakistan was said to be Department of Plant Protection. The KCA officials on basis of letter received from country's Ministry of Textile particularly referred to the warning issued by the DG SANGO (Directorate General for Health and Consumer Affairs) European Union that a ban may be imposed on import of perishables from Pakistan if the international agreement signed by it is ignored or violated.

Business Recorder, 13 January 2015

11. Phasing out HCFCs in Trinidad and Tobago

The Ministry provided 3 Multi-refrigerant Identifiers to the Trinidad and Tobago Bureau of Standard (TTBS) to aid in its monitoring effort of HCFC and other ODS Importation. From Left to Right: Dr. Marissa Gowrie, Mr. Theodore Reddock, Mr. Steve Williams, Mr. Errol Ramjohn and Mrs. Vidiah Ramkhelawan.

Political commitments by all governments, including Trinidad and Tobago, have been fundamental to the success achieved under the Montreal Protocol. As we work toward meeting future challenges, all countries must join hands making sound environmental choices.

Trinidad and Tobago is a small island developing state (SIDS) in the Caribbean. Yet its commitment to ozone layer protection and fulfilling all obligations under the Montreal Protocol is as steadfast as larger countries. At the same time, changes in air conditioning and refrigeration dependent sectors -- such as tourism, health, food and industrial activity -- can have major impact on the economy.

Trinidad and Tobago acceded to the Vienna Convention and the Montreal Protocol on August 28, 1989, and operates under paragraph 1 of Article V. Since then, it has ratified all subsequent amendments to the Protocol.

Some special measures already taken by Trinidad and Tobago as part of the phase-out process include:

• Implementing a series of public awareness programmes;

• Implementing various training programmes in good refrigeration practices for trainers and technicians in the air conditioning and refrigeration industry;

• Implementing a freeze and introducing a quota system on import of all ODS since July 1, 1999;

• Imposing restrictions on the import and export of equipment requiring the use of ODS and refrigerant through a licensing system;

• Developing a refrigerant standard and labelling standard for equipment using refrigerants;

• Introducing ozone and climate friendly refrigerant (hydrocarbons) to the local market;

• Training programmes for technicians in the air

conditioning and refrigeration industry to sensitise on hydrocarbons;

• Ban of imports of CFCs and halons into Trinidad and Tobago since 31 December, 2007; and

• Phasing out of HCFCs from 1 January, 2013

Meanwhile, methyl bromide is to be phased out completely for non-quarantine and pre-shipment uses by 2015. Also, equipment using HCFCs or blends of HCFCs (such as HCFC 22, HCFC 406, HCFC 408, HCFC 409, and HCFC 401) will no longer be allowed for import from 1 January, 2015. This will make the country well on its way to meeting all targets of the HCFC phase out.

The Ministry of the Environment and Water Resources through the National Ozone Unit, works in close collaboration with the Trinidad and Tobago Bureau of Standards, the Customs and Excise Division, the Plant Quarantine Division, the Pesticides and Toxic Chemicals Unit, the Air Conditioning and refrigeration Industry Association, and the Trade Licensing Unit of the Ministry of Trade Industry Investment and Communications, in implementing all the national controls for ODS.

Each nation, and each citizen needs to commit to take action now. When it comes to saving the environment, every action counts!

Marissa Gowrie, National Ozone Officer, Trinidad and Tobago, article in OzonAction Special Issue 2014

NORTH AMERICA

12. Food Marketing Institute (FMI) Considers the Future of Supermarket Refrigeration

Research Reveals Optimal Refrigerant Choice is Dependent on Application, Setting

Drusilla Hufford, director of Stratospheric Protection Division, U.S. Environmental Protection Agency (EPA), said a proposal to ban certain HFCs in 2016 was part of the agency's efforts to locate lower-GWP refrigerants.

ST. LOUIS — Refrigeration contractors are aware the supermarket industry is working through a labyrinth of refrigerant system changes.

The sector is sensing the demise of high-global warming potential (GWP) hydrofluorocarbons (HFCs) for use in HVAC systems, including some of the most commonly used refrigerants, R-404A and -507. Even if the line between high- and low-GWP HFCs has yet to be drawn, the industry is considering low-GWP options more frequently.

Stakeholders are also taking a close look at synthetic hydrofluoroolefins (HFOs), which are recognized as low-GWP alternatives to HFCs, and so-called natural refrigerants like CO_2 and propane.

With all that comes change in equipment that often results in systems comprised of mix-and-match pairings of various synthetic and natural refrigerants.

While there were no clear-cut answers or definitive solutions at the most recent Food Marketing Institute (FMI) Energy and Store Development Conference, the 2 ½-day event did provide attendees an update of what's being worked on and what's being used in some stores today.

Refrigerants

The conference took place shortly after the U.S. Environmental Protection Agency (EPA) announced a proposal to, in effect, ban use of R-404A, R-507, and a number of other perceived high-GWP refrigerants from use in a wide range of commercial refrigeration equipment installed in 2016 or later. Drusilla Hufford, director, Stratospheric Protection Division, EPA, told the audience the proposal was part of the agency's efforts to encourage the search for lower-GWP refrigerants that reduce overall risk to human health and environment.

One concern raised at the conference by a number of attendees was the timeline to bring new equipment to the industry that would work with the lower-GWP refrigerants. She said, "The EPA continues to seek comments on technical challenges, availability of alternatives, need for changes to manufacturing processes, safety upgrades, and its ability to meet proposed compliance dates."

Robert Wilkins, speaking just prior to his retirement as vice president of public affairs for Danfoss, noted the EPA ban is just part of a trend that likely carries global implications. "An HFC phasedown is increasingly likely," he said. "The issue is when and how — not if. Change in the supermarket industry is likely to accelerate."

This change was highlighted through Wilkins' mention of CO_2 systems that operate in a transcritical approach, or those that work in a cascade configuration using HFCs and HFOs. And, he said. Self-contained equipment operates with small hydrocarbon (HC) charges. Meanwhile, it's no secret that "Legacy [existing] HFC systems are under increased pressure to reduce leaks and the switch to lower-GWP alternatives."

Systems

Jeff Staub, application engineer manager, Americas, Danfoss, shared his knowledge on various low-GWP alternatives, noting the proper refrigerant largely depends on specific "applications, regulatory requirements, region, and state of educational level in the service sector, among other reasons." He noted research in this regard is being done as part of the Air-Conditioning, Heating, and Refrigeration Institute (AHRI)'s Low-GWP Alternative Refrigerant Evaluation Program (Low-GWP AREP).

Regarding the no-GWP refrigerant sector, Staub said there are approximately 4,000 transcritical CO_2 systems out there today. "It's a mature technology. And, CO_2 technologies are developing to overcome current challenges related to efficiency in high-ambient conditions, integrated HVACR applications, and smaller formats."

When it comes to new stores, he urged the audience "to consider pilots with new technologies, natural refrigerant options, and alternative system architectures."

Those systems formed the basis of a talk by Tim Anderson, principal engineer, Hussmann Corp. He looked at HFC, CO_2, glycol, and propane refrigeration systems, considering their "strengths and weaknesses and how supermarket operators can determine which system is right for their companies and cultures."

He looked at six system configurations: centralized parallel rack with R-404A as a baseline; distributed system; a system with CO_2 on the low-temp side and glycol on the medium-temp side; cascade direct expansion with CO_2 on LT and secondary CO_2 on MT; transcritical CO_2 on MT with cascade direct expansion CO_2 in LT; and a water-cooled micro-distributed system.

After looking at pros and cons of each, he cited what he called two guiding principles. "There is no perfect solution, and the refrigerant choice cannot be separated from the system choice."

In the Field

While the lower-GWP 407 Series of HFCs and propane were touched upon, the supermarket refrigerant referenced most often at the FMI event was CO_2. The so-called natural formed the basis of a plenary session in which retailers told of their experiences with systems designed to work with the refrigerant.

Harrison Horning, director, equipment purchasing, maintenance, and energy — North, Delhaize Group SA, talked about the installation of a transcritical CO_2 system at a supermarket in Turner, Maine, which served as a pilot project. Among the pilot's findings, he said, were that project economics depend on many variables. Energy performance can be good, maintenance can be manageable, and we can learn a lot from Europe, Canada, and other parts of the world [where such transcritical CO_2 systems are being installed at a more rapid pace than in the U.S.]

Benny Smith, vice president, facilities, Price Chopper Supermarkets, updated attendees on a cascade refrigeration system in Saratoga, New York, that combined CO_2 with an HFC refrigerant.

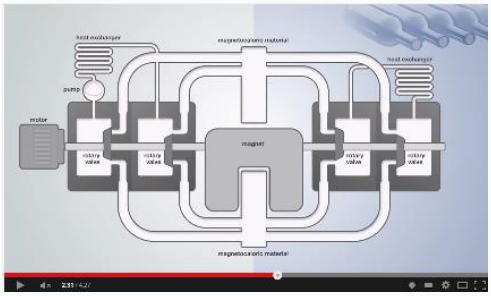
One of the recurring themes in his presentation was the importance of involving service technicians in the entire process.

"Involve techs early on in the project," he said. "Have them on the install and keep them well-trained and informed."

The News, 29 December 2014, By Peter Powell

13. Premiere of Cutting-edge Cooling Appliance at CES 2015

LAS VEGAS and LUDWIGSHAFEN, Germany, Jan. 5, 2015 /PRNewswire/ -- Haier, a leading global manufacturer of household appliances, Astronautics Corporation of America, a global technology company, and BASF, the world's leading chemical company, present at the International Consumer Electronics Show (CES, Jan. 6 - 9) in Las Vegas, Nevada, a proof-of-concept wine cooler refrigerated by a magnetocaloric heat pump.



A magnetocaloric heat pump – a cooling device based on magnetocaloric materials – is an ideal alternative to traditional compressor-based refrigeration technology. Magnetocaloric materials heat up when put in a magnetic field and cool down when removed from the magnetic field. In the magnetocaloric heat pump, heat is transferred from the cold interior of the wine cooler to the warm surrounding air by shuttling a water-based coolant through the magnetocaloric materials as they go in and out of the magnetic field.

One key to success is a class of functional materials based on manganese and iron developed by BASF and its partner Delft University of Technology, the Netherlands. "Together with our research colleagues who are well-experienced in functional materials as well as in systems solutions and modelling, we developed this innovative class of materials," explains Andreas Riehemann, Managing Director of BASF New Business GmbH. "Together with our partners we can develop tailor-made functional materials for our customers' cooling applications." The magnetocaloric materials consist of abundant and affordable raw materials. They feature high performance across the whole range of temperatures relevant to refrigeration as well as high volume stability under operating conditions. BASF will sell these materials under the Quice® brand.

Astronautics provided the specialized expertise to integrate the new materials into the magnetocaloric heat pump. "By operating an integrated wine cooler prototype we demonstrate that magnetocaloric technology has the potential to revolutionize the cooling industry," says Dr. Steven L. Russek, Director of the Astronautics Technology Center in Madison, Wisconsin. Using BASF's magnetocaloric materials, Astronautics developed

the magnetocaloric heat pump and along with Haier integrated it into the prototype wine cooler. Theoretical studies demonstrate that refrigeration systems based on the magnetocaloric effect can be up to 35% more energy-efficient than vapor compression systems. Furthermore, cooling systems based on magnetocaloric materials will operate with less noise due to the absence of a compressor. This technology makes use of water-based coolants instead of gaseous refrigerants.

Haier contributed their knowledge of household appliances and led the prototype development of the wine cooler which is now equipped with the magnetocaloric heat pump. "The investment in the world's first magnetocaloric wine cooler symbolizes Haier's determination to be truly customer-focused and forward-thinking," says Dr. Tao Xie, Director of Disruptive Technology of the Haier America Tech Center in Evansville, Indiana. "We are constantly challenging ourselves for disruptive ways to deliver new user experiences and be socially responsible for the community and the environment. The magnetocaloric wine cooler prototype shows great promise to help our customers save energy, cut utility bills, and reduce operating noise. As an environmentally friendly technology that produces zero ozone depleting gases or greenhouse gases, it is a technology Haier is aggressively pursuing." Haier plans to introduce the technology into the market within the next couple of years providing a compressor free cooling alternative. The partners plan to continue their cooperation to achieve this goal.

- Learn more about the functional principle
- PR Newswire, 5 January 2015

14. Hearing Feb. 3 on Proposed $10 Drop-off Fee for Freon Appliances

NORWALK -- Residents soon may have another way to get rid of their old air-conditioners and other Freon-charged appliances. The Common Council's Public Works Committee is considering establishing a drop-off fee of $10 per unit for residents bringing such items to the Norwalk Transfer Station & Recycling Center on Crescent Street.

Director of Public Works Harold F. Alvord explained the proposal to committee members Tuesday evening. "What we're suggesting is we found a firm -- actually City Carting found us a firm -- that will take these (appliances)," Alvord said. "We can store by a permit with DEEP, up to 120 units at a time at the Transfer Station. It will cost us $5 per unit to have them picked up by this company whenever we have a full load." Alvord said a collection box would be placed on the tipping floor of the transfer station. For a fee of $10, residents would drive in and drop off their Freon-loaded appliance.

When 120 such appliances have been collected, as per permit with the state Department of Energy and Environmental Protection, the collection firm would pick them up and charge the city $5 per unit, according to Alvord. "So we'll realize $5 per unit and we'll have an environmentally safe way to dispose of these appliances that have Freon in them," Alvord said.

The discussion raised the question of how residents now get rid of such appliances.

"What do we do with Freon now?" asked Councilman Bruce I. Kimmel.

According to Alvord, residents now take their Freon appliances to Lajoie's Auto & Scrap Recycling, Inc., on Meadow Street and are charged $20 per appliance. Alternatively, the city collects them as part of its bulky waste collection program. "Or, a few residents will throw them off on the side of the road, because they don't want to pay anybody to dispose of them," Alvord said.

The Public Works Committee has scheduled a public hearing on the proposed $10 drop-off fee for Tuesday, Feb. 3, at 7 p.m., in Room 231 of City Hall, 125 East Ave.

- The Hour Online, 9 January 2015, By Robert Koch

WEST ASIA

15. GIZ Supports Jordan in the Introduction of Solar Cooling Technology

At the 26 Meeting of the Parties to the Montreal Protocol held in Paris in November 2014, GIZ held a side event to provide an update about a solar cooling project in Jordan. With two demonstration installations already in place and two more to be finalized soon, the aim is to develop a strategy and action plan for economically feasible and energy efficient cooling solutions in Jordan and the Middle East region.

With a budget of €3.3 million the project "Solar Cooling for Industry and Commerce in Jordan" aims to demonstrate feasibility and suitability of solar power for refrigeration in Jordan and the region. On behalf of the German Federal Environment Ministry, GIZ is supporting the Jordanian Ministry of the Environment and the Jordanian Ministry for Energy and Mineral Resources in the implementation of the project and in establishing solar cooling as a climate friendly alternative in the region.

The demand for air conditioning is increasing rapidly especially in high ambient temperature countries like Jordan, where the number of units is expected to more than double within the next decade. At the same time the electricity prices in Jordan have increased by 75% in the last 4 years and are predicted to rise 15% per year. The current AC technology in Jordan and the Middle East is not energy efficient and relies on refrigerants with high GWP. Due to the favourable conditions for the use of concentrated solar power in the region, solar cooling seems to be the optimal solution.

First two demonstration projects feature 160kW absorption chiller

A 160kW absorption chiller developed by the Technical University in Berlin has been installed at the two demonstration sites - the German Jordan University (GJU) and Petra Guest House. The system provides both cooling and heating demands for the buildings. While the chiller is compact as compared to the previous cooling systems used, a larger roof area of 500m2 is required for the installation of solar panels.

Local technology partner, Millennium Energy Industries (MEI), installed the solar cooling systems. Engineers from MEI received a two-week training course at the beginning of the project at the TU Berlin, including visits to some project sites where the absorption chiller is installed and running.

The two demonstration projects are now being evaluated. The third and the fourth pilots will be installed at the Royal Cultural Centre in Amman and the Irbid Chamber of Commerce. 50kW (Irbid Chamber of Commerce) and 150 kW (Royal Cultural Center) absorption chillers will be installed together with a solar thermal field to support heating and cooling of the premises. The installation of the two solar cooling systems will cost around €800,000, while the two institutions will cover around 5% of this cost.

Economic feasibility of solar thermal cooling in Jordan

After the pilot project has been successfully implemented, it should become possible to apply the technology to meet all large commercial air conditioning needs in Jordan, assuming local conditions allow. The process of replication is expected to be financially sustainable due to the improvements in energy efficiency and operating expenses that the technology will bring.

While the solar collectors currently represent the highest share of total costs (around 42%), in the next 2-3 years the cost is expected to decrease by around 10%, according to the presentation by Marion Geiss of GIZ. Chillers represent another large portion (18%) of the total costs, which is expected to decrease by 20-50% as they start to be mass-produced. Even with higher investment costs, solar thermal cooling is becoming an attractive option due to its considerably lower operation costs. The payback period is highly dependent on local conditions such as electricity prices, availability of components, incentive schemes and others.

R718, 17 December 2014

FEATURED

OZONE SECRETARIAT

What's New Highlights: http://ozone.unep.org/en/in_focus.php?year=2014

- Decisions adopted by the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer at its tenth meeting and the Twenty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (Paris, 17–21 November 2014)
- Report of the 10th meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and the report of the 26th MOP - Advance copy

Montreal Protocol Meetings Dates and Venues

- Workshop on Hydrofluorocarbon Management, Bangkok, Thailand, 20 - 21 April 2015

35th Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol, Bangkok, Thailand, 22 - 24 April 2015

Progress & Quadrennial Assessment Reports:

- Environmental Effect Assessment Panel (EEAP)
- Scientific Assessment Panel (SAP)
- Technology and Economic Assessment Panel (TEAP)

THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL

- The Executive Committee of the Multilateral Fund 74th meeting is scheduled to take place in Montreal, Canada, 18 - 22 May 2015.
- The 73rd meeting of the Executive Committee of the Multilateral Fund took place 7 - 13 November 2014, Paris, France. The final report of the meeting containing the 75 decisions taken by the Committee is available as document UNEP/OzL.Pro/ ExCom/73/62 on the Multilateral Fund's web site.

The Executive Committee approved a total of US $68,784,379 including support costs for agencies for phase-out projects and activities in 62 Article 5 countries.

Learn more

OZONACTION

NEW Publications/ Factsheets Launched by OzonAction During MOP-26:


OzonAction Special Issue 2014: New Responsibilities under the HCFC Phase-out


Les bonnes pratiques en matière de climatisation individuelle


International Special Issue (2014-2015) of Refrigeration and Air-conditioning – 2015 The Year of Green Cooling


Financing the Climate Co-benefits of the HCFC Phase-out


UNEP OzonAction CAP Achievements 2014

A series of fact sheets were also launched during Side-events organized by OzonAction:

How the Montreal Protocol Protects Health

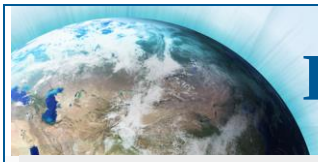
Promoting low-GWP Refrigerants for Air-Conditioning Sectors in High-Ambient Temperature Countries (PRAHA)

Adoption of a sustainable green technology approach in shoe sole production in Guanajuato, Mexico

Demonstrating the feasibility of R-290 based AC manufacturing: China's Midea and Meizhi case

Low-GWP Alternative for Small Rigid PU Foam Enterprises

Learn more about OzonAction publications and events throughout the MOP-26



EVENTS

2015

ASHRAE 2015 Winter Conference, 24-28 January 2015, Chicago, Atlanta, USA

The 2nd edition of **ATMOsphere Asia – Solutions for Asia**, 3-5 February 2015, aims to exhibit the latest natural refrigerant (CO_2, ammonia, hydrocarbons, air and water) technologies and projects applicable to the Asian market.

The Mobile Air Conditioning Society (MACS) Worldwide will hold its 2015 Training Event and Trade Show, 5-7 February 2015, Orlando, FL, USA

Climatización International Air-Conditioning, Heating, Ventilation and Refrigeration Exhibition, 24-27 February 2015, Madrid – Spain

Salon Energies Froid, 4-6 March 2015, Lyon – France

ATMOsphere Europe 2015 "Natural Refrigerants - Solutions for Europe", 16-17 March at the Crowne Plaza Le Palace Hotel, Brussels, Belgium

International Conference IIR Commission B2 with B1 and D1 / Ammonia and CO_2 - Refrigeration Technologies, 16-18 April 2015, Ohrid, Republic of Macedonia. See more events from the IIR website

REHVA Annual Meeting and Conference 2015, 6-9 May 2015, Riga, Latvia, This event will bring together leading experts from the international heating, ventilation and air condition community.

4th Annual ATMOsphere America 2015 – The Business Case for Natural Refrigerants in North America will take place on 25-26 June 2015, Atlanta, Georgia, USA

ASHRAE's 2015 Annual Conference will take place on 27 June – 1 July 2015, in Atlanta, Georgia, USA

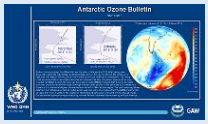
FRIGAIR Africa 2015 is a go! 3-5 June 2015, Gallaghar Estate, Midrand. South Africa. FRIGAIR 2015 Showcasing the crucial role played by the HEVAC&R industry and the rapidly developing technology in eco-friendly efficiency.

16th European Conference The Latest Technology in Air Conditioning and Refrigeration Industry with Particular Reference to F-Gas Regulation Revision, New Refrigerants, New Regulations, New Plants. 12-13 June 2015, Milano, Italy.

Congress of Refrigeration, 16-22 August 2015, Yokohama, Japan

Salon Energies Froid, 2-3 Décembre 2015, Nantes, France

READING



WMO Antarctic Ozone 2014 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: 2014

Low-GWP Alternatives in Commercial Refrigeration: Propane, CO_2 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…

Drawing down N_2O 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...

AREA Guidance on minimum requirements for contractors' training & certification on low GWP Refrigerants - AREA has updated its Guidance on minimum requirements for contractors' training & certification on low GWP Refrigerants. The revision includes an Annex II, which lists training facilities in AREA countries. The list provides website addresses and information on the type of training (theoretical and/or practical) by type of low GWP refrigerant.

Free guide to F-gas changes The European contractors association AREA has produced a timely guide to the F-gas regulations which clarifies the new rules, their impact and their practical application… Read more

Why Did Global Warming Stop in 1998? Because global warming is caused by ozone depletion, not by greenhouse gases. A brief introduction for non-specialists. The science behind these conclusions is described in detail on ozonedepletiontheory.info Author: Dr. Peter L. Ward, U. S. Geological Survey, retired, Teton Tectonics

Loopholes & ODS illegal trade threaten ozone layer recovery. EIA's latest briefing **New Trends in ODS Smuggling** highlights the growing threat of illegal trade in ozone depleting substances (ODS).

Primer on Hydrofluorocarbons, Fast action under the Montreal Protocol can limit growth of HFCs, prevent up to 100 billion tonnes of CO_2-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 Grabiel. 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.

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. …

Extensive Distribution Network in Place to Support **Accelerating Adoption of HFO-1234yf Refrigerant**, which is Expected to be in 7 Million Cars by End of 2015

Retrofit Guidelines for Stationary Refrigeration Converting R-404A/R-507 Systems to Opteon® XP40 (R-449A) Refrigerant

Global Automotive HVAC Market 2015-2019 - The analysts forecast the Global Automotive HVAC market to grow at a CAGR of 7.72 percent over the period 2014-2019. Covered in this Report: The Global Automotive HVAC market can be segmented into two divisions: Manual HVAC Systems and Automatic HVAC Systems. The report, Global Automotive HVAC Market 2015-2019, has been prepared based on an in-depth market analysis with inputs from industry experts. The report covers the Americas, and the EMEA and APAC regions; it also covers the Global Automotive HVAC market landscape and its growth prospects in the coming years. The report also includes a discussion of the key vendors operating in this market.

MISCELLANEOUS

AIRAH "Calculating Cool Online HVAC Tool" Imagine if there was a way of ranking different HVAC systems during design, installation and operation. And what if this method was freely available online and able to be used to drive improvement? Following the official launch of the Calculating Cool online benchmarking tool it's now possible for building owners and operators, HVAC industry professionals, facility managers and other stakeholders to measure the efficiency of a variety of HVAC systems.

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…

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.

The Montreal Protocol Who's Who

Learn more and nominate Ozone Layer Protection Champion from your Country /Region **>>**

http://www.unep.fr/ozonaction/montrealprotocolwhoswho

Follow OzonAction on:

http://www.facebook.com/ozonaction

http://www.slideshare.net/ozonaction

http://twitter.com/ozonaction

http://www.youtube.com/ozonaction

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

To unsubscribe, send a blank message to samira.degobert@unep.org with 'unsubscribe OzoNews' as the subject.