See online

In this issue:

Global

1. World Refrigeration Day. Get ready... Something really "cool" is coming

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

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

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

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

Striving to give generations to come confidence in their future, a World Refrigeration Day would also be the hallmark to say “Everyone’s included!”

Find out what initiatives are being organised worldwide to celebrate the first World Refrigeration Day on 26 June 2019.

The International Institute of Refrigeration (IIR)

2. Four things you should know about sustainable cooling

This story is part of a series that will run ahead of the third edition of the Innovate4Climate (I4C): the preeminent global event on climate finance, climate investment and climate markets. I4C will take place in Singapore from 4-7 June 2019. It brings together business, finance, policy and technology leaders to accelerate action on financing climate-smart development. This edition will focus on green finance, clean cooling, battery storage, climate-smart urban design, Asian climate markets and much more. Watch the live streaming of the Summit on June 6th and use the #Innovate4Climate hashtag to join the conversation and get the latest updates.

- First, cooling is vital for both health and prosperity
- Second, business-as-usual cooling will be a disaster for the planet
- Third, getting cooling right is a major opportunity
- Fourth, Asia will be key for the development of sustainable cooling technologies

[...] Cooling contributes to climate change by increasing demand for electricity, much of which is still generated from fossil fuels, and through leakage of refrigerants, which have a much higher global warming potential than CO_2 emission. Conventional cooling devices – such as refrigerators, room air conditioners, industrial scale chillers, and other devices – account for as much as 10% of all global greenhouse gas emissions, which is more than twice the emissions generated from aviation and maritime combined. Furthermore, if left unchecked, emissions from cooling are expected to double by 2030 and triple by 2100, driven by heat waves, population growth, urbanization, and a growing middle class. Business-as-usual cooling generates a vicious cycle: as the world gets hotter, increased demand for cooling drives up levels of greenhouse gas emissions that, in turn, drive up temperatures and make access to cooling even more critical, all while endangering human safety and livelihoods.

[...] Done right, efficient, affordable and sustainable cooling in developing countries can help alleviate poverty, reduce food loss, improve health, manage energy demand, and combat climate change. It has the potential to advance the internationally agreed goals of the Paris Climate Agreement; the Sustainable Development Goals; and the Montreal Protocol’s Kigali Amendment. For instance, just halving food loss with refrigeration and food cold chains could feed 1 billion undernourished people.

There are investment opportunities in bringing sustainable cooling solutions to market, and there are cost saving opportunities in commercial and industrial facilities by installing efficient cooling equipment.

What will it take? On the demand side, policies and regulations must be put in place to reduce the need for cooling in residential, commercial and industrial buildings. Better thermal efficiency of buildings, for instance through improved insultation, increased air flow, and cool roofs, greatly reduces the mechanical cooling that is needed. Policy tools can also improve urban planning, for instance expand green spaces in cities. Incentives can be used to change people's behavior towards less use of cooling and greater interest in using energy efficient appliances.

There is also a need to make cooling applications in transport and logistics more efficient and climate-friendly while providing greater access to cold chains for safe transport for food and medicine, which benefits both rural and urban populations.

Governments can incorporate sustainable cooling in their climate pledges (Nationally Determined Contributions) and ensure that sustainable cooling considerations are included in energy, urban, transport, agricultural and health service projects among others. On the supply side, governments can act swiftly to encourage manufacturers to improve the energy efficiency of their cooling products and to lower the global warming potential of refrigerants in line with or exceeding the obligations under the Montreal Protocol. Governments can put in place minimum energy performance standards and labeling schemes for air conditioners. They can help reduce the cost of more efficient equipment by promoting mass purchasing and deployment and promote training of cooling technicians, better equipment maintenance and new financing and business models to deliver cooling services. And governments can ramp up the generation and use of renewable energy, including through thermal storage solutions in supermarkets and large buildings to better manage peak electricity demand. [...]

Innovate4Climate (I4C)

The World Bank, 23 may 2019

3. ASHRAE launches new refrigeration webpage

ASHRAE announced the launch of a webpage to encourage the advancement of refrigeration technology and its application.

The new Refrigeration webpage, referred to as the "R" in ASHRAE, highlights the Society's commitment to supporting the role of refrigeration worldwide. The webpage features resources information and publications concerning refrigeration and refrigerants such as standards, design guides, ASHRAE courses and more.

During her term, 2018-2019 ASHRAE President Sheila J. Hayter, P.E., appointed ASHRAE Region IX Director and Regional Chair Trent Hunt to oversee a Board Task Group on Refrigeration. One of the primary outcomes of this task group was the release of the refrigeration page.

"ASHRAE has a longstanding history of supporting refrigeration research and technology," said Hayter. "This page incorporates ASHRAE's past in refrigeration, while keeping visitors abreast of our current objectives and leads the conversation on the future of refrigeration. We are confident that this page will be a powerful resource to industry professionals and the general public alike."

Additional features of the webpage include:

- ASHRAE endorsed conferences and events covering refrigeration and refrigerants
- Refrigerant designations
- Interviews with members in the field of refrigeration
- Research and news on refrigeration-related topics

Recently, ASHRAE and the International Institute of Refrigeration (IIR) announced the establishment of new definitions for five refrigeration keywords, further emphasizing the importance of the refrigeration process to the health, comfort, and welfare of humanity.

ASHRAE Refrigeration page

ASHRAE, 16 May 2019

4. A warming Arctic produces weather extremes in our latitudes

Atmospheric researchers at the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI) have now developed a climate model that can accurately depict the frequently observed winding course of the jet stream, a major air current over the Northern Hemisphere.

The breakthrough came when the scientists combined their global climate model with a new machine learning algorithm on ozone chemistry. Using their new combo-model, they can now show that the jet stream's wavelike course in winter and subsequent extreme weather conditions cold air outbreaks in Central Europe and North America are the direct result of climate change. Their findings were released in the Nature online portal Scientific Reports on 28 May 2019. [...]

Machine learning allows climate model to grasp the role of ozone

These fundamental connections have been known for some time. Nevertheless, researchers hadn't succeeded in realistically portraying the jet stream's wavering course in climate models or demonstrating a connection between the faltering winds and global climate change. Atmospheric researchers at the AWI in Potsdam have now passed that hurdle by supplementing their global climate model with an innovative component for ozone chemistry. "We've developed a machine learning algorithm that allows us to represent the ozone layer as an interactive element in the model, and in so doing, to reflect the interactions from the stratosphere and ozone layer," says first author and AWI atmospheric researcher Erik Romanowsky. "With the new model system we can now realistically reproduce the observed changes in the jet stream."

According to the team's findings, sea-ice retreat and the accompanying increased activity of atmospheric waves are creating a significant, ozone-amplified warming of the polar stratosphere. Since the low polar temperatures form the jet stream's motor, the rising temperatures in the stratosphere are causing it to falter. In turn, this weakening of the jet stream is now spreading downward from the stratosphere, producing weather extremes. [...]

ScienceDaily, 28 May 2019

Africa

5. Namibia ratifies Kigali amendment to protect ozone layer

Namibia has ratified the Kigali Amendment as a member of the Montreal Protocol, which sought to control and phase out ozone-depleting substances, effective 16 May this year. [...]

Speaking at a media conference here on Thursday, Deputy Minister of Industrialization, Trade and SME Development, Lucia Iipumbu said the amendment was necessitated by the replacement of hydrochlorofluorocarbons with hydrofluorocarbons, of which have shown an increasing consumption rate in the country.

Iipumbu said the replaced substances are not harmful to the ozone layer, however have a high global warming potential, therefore parties to the Montreal Protocol have proactively risen to address the challenge by adopting the 28th Kigali amendment in 2016.

“ We believe that the ratification to the amendment will not only benefit the global climate but a large proportion of the population that have limited means of adaptation to the threats of climate change,” she said. Iipumbu noted that the government is confident that the details of the amendment will address the challenges that were raised during the meeting of the parties to the

Montreal Protocol, which include issues of capacity, awareness raising, technology adoption and availability of alternative technologies. [...]

Iipumbu said Namibia was the first African country to have totally phased out chlorofluorocarbons, halons and methyl bromide in 2008, adding that the country remains committed to eliminating hydrochlorofluorocarbons in all sectors during the period of 2012 to 2020. “ The phase out schedule for Namibia is based on an accelerated approach under the Montreal Protocol owing it to the commitment as the hydrochlorofluorocarbons consumption has drastically been reduced by 80 per cent from the baseline,” she said.

She further noted that as a management tool, Namibia enacted hydrochlorofluorocarbons regulations prohibiting importation of equipment designed using hydrochlorofluorocarbons and established a quota system aimed at controlling, maintaining records as well as ensuring the reduction of such products is achieved.

LELA, 23 May 2019

6. Botswana fights importation of illegal ozone depleting substances

The Botswana Unified Revenue Services (BURS) and Ministry of Environment Natural Resources Conservation and Tourism (MENT) have partnered to fight illegal importation of Ozone Depleting Substances (ODS).

The Ministry, through the Department of Meteorological Services (DMS) handed over, eight refrigerant identifiers to the BURS which will be used at ports of entry to test gases imported into the country in order to combat illegal trade of prohibited ODS which may be disguised as ozone friendly.

The purchasing of the gadgets is a step in the implementation of the requirements of the Montreal Protocol of 1987, that controls the production and consumption of ODS. Botswana became party to the protocol in 1992.

Speaking at the handing over ceremony, the Deputy Permanent in the Ministry, Felix Monggae highlighted that Botswana has since 1992 participated in the implementation of the Montreal protocol and that ODS are gases used in refrigeration, air conditioners, fire extinguishers, pest controllers and aerosol applications.

“As a party to the protocol, Botswana has to do its part in assisting international community to save the ozone layer and ensure proper and effective regulation of these gases particularly their importation into Botswana,” said Monggae. He added that this objective cannot be achieved without the involvement of Customs officers.

It is for that reason he said, that the ministry continues to build their capacity to create understanding of international obligations, provide them with means of implementation as well as coordinate reporting with them. He in effort to show commitment to the international obligation and to create an enabling environment for implementation of the protocol, Botswana adopted ODS Regulations in 2014. The regulations in turn established licensing system covering both import and export of ODS to help monitor their quantities as they entered and left Botswana borders. Under the same regulations all traders of ODS are required to obtain an import permit from the DMS.

“This is one of the reasons we forged partnership with BURS and to date, about 90 percent of Customs officers have been trained countrywide on the identification of ODS at ports of entry. We took it upon ourselves to train them and not just leave it to them since it is their job to control movement of goods in and out of the country. This will go a long way in facilitating the legal entry and curb the illegal entry into the country of ODS,” he said.

DMS Acting Director, Balisi Gopolang underpinned that his department has engaged a team of experts to ensure the machines are professionally maintained. He said the department has not yet constructed a warehouse where confiscated items can be kept, but plans are underway.

Phodiso Valashia, Acting Commissioner General of BURS acknowledged the handing over of the machines by ascertaining that legislation is already in place for the utilization of the machines and they are to be utilized forthwith.

The refrigerant identifiers that cost around P301 000 are part of the Montreal protocol’s multilateral Fund. It is being implemented by United Nations Industrial Development Organization (UNIDO), United Nations Environment Program (UNEP) and United Nations Development Program (UNDP).

Sunday Standard Reporter, 26 May 2019, By: Arnold Letsholo

Latin America and Caribbean

7. Capacitan técnicos del sector refrigeración y aires acondicionados sobre refrigerantes naturales (Costa Rica)

Instructores de los centros de formación del Instituto Nacional de Aprendizaje (INA), personal de la Fundación Samuels, los Colegios técnicos profesionales del Ministerio de Educación Pública, y el Colegio Cedes Don Bosco recibirán a partir del 27 de mayo y durante una semana, un entrenamiento con instructores internacionales sobre el Uso seguro de hidrocarburos (R290 Y R600a) como refrigerantes y competencias Soldaduras.

La actividad contará con instructores de Centroamérica, Panamá, Paraguay y Venezuela. Además asistirán el Sr. José L. Vázquez Otero del HEAT en España y Fernando del Castillo del SENA de Colombia.

El entrenamiento busca fortalecer y desarrollar las capacidades de los instructores de los distintos centros de formación asociados al sector RAC con relación a la instalación, mantenimiento y reparación de tecnologías que utilicen refrigerantes naturales, con potencial de agotamiento de capa de ozono cero y de bajo potencial de calentamiento global. El entrenamiento, que dura una semana, se repetirá con dos grupos más en las dos semanas siguientes. En total se beneficiarán 48 instructores en el país, de los que se espera un efecto multiplicador con la capacitación recibida.

Además de la capacitación, cada centro de formación técnica recibirá equipos de aire acondicionado, refrigeración y herramientas específicas para el uso de hidrocarburos, con el fin de que repliquen el entrenamiento brindado.

Estos entrenamientos se enmarcan dentro de las actividades desarrolladas por el Proyecto Contribuciones frescas para combatir el cambio climático (C4), ejecutado por la Dirección de Gestión de Calidad Ambiental del Ministerio de Ambiente y Energía. Además contó con el apoyo y colaboración del Núcleo eléctrico del INA, la Cooperación Alemana y su agencia de implementación la GIZ y el Programa de Naciones Unidas para el Desarrollo (PNUD) como agencia implementadora del Fondo Multilateral del Protocolo de Montreal, quien también colaboró en la donación de los equipos y herramientas a los centros de formación.

Dirección de Gestión de Calidad Ambiental, Costa-Rica, 27 May 2019

North America

8. Washington State Passes Climate Bill to Restrict Certain Uses of HFCs

THE
NATIONAL LAW REVIEW

May 29, 2019

Washington State Passes Climate Bill to Restrict Certain Uses of HFCs

Thursday, May 23, 2019

Following California's lead, Washington State has revived, at the state level, federal limits on greenhouse gases known as hydrofluorocarbons (HFCs) and is contemplating additional restrictions in the future. HFCs are synthetic gases that are used in a variety of applications, but mainly to replace ozone-depleting substances in aerosols, foams, refrigeration, and air-conditioning.

In late April, Washington's legislature passed HB 1112. Governor Inslee signed the bill into law on May 7, 2019. The core section of HB 1112 adopts as state law the content of EPA's Significant New Alternatives Policy (SNAP) Rules 20 and 21 (40 CFR Part 82, Appx. U and V) before they were largely vacated by the D.C. Circuit in two decisions. See *Mexichem Fluor, Inc. v. EPA*, 866 F.3d 451 (D.C. Cir. 2017) (vacating Rule 20); *Mexichem Fluor, Inc. v. EPA*, No. 17-1024 (D.C. Cir. Apr. 5, 2019) (vacating Rule 21). EPA's SNAP rules determine what chemicals may be used to replace ozone-depleting substances (ODS) for specific end uses, such as vending machine refrigeration. In 2015 and 2016, EPA determined that specific HFCs (which are not ODS but have high global-warming potential) may no longer be used to substitute ODS for several end uses, such as motor vehicle air conditioning, retail food refrigeration, aerosol propellants, and vending machines. Those federal rules were then partially vacated in litigation; the current Administration subsequently suspended the application of SNAP Rule 20 with respect to HFCs entirely and is expected to do the same with respect to Rule 21.

Companies that produce or use HFCs, HFC-containing products or HFC-based refrigerants should carefully review HB 1112 and EPA's SNAP Rules 20 and 21 to determine if their products or equipment use any listed HFC in any of the regulated end uses.

Washington's law also sets the stage for further HFC restrictions. Section 8 of HB 1112 requires the Department of Ecology to complete a report by December 1, 2020, that addresses "how to increase the use of refrigerants with a low global warming potential in mobile sources, utility equipment, and consumer appliances, and how to reduce other uses of hydrofluorocarbons in Washington." Section 9 also requires Ecology to establish purchasing and procurement preferences for non-HFC products. Therefore, even if your specific HFC is not in SNAP Rules 20 or 21, or these rules do not cover your end uses, pay attention to Ecology's report in 2020 to determine if your equipment or products may be affected by future state programs. Full bill history is available here.

National Law Review, 23 May 2019

9. Vermont Joins HFC Phase-Down Club

Painting by James Hope

The Green Mountain State is the latest to join the club of states taking action to phase down the super climate pollutants called hydrofluorocarbons (HFCs).

On May 21st Vermont's legislature adopted S.30, HFC-reducing legislation patterned on laws already in place in California and Washington State. New York, Maryland, and Connecticut have committed to adopt these HFC limits under their existing air pollution laws. Other states in the 24-member U.S. Climate Alliance, are expected to follow suit.

HFCs are chemicals used in refrigeration, air-conditioning, insulating foams, and aerosols. They are extraordinarily potent climate pollutants, with hundreds to thousands of times the heat-trapping power of CO_2. As a result, even small concentrations of HFCs in the atmosphere can significantly harm the planet. And HFC atmospheric concentrations have been rising rapidly as HFC use has grown.

The good news is that curbing HFCs can bring climate relief relatively quickly. Once released in the atmosphere, HFCs decompose within a few months to a couple of decades, as compared with CO_2, which lasts for well over a

century. This is why HFCs are called short-lived climate pollutants (SLCPs). Phasing down HFC use globally can avoid an additional quarter to half degree Celsius of warming by 2100. (That's huge when you're trying to hold overall warming below 1.5 or 2.0 degrees C.)

Like California's and Washington's laws and the regulations under development in other states, Vermont's new law will prohibit the use of HFCs in major applications where there are safer alternatives. The rules mirror EPA rules issued during the Obama administration, but that were partially struck down by a federal court that found a gap in EPA's authority under the Clean Air Act (see here). The states, operating under their own laws, are now filling the gap to keep the HFC transition on schedule.

The states' HFC transition schedule is based on EPA and industry assessments of companies' ability to transition to safer alternatives. The restrictions apply to new equipment. They do not require anyone to replace existing products that are still in working order.

Reducing HFC emissions is low-hanging fruit. Alternative technologies are already available for the end-uses covered by the new Vermont legislation and a nationwide transition to climate-friendly alternatives will boost the competitiveness of American companies in the global market while significantly benefiting the climate.

A nationwide transition to climate-friendly refrigerants will come at no extra cost to consumers and industry has estimated that a U.S. HFC phasedown will add $5 billion annually in U.S. exports and create approximately 150,000 new jobs nationwide. In addition, the climate-friendly alternatives are often more energy efficient than their predecessors. It thus comes as no surprise that HFC regulations enjoy wide support from both industry stakeholders and the environmental community.

State leadership is keeping our country's HFC transition on the rails, and is keeping the U.S. in sync with the global phase-down now underway under the Kigali Amendment to the Montreal Protocol, the treaty that saved the ozone layer. It's is time for other states to climb aboard the HFC train. Let's see which one goes next.

NRDC, 22 May 2019, By: David Doniger

10. Data in the driver's seat: leak patterns in observed data and how it can help reduce emissions - US EPA GreenChill upcoming webinar

Topic: Data in the Driver's Seat: Leak Patterns in Observed Data and How it Can Help Reduce Emissions

Date: Tuesday, June 4, 2019
Time: 2:00 pm to 3:00pm (Eastern time)

Description: Jason Ayers (Parasense) and Jeff Rupert (Fazio Mechanical) will present on patterns in leak data from over 2.8 billion refrigerant leak samples. This webinar looks at five distinct leak event characteristics, including what equipment owners and contractors should look out for to spot leaks and drive down refrigerant emissions.

To join the webinar:
1. Visit the webinar access page: Data in the Driver's Seat: Leak Patterns in Observed Data and How it Can Help Reduce Emissions
2. Select "Enter as a Guest". It is important that you select the option to enter as a guest.
3. Enter your name.
4. Click "Enter Room".
5. Click "OK".

For audio:
1. Call the toll free call-in number: 1-866-299-3188 (706-758-1822 from outside the U.S.)
2. Use Conference Code: 202 343 9185#

Asia Pacific

11. Increase in CFC-11 emissions from eastern China based on atmospheric observations

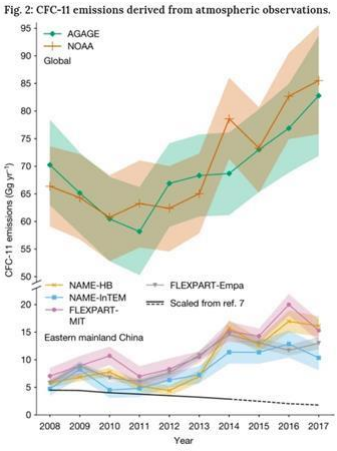


Fig. 2: CFC-11 emissions derived from atmospheric observations.

Abstract

The recovery of the stratospheric ozone layer relies on the continued decline in the atmospheric concentrations of ozone-depleting gases such as chlorofluorocarbons[1].

The atmospheric concentration of trichlorofluoromethane (CFC-11), the second-most abundant chlorofluorocarbon, has declined substantially since the mid-1990s[2].

A recently reported slowdown in the decline of the atmospheric concentration of CFC-11 after 2012, however, suggests that global emissions have increased[3,4].

A concurrent increase in CFC-11 emissions from eastern Asia contributes to the global emission increase, but the location and magnitude of this regional source are unknown[3]. Here, using high-frequency atmospheric observations from Gosan, South Korea, and Hateruma, Japan, together with global monitoring data and atmospheric chemical transport model simulations, we investigate regional CFC-11 emissions from eastern Asia. We show that emissions from eastern mainland China are 7.0 ± 3.0 (±1 standard deviation) gigagrams per year higher in 2014–2017 than in 2008–2012, and that the increase in emissions arises primarily around the northeastern provinces of Shandong and Hebei.

This increase accounts for a substantial fraction (at least 40 to 60 per cent) of the global rise in CFC-11 emissions. We find no evidence for a significant increase in CFC-11 emissions from any other eastern Asian countries or other regions of the world where there are available data for the detection of regional emissions.

The attribution of any remaining fraction of the global CFC-11 emission rise to other regions is limited by the sparsity of long-term measurements of sufficient frequency near potentially emissive regions.

Several considerations suggest that the increase in CFC-11 emissions from eastern mainland China is likely to be the result of new production and use, which is inconsistent with the Montreal Protocol agreement to phase out global chlorofluorocarbon production by 2010.

1 Harris, N. R. P. & Wuebbles, D. J. in Scientific Assessment of Ozone Depletion: 2014 Ch. 5, 416 (World Meteorological Organization, 2014).Return to ref 1 in article
2 Carpenter, L. J. & Reimann, S. in Scientific Assessment of Ozone Depletion: 2014 Ch. 1 (World Meteorological Organization, 2014).
3 Montzka, S. A. et al. An unexpected and persistent increase in global emissions of ozone-depleting CFC-11. Nature 557, 413–417 (2018).
4 Prinn, R. G. et al. History of chemically and radiatively important atmospheric gases from the Advanced Global Atmospheric Gases Experiment (AGAGE). Earth Syst. Sci. Data 10, 985–1018 (2018).

Nature 569, 546–550 (2019), 22 May 2019, M. Rigby, S. Park, […]D. Young

12. Online administrative procedures includes ODS import license (Vietnam)

The Ministry of Industry and Trade has moved to put more public administrative services online towards a more simplified and transparent administration. (Photo: dichvucong.moit.gov.vn)

The Ministry of Industry and Trade has moved to put more public administrative services online towards a more simplified and transparent administration. [...]

the ministry has 11 administrative procedures connected to the National Single Window (NSW), comprising the granting of import license for ozone-layer depleting pre-substances [...]

By 2020, all of the import-export administrative procedures will be handled through the system. [...]

Vietnam, 28 May 2019

Europe & Central Asia

13. Flammable refrigerants: The International Electrotechnical Commission approves the charge increase in commercial refrigeration

The International Electrotechnical Commission (IEC) is in charge of standardization in the fields of electricity, electronics, electromagnetic compatibility, nanotechnology and related technologies. Its work is complementary to that of the International Organization for Standardization (ISO), specialists in all other fields.

The flammable refrigerant charge of commercial refrigeration appliances with an incorporated unit is currently ruled by IEC 60335-2-89. The charge is currently limited to 150 grams.

Since 2014, a working group has been elaborating a proposal to raise this load to 500 grams for "highly flammable" refrigerants (classified A3) and 1200g for "flammable" (A2) or "mildly flammable" (A2L) refrigerants. In July 2018, the National Committees voted 75% in favor of this proposal, whose vote was submitted to the various CIS member countries in March and April 2019. [...]

In early May, the IEC announced that the measure was finally adopted. [...]

Commercial refrigerating appliances with an incorporated unit should therefore now be able to use flammable type A and A2 / A2L refrigerants with respective loads of 500g and 1200g.

This is an important step that can contribute to the progressive reduction of HFCs, and also respects the Kigali Amendment and the European F-Gas Regulation.

The International Institute of Refrigeration (IIR), 29 May 2019

14. Meeting on new international regulations related to ozone layer (Armenia)

On 20 May 2019 a working meeting “New regulations under the Kigali amendment” was held at the UN Office. The meeting was supported by UNIDO and dedicated to the ratification of the Kigali amendment by the Republic of Armenia, which took place on 27 March 2019 and the country obligations stemming from the ratification.

During the meeting the participants were briefed on the background of the Kigali Amendment to the Montreal Protocol “On Substances that Deplete the Ozone Layer”, the process of international negotiations, the adoption of the Kigali Amendment at the 28th meeting of the Parties in 2016 and the ratification process in the Republic of Armenia.

The importance of awareness-raising activities for wider public and specialized sectors was highlighted, and the planned series of awareness raising workshops on “Energy efficiency in the RHVAC (Refrigeration, Heating, Ventilation, & Air Conditioning Technology) sector” were presented. Within the framework of the obligations stemming from the ratification, the inclusion of Hydrofluorocarbons (HFCs) in the Licensing System was introduced, to be implemented electronically, and the need to amend the Law of the Republic of Armenia “On Substances that Deplete the Ozone Layer”.

In addition to the obligations, the importance of adopting standards in the areas of cooling and air conditioning was underlined presenting the current status of EN 378, Part 3, and Part 4 adoption in Armenia. In the last session the meeting the first draft law "On Protection of the Ozone Layer" was presented, followed by a thematic

discussion. The participants made several proposals that will be taken into consideration in finalizing the draft law.

The participants of the meeting were: UNIDO Country Representative Anahit Simonyan, representatives of the State Revenue Committee, National Institute of Standards, Yerevan State University, Climate Change Program, Ozone Program .

United Nations, Armenia, 20 May 2019

15. Hotline receives over 50 illegal activity reports

The EFCTC's confidential Action Line is said to have made a "promising" start with over 50 reports of illegal refrigerant activity received since its launch in March.

The dedicated reporting service was introduced in response to the increase in illegal refrigerant imports and trade as a result of the European F-gas phase down. It provides a much-needed "hotline" particularly for those in member states where no such mechanism exists or where whistleblowers have confidentiality concerns.

The Action Line is operated by a specialised independent consultant, but EFCTC has been informed that over 50 submissions of reports about possible illegal trade activities have been reported so far.

The EFCTC also says that functionality of the Action Line is being improved and technical issues identified during its initial use are being addressed.

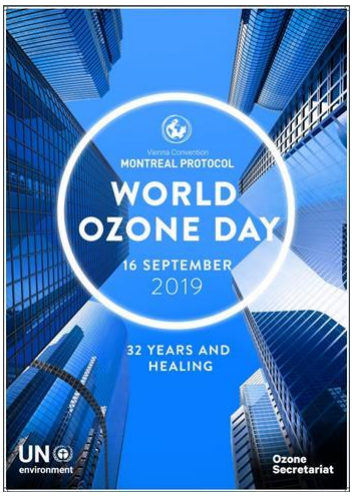
A new leaflet explaining the areas of F-Gas Regulation activity that are being affected has also been produced by the EFCTC. The leaflet is available here.

CoolingPost, 28 May 2019

Featured

OZONE SECRETARIAT

32 Years and Healing -
Theme for World Ozone Day 2019



• 62nd Meeting of the Implementation Committee under the Non-Compliance Procedure of the Montreal Protocol, 29 June 2019, Bangkok, Thailand
• 41st Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol,1 - 5 July 2019, Bangkok, Thailand
• 63rd Meeting of the Implementation Committee under the Non-Compliance Procedure of the Montreal Protocol, 2 November 2019, Rome, Italy
• Bureau Meeting of the 30th Meeting of the Parties to the Montreal Protocol, 3 November 2019, Rome, Italy
• 31st Meeting of the Parties to the Montreal Protocol, 4 - 8 November 2019, Rome, Italy

Click here for Montreal Protocol upcoming Meetings Dates and Venues

Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, Status of Ratification 15 October 2016 to date

The UN Environment Assessment Panels

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

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

The Technology and Economic Assessment Panel

The Scientific Assessment Panel

The Environmental Effects Assessment Panel

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

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

THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL

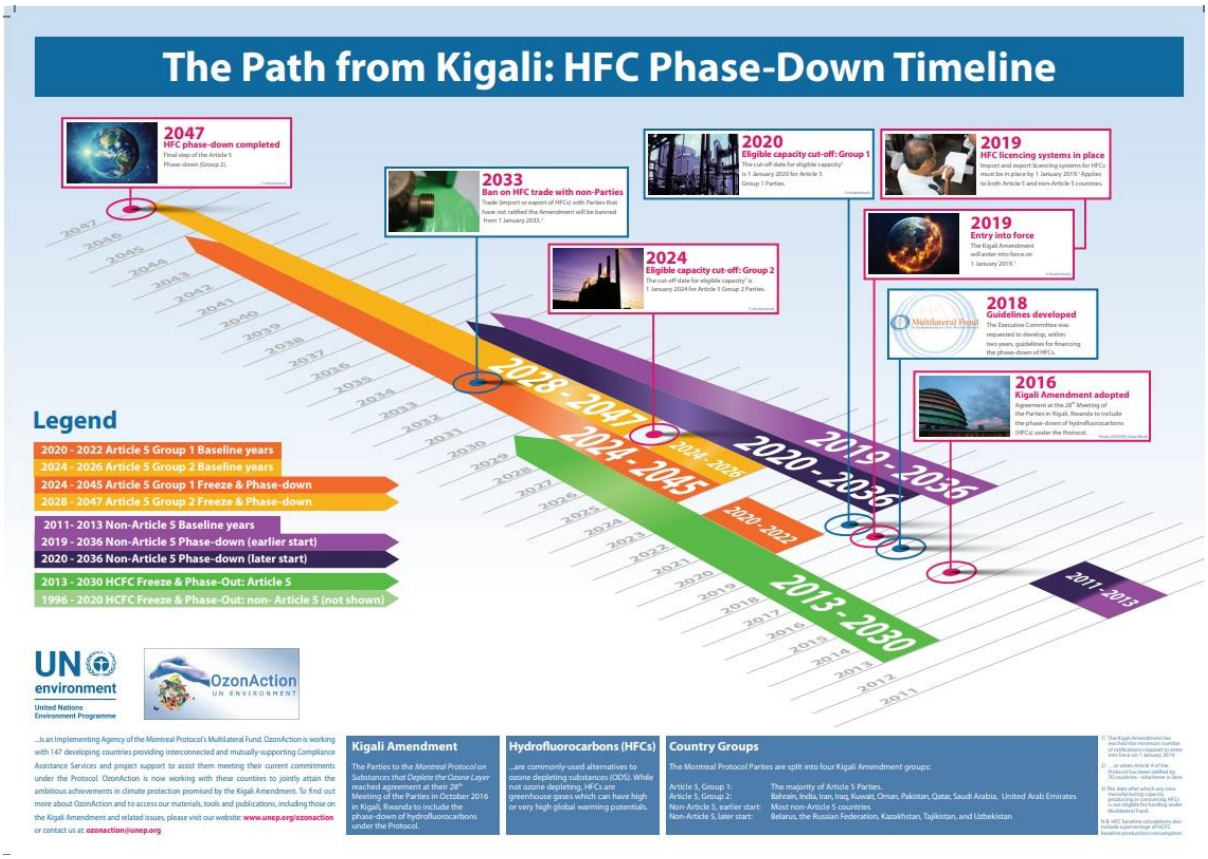
- 83rd meeting of the Executive Committee
- 82nd meeting of the Executive Committee

Learn more

OZONACTION

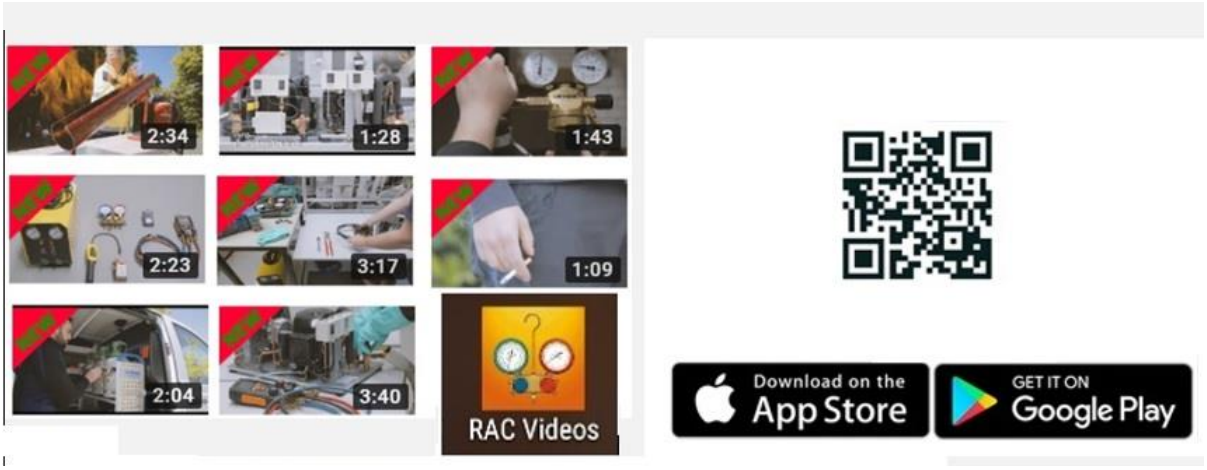
Post-Meeting Feedback Survey - OzonAction Second Global Inter-Regional and Parallel Network Meetings for National Ozone Officers, 17-20 February 2019.

Read/Download: Meeting report | Full survey report



The Path from Kigali: HFC Phase-Down Timeline

This timeline, produced by OzonAction, highlights key hydrofluorocarbons (HFCs) phase-down dates.
Click here to download the timeline



New videos available on the OzonAction RAC video application

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

50,000 downloads and counting!

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

GWP-ODP Calculator Smartphone Application

The application allow you to easily convert ODP, CO_2-eq and metric quantities of refrigerants and other chemicals.

• Helps in understanding and reporting under the Montreal Protocol (and future commitments under the Kigali Amendment)

• The calculator will automatically perform the conversion between metric tonnes, ODP tonnes and/or CO_2-equivalent tonnes (or kg) and display the corresponding converted values

• The app includes both single component substances and refrigerant blends

• The components of a mixture and their relative proportions (metric, ODP, CO_2-eq) are also displayed.

Available for free from the Apple IOS store and
Google PlayStore. Search for “GWP ODP CALC” in the Playstore to install!

Download it Now!

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

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

OzonAction Smartphone Application WhatGas?

Available for free in the Google Play and Apple IOS Store

Scan the QR code or search for “UNEP”, “OzonAction” or “WhatGas?”

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

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

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

OzonAction YouTube | See also: United Nations Treaty Collection

OzonAction Factsheets

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

OzonAction Series of 19 Fact Sheets related to the Kigali Amendment.

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

The Kigali Amendment to the Montreal Protocol: HFC Phase-down - The phase-down of HFCs under the Montreal Protocol on Substances that Deplete the Ozone Layer has been under negotiation by the Parties since 2009 and the successful agreement on the Kigali Amendment at the 28th Meeting of the Parties on 15 October 2016 in Kigali, Rwanda to phase-down hydrofluorocarbons (HFCs) continues the historic legacy of the Montreal Protocol. This factsheet summarises and highlights the main elements of the Amendment of particular interest to countries operating under Article 5 of the Protocol (Article 5 Parties).

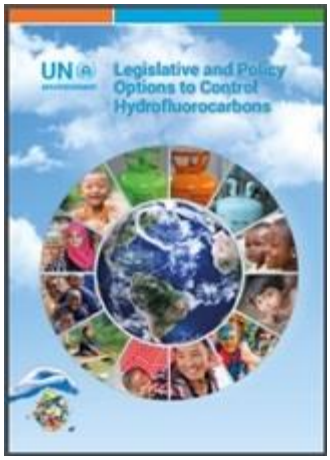
Refrigerant Blends: Calculating Global Warming Potentials (post-Kigali update).
Global Warming Potential (GWP) of Refrigerants: Why are Particular Values Used? (post-Kigali update).
Tools Commonly used by Refrigeration and Air-Conditioning Technicians.

OzonAction Multimedia Video Application: Refrigeration and Air-conditioning Technician Video Series - Over 50,000 downloads to date - OzonAction has launched an exciting new application which hosts series of short instructional videos on techniques, safety and best practice for refrigeration and air-conditioning technicians.
This application, consisting of short instructional videos on techniques, safety and best practice, serves as a complementary training tool for refrigeration and air-conditioning (RAC) sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training.

New videos on flammable refrigerants just added!
Please share with your RAC associations, technicians and other interested stakeholders…

OzonAction Multimedia Video Application: Refrigeration and Air-conditioning Technician Video Series
Available in the Android Play Store and Apple Store/**iTunes.**
(Just search for "OzonAction", or scan this QR code)

Publications



Legislative and Policy Options to Control Hydrofluorocarbons
In order to follow and facilitate the HFC phase-down schedules contained in the Kigali Amendment, the Parties, including both developed and developing countries, will have to implement certain measures.
This booklet contains a recommended set of legislative and policy options which the developing (Article 5) countries may wish to consider for implementation. It is intended to be a guide/tool for countries.

Latest issue of the Centro Studi Galileo - Industria & Formazione. La rivista per il tecnico della refrigerazione e della climatizzazione, N. 4, 2019

Events

2019

• EUREKA 2019, 11 -12 June 2019, Bruges, Belgium. One of the leading events for heating, cooling and ventilation.

• IOR Annual Conference - Refrigerant Safety and Risk Assessment Requirements, 12 June 2019, Birmingham, UK. This one day conference will improve the knowledge and understanding of those attending in the important areas of refrigerant safety and risk assessments.

• World Refrigeration Day, 26 June 2019. Join in events globally that will celebrate World Refrigeration Day

• 25th IIR International Congress of Refrigeration - 24-30 August 2019, Montreal, Canada

Click here for more information / International Institute of Refrigeration

Please feel free to share with us relevant events.

Reading

Twenty Questions and Answers About the Ozone Layer, presents complex science in a straightforward manner. It complements the 2014 Scientific Assessment Report of Ozone Depletion by WMO and the U.N. Environment Programme.
Lead Author:
Michaela I. Hegglin
Coauthors:
David W. Fahey, Mack McFarland, Stephen A. Montzka, Eric R. Nash

Primer on Hydrofluorocarbons (HFCs) - IGSD -11 January 2018
Summary:
Fast action under the Montreal Protocol can limit growth of hydrofluorocarbons (HFCs), prevent 100 to 200 billion tonnes of CO_2-eq by 2050, and avoid up to 0.5°C of warming by 2100.
Lead authors:
Durwood Zaelke, Nathan Borgford-Parnell, and Stephen O. Andersen.
Contributing authors:
Kristin Campbell, Xiaopu Sun, Dennis Clare, Claire Phillips, Stela Herschmann, Yuzhe Peng Ling, Alex Milgroom, and Nancy J. Sherman.

The IIR International Dictionary of Refrigeration Available in 11 languages, the complete version of the International Institute of Refrigeration (IIR) International Dictionary of Refrigeration is now freely accessible online. The IIR International Dictionary of Refrigeration offers researchers, industrialist or administrations the practical resources required to produce content related to

refrigeration technologies in multiple languages.
This online tool allows you to find definitions, in English and French, of scientific and technical terms, as well as identify terms in the language of your choice and find corresponding translations in the 10 other languages.
The dictionary provides term searches in Arabic, Chinese, Dutch, English, French, German, Italian, Japanese, Norwegian, Russian and Spanish.
Access the International Dictionary of Refrigeration on the IIR website

Impact of Standards on Hydrocarbon Refrigerants in Europe – Market research report. The market research report was realised for the EU-funded LIFE FRONT project. Amongst the main result of the market research:
• Current charge limits set in standards both restrict and obstruct the development of hydrocarbon technology
• Over 50% survey respondents already work with hydrocarbons to some extent
• Most of those planning to start working with hydrocarbons in the future will do that in 2019-2020 timeframe - revision of standards could have a major impact on the scale of this shift
• Large proportion of respondents indicated they manufacture equipment using multiple refrigeration circuits - allowing higher hydrocarbon charge limits per single refrigeration circuit would have a profound impact on cost and availability of larger units.

Tip of the Iceberg: Implications of Illegal CFC Production and Use. The Environmental Investigation Agency (EIA) recently released report urges Parties to the Montreal Protocol to address a number of remaining unanswered questions, in particular the absence of comprehensive data regarding the size of current banks of CFC-11 in PU foam and other products or equipment.

Cold Hard Facts 3 - Review of the Refrigeration and Air Conditioning Industry in Australia - The refrigeration and air conditioning industry is the largest user of synthetic greenhouse gases and ozone depleting substances in Australia. Cold Hard Facts 3 provides an economic and technological assessment of the refrigeration and air conditioning industry in Australia in 2016. The report includes an analysis of the size and economic value of the industry, the equipment and refrigerant gas bank, trends in gas imports and equipment, and direct and indirect emissions in this sector. [...] This study provides a broad view of the composition, size and value of the industry, and projections for its future. This will assist industry and policy makers with management of ozone depleting substances as they are phased out, and synthetic greenhouse gases, including hydrofluorocarbons (HFCs) which are being phased down from January 2018.

Miscellaneous

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

The United Nations Environment, OzonAction, in collaboration with Marco Gonzalez and Stephen O. Andersen are updating and expanding the "**Montreal Protocol Who's Who**".
We are pleased to invite you to submit your nomination*, and/or nominate Ozone Layer Champion(s). **The short profile should reflect the nominee's valuable work related to the Montreal Protocol and ozone layer protection.**
Please notify and nominate worthy candidates through the on-line form
We look forward to receiving your nomination(s), and please feel free to contact our team for any further assistance concerning your nomination.

Take this opportunity to raise the profile of women and men who made an important contribution to the Montreal Protocol success and ozone layer protection.

• View the «Montreal Protocol Who's Who» Introductory video
• Contact : Samira Korban-de Gobert, UN Environment, OzonAction

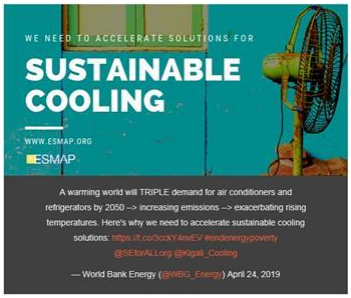
** If you are already nominated, no need to resubmit your profile*

The International Institute of Refrigeration supports World Refrigeration Day - As the only independent intergovernmental organisation in the field of refrigeration, the International Institute of Refrigeration (IIR) joins associations and companies worldwide to support the initiative of an official World Refrigeration Day on 26 June every year. The annual World Refrigeration Day, to be launched on 26 June 2019, aims to raise awareness among the wider public about the importance of refrigeration technologies in everyday life.
Refrigeration is essentially a question of temperature and, as such, it only seems natural to celebrate the field on the birthday of the pioneer at the origin of the international unit of temperature, Lord Kelvin (Sir William Thomson) – born 26 June 1824.
With increasing global stakes at hand, over the past years refrigeration has come to take a leading role at the heart of international affairs.
The inauguration of a World Refrigeration Day would not only be an ideal way to recognise the many historical achievements of the industry, but also a means to anticipate and overcome together the challenges we face. ...
Click here for more information.

New International Journal of Refrigeration service for IIR members - Access the complete archives of the International Journal of Refrigeration (IJR) online. Designed with IIR members in mind, this new and practical electronic subscription gives members substantial advantages:
- Immediate and permanent access to the latest research and to IJR archive
- Access the latest articles as soon as they become available online.
- Browse, search and read each one of the nearly 4,500 papers since Volume 1, Issue 1.
- Unlimited access to seminal contributions to the field of refrigeration dating back to 1978.
- Keep up-to-date with subscriptions to customized e-alerts on New Volumes, Topics and saved Searches.
Enhanced content and functions
- Easily export references, citations and abstracts.
- Print, download or share articles with colleagues or peers.
- See which papers, published in Elsevier or elsewhere, have cited any selected article.
- Consult the research highlights overview of articles in volumes from 2012 onwards.
To access this new service, click “activate my e-IJR subscription now” and follow the instructions.

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

OZONE HOLE: HOW WE SAVED THE PLANET - New Documentary Tells the Remarkable Story of How Scientists Discovered the Deadly Hole in the Ozone – and the **Even More Remarkable Story of How the World's Leaders Came Together to Fix It.**



New program to scale up efficient, clean cooling in developing countries- The World Bank announced today [24 April 2019] a new program to accelerate the uptake of sustainable cooling solutions, including air conditioning, refrigeration and cold chain in developing countries. The program will provide technical assistance to ensure that efficient cooling is included in new World Bank Group investment projects and mobilize further financing. Globally, demand for cooling is increasing, mainly driven by growing populations, urbanization and rising income levels in developing countries. Further exacerbating the issue, rising temperatures will increase demand for cooling appliances, which not only use large amounts of energy, but also leak refrigerants that contribute to global warming.

Ozone Depletion Explained --- The ozone layer's status today
- Recognition of the harmful effects of CFCs and other ozone-depleting substances led to the Montreal Protocol on Substances That Deplete the Ozone Layer in 1987, a landmark agreement to phase out those substances that has been ratified by all 197 UN member countries. Without the pact, the U.S. would have seen an additional 280 million cases of skin cancer, 1.5 million skin cancer deaths, and 45 million cataracts—and the world would be at least 25 percent hotter...

The IIR launches a Call to Action for World Refrigeration Day - Send your proposals to the IIR, *preferably by May 20*, at iif-iir@iifiir.org with the subject "**Call to Action: World Refrigeration Day**".

WORLD REFRIGERATION, AIR-CONDITIONING AND HEAT-PUMPS DAY. 26TH JUNE 2019 ANNUAL EVENT

Skin cancer rates are rising. On this 'Don't Fry Day,' UV expert offers tips to stay safe in the sun.

EPA's Nancy Akerman: "**You only have one skin, so take care of it**!"

Summer unofficially kicks off each Memorial Day weekend, as our first real chance to head outdoors and enjoy the warmth and sunshine. "**Don't Fry Day**" is an annual reminder, led by the National Council on Skin Cancer Prevention, to practice sun safety and be mindful of how the sun's ultraviolet (UV) radiation affects us.

The effects of exposure to UV rays accumulate over your lifetime. Overexposure to this radiation is linked to skin cancer, which remains the most common form of cancer in the United States, and the rates are rising ...

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Reviewed by: Dr. Ezra Clark, OzonAction

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UN environment

Multilateral Fund for the Implementation of the Montreal Protocol

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