See online

In this issue:

Global

1. Dr. David Fahey a groundbreaking atmospheric scientist, will be among awardee recipients of the honorary doctoral degrees at the University of Wisconsin–Madison in May

Dr. David Fahey is Co-Chair of the Montreal Protocol Scientific Assessment Panel (SAP), Co-Author of Twenty Questions and Answers About the Ozone Layer: 2014 Update and Lead Author of the 2017 Climate Science Special Report of the U.S. National Climate Assessment.

[...] A groundbreaking atmospheric scientist, a brilliant U.S. diplomat and an esteemed businessman and philanthropist will be awarded honorary doctoral degrees at the University of Wisconsin–Madison in May.

The recipients are David Fahey, whose research has helped protect the Earth's ozone layer and climate;Honorary doctorates from UW–Madison recognize individuals with careers of extraordinary accomplishment. The Committee on Honorary Degrees considers sustained and uncommonly meritorious activity exhibiting values that are esteemed by a great university. Preference is given to people connected in some significant way to the state or university, though that is not a prerequisite. All three of this year's honorees are UW–Madison graduates.

David Fahey conducts leading-edge research on atmospheric trace gases and aerosols. He's considered one of the world's top climate scientists, credited with helping prevent great harm to humanity through his contributions to an international treaty known as the Montreal Protocol. The protocol, agreed to in 1987, has led to the global phase-out of the most harmful ozone-depleting substances.

Fahey was jointly nominated for the honor by the UW–Madison departments of Physics, Chemistry, and Atmospheric and Oceanic Sciences.

"Dr. Fahey's research contributions in the area of ozone depletion have significantly enriched scholarship on the ozone layer and made a notable contribution to ongoing global efforts towards the protection of the ozone layer and mitigation of climate change," writes Tina Birmpili, executive secretary of the Ozone Secretariat, United Nations Environment Programme, in a letter supporting Fahey's nomination. "His work has been of immense value to the 197 parties to the Montreal Protocol, which is widely recognized as the most successful international environmental agreement."

Fahey is considered one of the world's top climate scientists, credited with helping prevent great harm to humanity through his contributions to the Montreal Protocol.

Fahey was born and raised in Madison and graduated from Edgewood High School in Madison. After graduating from UW–Madison in 1975 with a bachelor's degree in physics, Fahey earned a Ph.D. in physics from Missouri University of Science and Technology in Rolla. He has worked for more than 35 years for the National Oceanic and Atmospheric Administration. He currently directs its Chemical Sciences Division at the Earth System Research Laboratory in Boulder, Colorado.

In his early scientific work, Fahey developed instrumentation for high-altitude research aircraft to study the gas-phase and aerosol composition of the lower stratosphere and upper troposphere. Later studies have focused on the presence of black carbon in the atmosphere and its effect on global warming. He was a lead author of the 2017 Climate Science Special Report of the U.S. National Climate Assessment.

The honorary degrees, as well as doctoral, MFA and medical professional degrees, will be conferred at the 5:30 p.m. commencement ceremony on Friday, May 11, at the Kohl Center.

University of Wisconsin–Madison, 8 March 2018, By Doug Erickson

2. Blowing agents market growth and new market opportunities explored 2016 – 2024

Increasing demand for polymeric foams, especially polyurethane foams, owing to rapid development in their end-user industries such as construction and appliances is driving the demand for blowing agents. Additionally, high growth of end use industries in Asia Pacific is anticipated to further fuel the demand for blowing agents. However, stringent environmental regulations regarding chemicals used as blowing agents might hamper the growth. Development of new environment friendly biobased products for utility as blowing agents might bring future prospective opportunities for market growth.

The major types of blowing agents that find use in the industry are: Hydrocarbons (HCs), hydro-chloro-fluoro-carbons (HCFCs), and hydro-fluoro-carbons (HFCs). Of these, hydrocarbons currently stand as the dominant product segment. Among hydrocarbons, butanes and pentanes are the most common blowing agents used. HCFCs have been gradually phased out in industrialized nations. In many other developing regions as well, HCFCs are being phased out gradually because of their reported adverse effects such as Ozone Depletion Potential (ODP) and Global Warming Potential (GWP). This has in turn led several companies to develop and launch alternative blowing agents that are environment friendly.

Among the key foams that see the utilization of such blowing agents are: Polyurethane foam, polystyrene foam, phenolic foam, and polyolefin foam. The polyurethane foam industry makes use of all types of blowing agents and as a result, holds a major share in the market. Owing to its wide range of applications in chemicals, construction and automotive industries, demand for polyurethane products is rising at a high growth rate, which, eventually, generates demand for blowing agents.

The market place is dominated by a few global players with major market share. However there are a large number of small and medium sized players, especially in Asia Pacific, competing for the market share with aggressive pricing schemes.

CMFE News, 13 March 2018, By: Ganesh Rajput

Africa

3. Ghana looking for alternative refrigerants

The Environmental Protection Agency (EPA) has stated that Ghana is ready to adopt alternative refrigerants such as hydrocarbons and ammonia as part of efforts to phase out Ozone-Depleting Substances (ODS).

Peter Abum Sarkodie, Executive Director of EPA, who made the assertion, said the nation must have well-trained servicing technicians in order to do so.

Speaking at the launch of a new Refrigeration Centre of Excellence at Kumasi Technical Institute, Mr Sarkodie stated that the EPA has a responsibility to ensure the reduction in the use of refrigerants that cause ozone depletion and global warming.

“By so doing, we will be helping to achieve the Sustainable Development Goals 7 and 13 and clean change energy, and climate action respectively,” he noted, and added that it would help the nation to meet obligations of the Montreal Protocol and its amendments.

The EPA boss indicated that the Refrigeration Centre of Excellence at the Takoradi Technical Institute would serve the southern sector.

According to him, a national refrigeration centre would soon be commissioned at the Accra Technical Training Centre.

“In this regard, we will build a cadre of highly skilled and qualified technicians, thus creating jobs, gaining climate and ozone benefits from these sectors and enhancing national development,” he intimated.

Mr Sarkodie explained that the installed equipment at the centres would be used to test adulterated refrigerants.

The Ashanti Regional Minister, Simon Osei-Mensah, who commissioned the centre, stated that government would place emphasis on technical education.

Modern Ghana, 8 March 2018

4. Gambia Technical Training Institute (GTTI) train technicians on refrigeration, air conditioning gases

Gambia Technical Training Institute (GTTI) engineering department, in collaboration with the National Environment Agency (NEA) have trade technicians on refrigeration and air conditioning on hydrocarbon and carbon dioxide management in the use of alternatives gases.

Held at the GTTI ground at Old Jeshwang, the training was funded under the United Nations Industrial Development Organization (UNIDO) from 18th February to 2nd March.

Speaking at the opening ceremony, Edward Mensah said GTTI aims to address the mid-level manpower needs of The Gambia by engaging in series of technology transfers to technicians in the area of refrigeration and air conditioning.

The training targets to update business entrepreneurs to provide practical platforms on holistic entrepreneurial experience in the use of natural refrigerants.

Mr. Mensah said lack of knowledge in most developing countries is linked to lack of technical information on natural refrigerants and training facilities, saying GTTI as a training provider for technical education in The Gambia, has been partnering with NEA for the past 18 years to promote naturally friendly gases for refrigeration and air conditioning applications as part of a contract signed with UNIDO.

According to him, the project aimed to raise awareness of commercial entrepreneurs on the use of refrigerants application to reduce greenhouse gas emission. “The training will familiarise them with modern tools and equipment given by UNIDO to reduce the greenhouse emissions associated with industrial and domestic RAC facilities in The Gambia to create enabling environment for the use of natural refrigerants.”

Mr. Mensah reminded participants that the training is an opportunity for them to learn and adopt good practice in the use of natural refrigerants as recommended as alternatives to the use of Hydrochlorofluorocarbons (HCFCs).

Alhagie Sarr, representative of NEA said it is important to monitor substances that deplete the ozone layer and to get rid of gases that contribute to global warning. “The training will help educate refrigerants and air conditioning technicians on how to handle systems.

The Point, 13 March 2018, By: Rose Zahra Gomez

North America

5. Orange County man pleads guilty to illegal sales of ozone-depleting refrigerant

LOS ANGELES — A Garden Grove man pleaded guilty Wednesday to federal charges of illegally importing and selling a highly regulated chemical compound known as R-22 under the pretense that he was actually bringing into the United States a safe refrigerant that does not destroy the ozone layer.

Mahmoud Alkabbani, 64, the owner of USA Car Parts, entered his plea in downtown Los Angeles to felony counts of conspiracy to defraud the United States and violating the Clean Air Act by improperly selling R-22 to an undercover agent. He faces up to 10 years behind bars at sentencing June 13, according to the U.S. Attorney’s Office.

R-22 is chlorodifluoromethane, sometimes known as HCFC-22, a refrigerant gas and class II ozone-depleting substance.

Pursuant to international treaty, the use of R-22 is being phased out around the world. In the United States, pursuant to the Clean Air Act, only parties with unexpended “consumption allowances” are allowed to import the chemical.

According to federal prosecutors, Alkabbani entered into an agreement with a Chinese company to purchase 4,000 canisters of R-22, which was packaged in cylinders bearing counterfeit “Glacier” trademarks.

The 2013 contract with the Chinese company listed the product as R-134a — which is not regulated by the Clean Air Act and does not deplete the ozone layer — but a second, secret agreement called for the Chinese company to actually sell R-22 to Alkabbani, prosecutors said.

In September 2013, Alkabbani offered R-22 for sale on eBay and subsequently made an agreement to sell four cylinders to an undercover agent for $330 each — more than 10 times the amount he had paid for the substance, according to the U.S. Attorney’s Office.

During a meeting with the undercover agent, the defendant said he could supply as much R-22 as the buyer wanted with just a few days’ notice.

Alkabbani was charged last summer in a nine-count indictment with conspiracy, five counts of passing false and fraudulent papers through a customhouse, and one count each of making false statements, smuggling, and violating the Clean Air Act by improperly selling R-22 to an undercover agent.

The Orange County Register, 8 March 2018

6. California State Agency can no longer spray dangerous pesticides at will

A judge has ordered the California Department of Food and Agriculture to stop using chemical pesticides in its statewide program until the agency complies with state environmental laws.

The injunction, issued late last week, is a sweeping victory for 11 public-health, conservation, citizen and food-safety groups and the city of Berkeley.

The coalition sued the state after unsuccessfully attempting for years to persuade the agency to shift to a sustainable approach to pest control that protects human health and the environment.

Despite thousands of comment letters urging the department to take a safer approach, officials in 2014 approved a program that gave them broad license to spray 79 pesticides, some known to cause cancer and birth defects, anywhere in the state, including schools, organic farms, public parks and residential yards.

Spraying was allowed indefinitely and required no analysis of the health and environmental impacts of the chemicals at the specific application sites and no public notice or scrutiny of treatment decisions. Many of the pesticides are also highly toxic to bees, butterflies, fish and birds.

This injunction follows a Jan. 8 ruling by Judge Timothy M. Frawley voiding approval of the agency's statewide program for numerous violations of state environmental laws, including relying on "unsupported assumptions and speculation" to conclude that pesticides would not contaminate water bodies. The ruling also cited the state's "woefully deficient" analysis of the cumulative danger of increasing the more than 150 million pounds of pesticides already being used in California each year.

The court process culminating revealed not only far-reaching flaws in the state's analysis of the environmental harm caused by the department's pesticide use but also the agency's decades-long history of evading disclosure of the human health and environmental impacts of its activities by granting itself repeated "emergency" exemptions from environmental laws.

"After more than 30 years of disregard for state environmental laws, the agency's chemical weapons have finally been taken off the table," said Nan Wishner of the California Environmental Health Initiative. "We hope the department will take this opportunity to shift course and apply sound science, partner with the public, and develop a more sustainable, transparent approach."

The court also held that the agency had to give public notice of its activities, which officials had insisted was not required.

"The court rejected the agency's blank check to spray people's yards, exposing children and pets to a range of pesticides that can cause serious long-term problems, including cancer, asthma and IQ loss," said Debbie Friedman, founder of MOMS Advocating Sustainability. "If only the $4.5 million in taxpayer dollars used to develop this outdated program had been spent to develop a modern, sustainable approach that does not rely on toxic chemicals, just imagine what progress we could have made toward a healthier environment for everyone."

"Now California must ensure these pesticides aren't harming our water supplies and imperiled species like salmon," said Jonathan Evans, environmental health legal director at the Center for Biological Diversity. "This ruling affirms that people should have a voice in pesticide use in their neighborhoods."

The state's attorney told the court that the Department of Food and Agriculture had already carried out more than 1,000 pesticide treatments since the program was approved in 2014. Program pesticides include these dangerous chemicals:

• Chlorpyrifos, known to cause brain damage in children and to threaten 97 percent of endangered wildlife;
• Neonicotinoid pesticides that are highly toxic to pollinators like bees and aquatic invertebrates like crustaceans and mollusks;
• The toxic fumigant methyl bromide, which depletes the protective ozone layer;
• The chemical warfare agent chloropicrin, which causes genetic damage.

"The judge has told the state that harmful pesticides simply can't be sprayed indiscriminately, without robust consideration of impacts on people, animals and water," said Bill Allayaud, California director of government affairs for the Environmental Working Group. "The ruling also affirms that Californians have the right to know about pesticides being sprayed around them and the ability to challenge spraying that endangers public health and natural resources."

The suit was brought by the city of Berkeley, the Center for Biological Diversity, Environmental Working Group, California Environmental Health Initiative, MOMS Advocating Sustainability, Center for Food Safety, Pesticide Action Network North America, Center for Environmental Health, Environmental Action Committee of West Marin, Beyond Pesticides, Californians for Pesticide Reform, and Safe Alternatives for Our Forest Environment.

The plaintiffs are represented by Arthur Friedman of Sheppard, Mullin, Richter & Hampton, along with Jason Flanders of ATA Law Group.

The Cornucopia Institute, 15 March 2018

Asia Pacific

7. As countries crank up the AC, emissions of potent greenhouse gases are likely to skyrocket

In the summer of 2016, temperatures in Phalodi, an old caravan town on a dry plain in northwestern India, reached a blistering 51°C—a record high during a heat wave that claimed more than 1600 lives across the country. Wider access to air conditioning (AC) could have prevented many deaths—but only 8% of India's 249 million households have AC, Saurabh Diddi, director of India's Bureau of Energy Efficiency in New Delhi, noted at the World Sustainable Development Summit there last month. As the nation's economy booms, that figure could rise to 50% by 2050, he said. And that presents a dilemma: As India expands access to a life-saving technology, it must comply with international mandates—the most recent imposed just last fall—to eliminate coolants that harm stratospheric ozone or warm the atmosphere.

"Growing populations and economic development are exponentially increasing the demand for refrigeration and air conditioning," says Helena Molin Valdés, head of the United Nations' (UN's) Climate & Clean Air Coalition Secretariat in Paris. "If we continue down this path," she says, "we will put great pressure on the climate system." But a slow start to ridding appliances of the most damaging compounds, hydrofluorocarbons (HFCs), suggests that the pressure will continue to build. HFCs are now "the fastest-growing [source of greenhouse gas] emissions in every country on Earth," Molin Valdés says.

HFCs, already widely used in the United States and other developed countries, are up-and-coming replacements for hydrochlorofluorocarbons (HCFCs) found today in most AC units and refrigerators in India and other developing nations. HCFCs are themselves replacements for chlorofluorocarbons (CFCs), ozone-destroying chemicals banned under the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer. But HCFCs are potent greenhouse gases, as well as a threat to ozone, and they are now being phased out under a 2007 amendment to the protocol. Developed countries are to ditch them by 2020; developing countries have until 2030.

To meet those deadlines, manufacturers have turned to HFCs, which do not destroy ozone. But they are a serious climate threat. The global warming potency of HFC-134a, commonly used in vehicle AC units, is 1300 times that of carbon dioxide. Clamping down on HFCs, a 2014 analysis found, could avoid a full 0.5°C of future warming.

As with the HCFC phaseout, developed countries agreed to make the first move: They must begin abandoning the production and consumption of HFCs next year and achieve an 85% reduction by 2036. In the United States, the transition is off to a rough start. Last August, a U.S. federal appeals court rejected an Environmental Protection Agency rule that would have required manufacturers to replace HFCs with more

climate-friendly substitutes, saying the agency lacks the regulatory authority to compel companies to make the switch. In January, the court declined to revisit its August 2017 decision.

In part because of rising demand for AC, developing countries negotiated a later deadline for ditching HFCs: They are to start phasing them down in 2029 and complete the process by 2047, about a decade after developed countries. In the meantime, the desire for cool air could drive up coolant emissions. An analysis done before the HFC phase-down agreement predicted that if no action were taken, HFC use in AC units would rise 2% a year in developed countries and 5.6% annually in the developing world through 2050. The agreement is unlikely to thwart that rise anytime soon: A recent UN report, which summarized studies of HFC use in Bangladesh, Chile, Colombia, Ghana, Indonesia, and Nigeria, found that use of HFCs will spike in all six countries in the coming years.

Some climate experts are more hopeful, pointing out that developing countries have an opportunity to bypass HFCs altogether. "The alternative when developed countries phased out HCFCs was HFCs. But developing countries are in a different position: They're at the beginning of phasing out HCFCs and can leap directly past HFCs" to benign alternatives, says Nathan Borgford-Parnell, regional assessment initiative coordinator for the UN's Climate & Clean Air Coalition.

India is crafting a National Cooling Action Plan that aims to do just that. It will include better city planning and building design, and it will embrace novel coolants, says Stephen Andersen of the Institute for Governance & Sustainable Development in Washington, D.C., who helped develop the plan.

Meanwhile, six AC manufacturers in India have already begun "leapfrogging" to hydrocarbon-based coolants such as R-290—refrigerant-grade propane—that have lower warming potential, says Anjali Jaiswal, the San Francisco, California-based director of the India Initiative at the Natural Resources Defense Council. Although R-290 is flammable and requires installers to be specially trained, it is one of the most promising alternatives, she adds.

"I'm hopeful," says A. R. Ravishankara, an atmospheric chemist at Colorado State University in Fort Collins. With many years to make the switch to alternatives, he says, "There's enough time for the free market to work and come up with various options."

Science Mag, 8 March 2018


Environmental Protection Authority
Te Mana Rauhī Taiao

APP202804

Application overview

Application code:	APP202804
Application type:	Importation or manufacture for release
Applicant:	Lucebni Zavody Draslovka a.s. Kolin
Applicant postal address:	Havlíčkova 606,Kolín IV,280 99,Czech Republic
Application state:	Open for Submissions
Application decision:	
Application purpose:	To import EDN, a fumigant for use on timber/logs under commercial conditions
Decision notified date:	

Application documents

Substances or organisms in application

8. Potential methyl bromide alternative to be considered

The EPA [New Zealand] is seeking submissions on a possible new fumigant for logs and timber as an alternative to methyl bromide.

Czech-based firm Draslovka, has applied to the Environmental Protection Authority seeking an approval to import ethanedinitrile for release in New Zealand.

According to 2015 data, New Zealand is the world's fifth-highest user of methyl bromide. The Ministry for Primary Industries estimates 90 per cent of this use relates to disinfesting export logs and timber.

Following a reassessment in 2010 the Environmental Protection Authority announced that by 2020 methyl bromide fumigations for logs must use recapture technology to reduce the amount discharged into the atmosphere.

View application details and information

Make a submission

Public submissions on this application close at 5pm, Thursday 12 April 2018.

The Environmental Protection Authority, 1 March 2018

Europe & Central Asia

9. Licensing and reporting of ozone-depleting substances (ODS)

The import and export of ozone-depleting substances (ODS), as well as production for laboratory and analytical uses, are subject to licensing. These activities, as well as the destruction of ODS, feedstock uses and process agent uses are subject to annual reporting. Furthermore, the use of ODS for laboratory and analytical uses is subject to registration. For these purposes three electronic systems are in place: ODS Licensing System, BDR and labODS registry.

Withdrawal of the United Kingdom and EU rules in the field of import/export licences.

As of 30 March 2019, shipments of ozone-depleting substances from the EU-27 to the United Kingdom and vice versa will require an import/export licenceSearch for available translations of the preceding link

European Commission, 4 March 2018

10. New free low GWP alternative refrigerant learning resources now available on REAL Alternatives 4 LIFE online platform

Co-financed by the EU's funding instrument for the environment and climate action, the REAL Alternatives 4 LIFE project recently published a set of newly updated material on its e-learning platform.

With the aim of addressing climate change and supporting the rapid move to alternatives from high GWP refrigerants, English versions of nine low GWP alternative refrigerant learning modules were developed by a team of international experts.

The fifteen organisation strong team of project partners – trainers, universities and trade associations across the EU – carried out a thorough review of the contents of existing learning materials that were originally developed in 2014. Identifying a need in the market, this review led to the introduction of a new module focusing on Safety and Risk Assessment to highlight precautions needed when handling flammable, toxic and high pressure low GWP refrigerants.

The materials now include the following booklets:
1- Introduction to Alternative Refrigerants - safety, efficiency, reliability and good practice
2- Safety and Risk Management
3- System design using alternative refrigerants
4- Containment and leak detection of alternative refrigerants
5- Maintenance and repair of alternative refrigerant systems
6- Retrofitting with low GWP refrigerants
7- Checklist of legal obligations when working with alternative refrigerants
8- Measuring the financial and environmental impact of leakage
9- Tools and guidance for conducting site surveys

The new set of learning materials are available to download free from the REAL Alternatives 4 LIFE website at www.realalternatives4life.eu.

To help raise skills levels and awareness across the whole of the EU, the materials will be translated into an additional 12 different EU languages over the coming months and will be supported by a free e-learning site, which will have more interactive resources and links.

About REAL Alternatives
REAL Alternatives 4 LIFE promotes best practice in training for low GWP alternative HFOs, R32, hydrocarbon, carbon dioxide and ammonia across Europe – ensuring they are used safely, efficiently, reliably and cost-effectively. It addresses critical barriers currently preventing more widespread uptake in the industry by increasing awareness, experience and knowledge levels. The project is also spreading knowledge on the

availability of training for low GWP refrigerants with a presence at some of the most important national, EU and global environmental summits, conferences and events.

Contact Project Manager **Raluca Sisiu**, Institute of Refrigeration UK, or visit the **project website** for updates.

Featured

OZONE SECRETARIAT

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

• Click **here** for further information.

• Browse through the Ozone Secretariat "**In Focus**" to learn about latest updates.

• Click **here** for Montreal Protocol Meetings Dates and Venues

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

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

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

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

full SAP assessment report for 2014 was published in December 2014, while the EEAP assessment report for 2014 was published in January 2015.

PROGRESS & QUADRENNIAL ASSESSMENT REPORTS
- **EEAP**
- **SAP**
- **TEAP**

SYNTHESIS REPORTS
- **2014 assessments**
- **2010 assessments**
- **2006 assessments**

Assessment Panels List of Meetings

THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL

- **Report and other Documents** for the 80th meeting of the Executive Committee
- **Agenda** for the 80th meeting of the Executive Committee
- **Report** of the 79th meeting of the Executive Committee

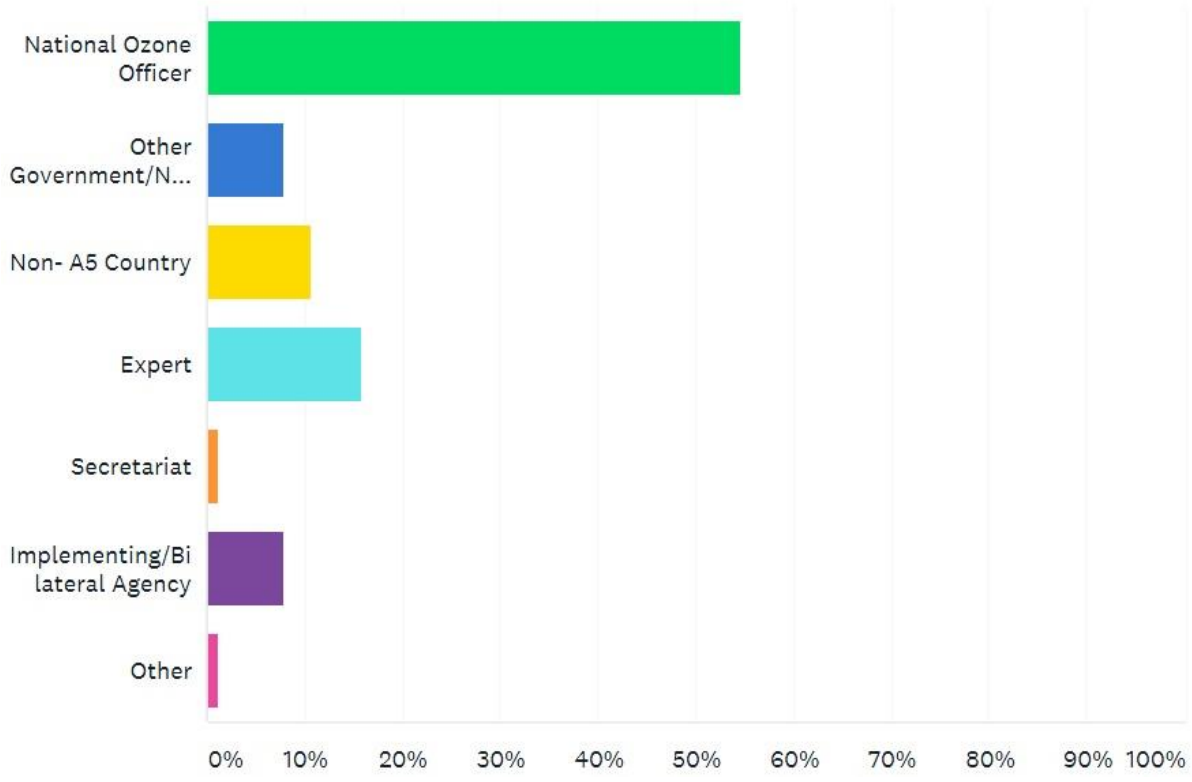
Learn more

OZONACTION

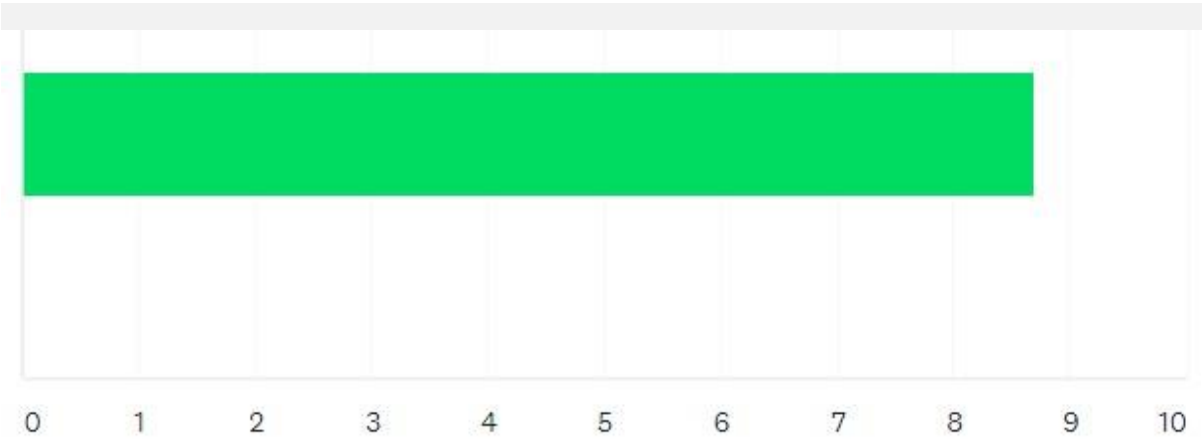
Feedback Survey Results: First Inter-Regional Thematic Technical Workshops and Regional Network Meetings for National Ozone Officers

UN Environment OzonAction organised the first Inter-Regional Thematic Technical Workshops and Regional Network Meetings for National Ozone Officers, 15-19 January 2018 in Paris, France. Following the event OzonAction carried out a quick online survey to seek some guidance, feedback and understanding of the level of satisfaction of the participants in this type of meeting.

In what capacity did you participate in the workshops?

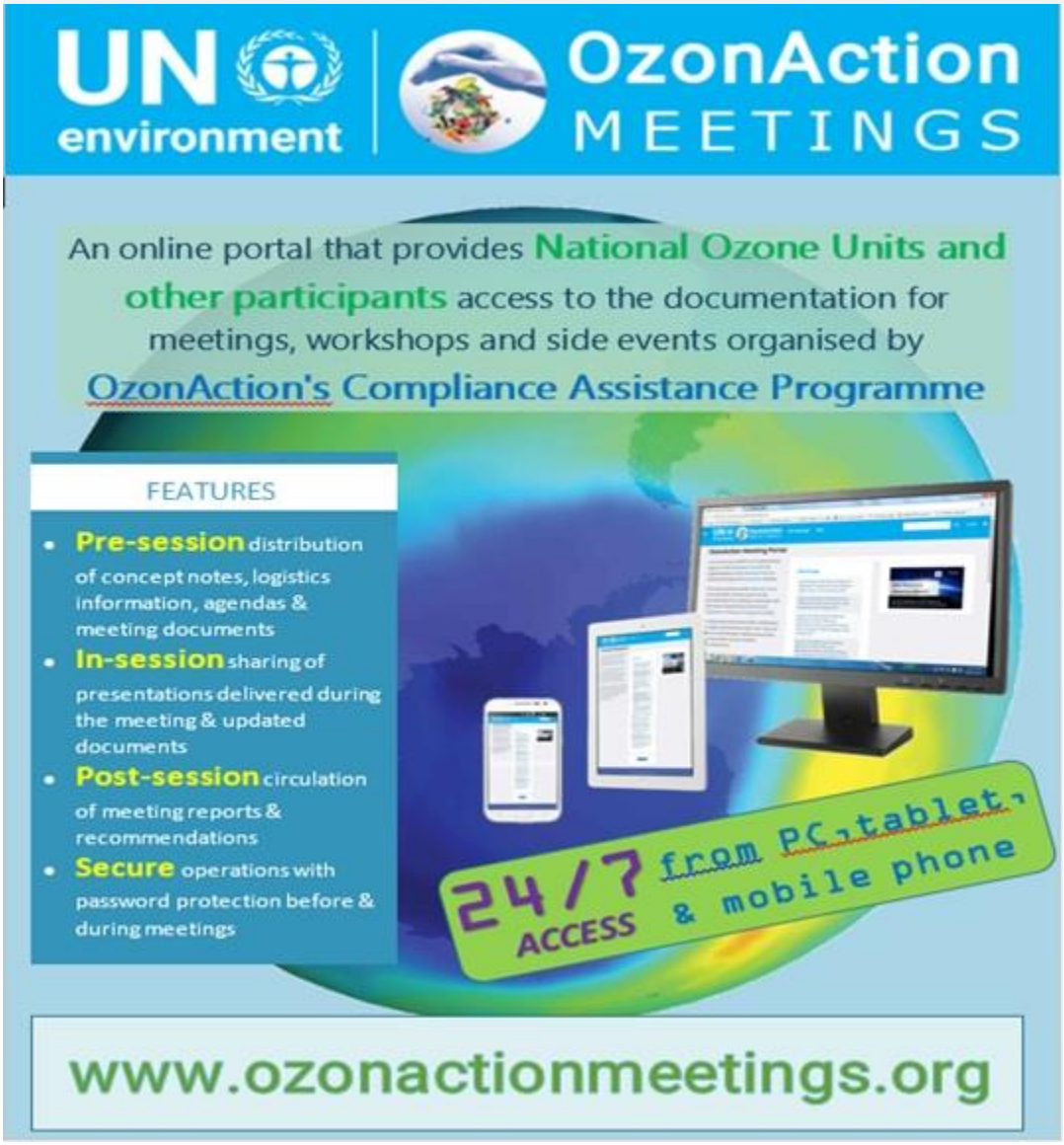


What was your overall opinion of the workshops?
(0 = poor 10 = excellent)



The feedback in general was very positive with participants scoring the meeting with an overall score of 8.6 (out of a total score of 10). OzonAction also received some very useful comments and suggestions. Full details can be seen in the analysis and brief report, which can be found **here**

Thank you very much to all that completed the survey.



Visit the OzonAction Meetings Portal and learn more about our current, upcoming, and future events

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

Issue#**1** | Issue#**2**

The application allow you to easily convert ODP, 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**

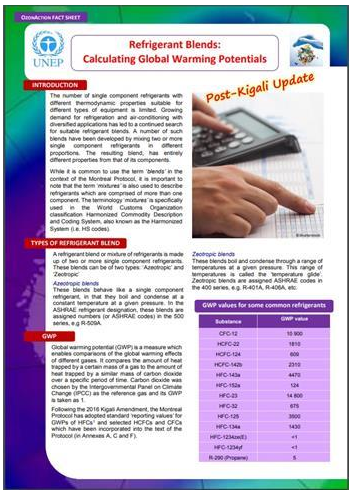
OzonAction Factsheets

Click **here** to access **OzonAction Series of Fact Sheets relevant to the Kigali Amendment.**

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

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

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



Refrigerant Blends: Calculating Global Warming Potentials (post-Kigali update)

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

Tools Commonly used by Refrigeration and Air-Conditioning Technicians

OzonAction Multimedia Video Application: Refrigeration and Air-conditioning Technician Video Series - 47,000 download to date - OzonAction has launched an exciting new application which hosts series of short instructional videos on techniques, safety and best practice for refrigeration and air-conditioning technicians.

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

Additional videos will be added regularly.

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

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

Available in the **Android Play Store** and Apple Store/iTunes.
(Just search for “OzonAction”, or scan this QR code)

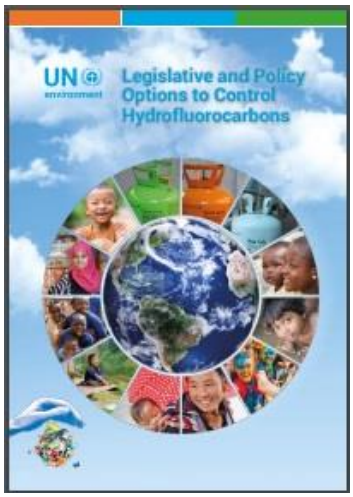
OzonApp eDocs+ launched in Android Play Store and Apple Store.

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

OzonApp eDocs+ available in the **Android Play Store** and Apple Store/iTunes.
(Just search for “OzonAction”, or scan this QR code)

Publications

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



Legislative and Policy Options to Control Hydrofluorocarbons

In order to follow and facilitate the HFC phase-down schedules contained in the Kigali Amendment, the Parties, including both developed and developing countries, will have to implement certain measures.

This booklet contains a recommended set of legislative and policy options which the developing (Article 5) countries may wish to consider for implementation. It is intended to be a guide/tool for countries.

Events

2018

• **AIRAH Refrigeration 2018**, 26 – 27 March 2018, Sydney, Australia

• **A Cool World: 1st International Congress on Clean Cooling**, 18 -19 April 2018, University of Birmingham, United Kingdom

• **12th Conference on Phase-change Materials & Slurries for Refrigeration & Air Conditioning**, 21-23 May 2018, Orford, Quebec, Canada

• **13th IIR-Gustav Lorentzen Conference on Natural Refrigerants**, 18-20 June 2018, Valencia, Spain

• **1st IIR International Conference on the Application of HFO Refrigerants**. 2-5 September 2018, Austin Court Conference Centre, Birmingham, United Kingdom.

See other **IIR upcoming events**

• **The Future of HVAC Conference 2018**, 12–13 September, Melbourne, Australia.

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.

The dictionary in numbers:
− more than 4,300 terms in English and French, including 800 synonyms,
− around 3,500 definitions in English and French,
− approximately 7,800 terms, synonyms and definitions
− content in 11 languages.

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

The dictionary's content covers all areas of refrigeration such as:
− basic principles (thermodynamics, transfer of heat and mass …)
− production of refrigeration (refrigerated systems, refrigerants…)

− refrigerated installations
− methods of chilling, refrigeration and freezing
− storage, transport and distribution
− refrigeration applications for perishable products and the agro-food industry
− air conditioning
− heat pumps
− cryogenics
− environment

Access the International Dictionary of Refrigeration on the IIR **website**

Refrigerants: There is still no vision for sustainable solutions
by Risto Ciconkov
Letter to the Editor, International Journal of Refrigeration
Abstract and highlights

Miscellaneous

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

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

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

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

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

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

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

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

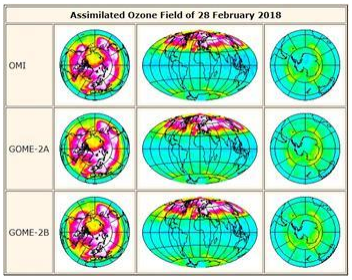
** If you are already nominated, no need to resubmit your profile*

New *International Journal of Refrigeration* service for IIR members - As of January 2017, not only will IIR members continue to receive the hard copy of the journal but IIR membership will now also give members access to the complete archives of the International Journal of Refrigeration (IJR) online. Designed with IIR members in mind, this new and practical electronic subscription gives members substantial advantages:
- Immediate and permanent access to the latest research and to IJR archive
- Access the latest articles as soon as they become available online.
- Browse, search and read each one of the nearly 4,500 papers since Volume 1, Issue 1.
- Unlimited access to seminal contributions to the field of refrigeration dating back to 1978.
- Keep up-to-date with subscriptions to customized e-alerts on New Volumes, Topics and saved Searches.

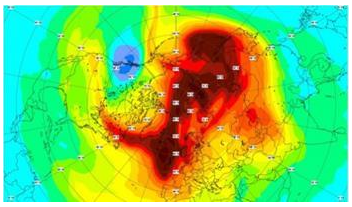
Enhanced content and functions
- Easily export references, citations and abstracts.
- Print, download or share articles with colleagues or peers.
- See which papers, published in Elsevier or elsewhere, have cited any selected article.
- Consult the research highlights overview of articles in volumes from 2012 onwards.

To access this new service, click "**activate my e-IJR subscription now**" and follow the instructions.

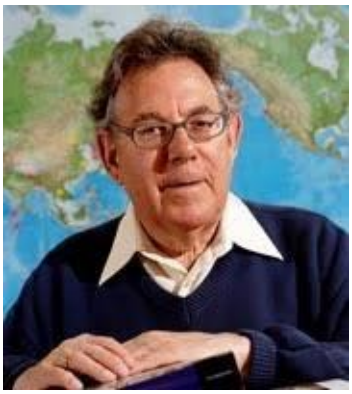
International Observers - New AREA membership category - Due to the significant worldwide interest in European legislative developments and the increase in competence of personnel who handle new refrigerants, AREA is pleased to introduce its brand new "International Observer" membership category. This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



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



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



Call for nominations for the "Paul Crutzen 2018 Award for Young Scientists of the International Commissions on Atmospheric Chemistry and Global Pollution" by iCACGP of IAMAS.

The purpose of the award is to promote scientific innovation in atmospheric sciences for the protection of the environment.

The person nominated for the Award should be the first author of at least one cited paper with significant innovation and impact. An early career scientist is defined for this award as a researcher within 7 years of completing a Ph.D. or equivalent degree If parental leave falls into this period, up to one year may be added per child where appropriate. The nominee should meet the above criteria by the first of June of the year when the award is competed.

Nomination Procedure
A complete nomination packages must be e-mailed in one e-mail to the two following e-mail addresses: **mariak@uoc.gr**; **christian.george@ircelyon.univ-lyon1.fr** under the subject heading: 'Nomination for the iCACGP Paul Crutzen Award 2018'

Survey: "Hydrocarbons availability & impact of standards"

You are invited to participate in this survey as part of the work conducted within the EU-funded project "LIFE FRONT" (http://lifefront.eu/).

The project aims to remove barriers posed by standards for flammable refrigerants in refrigeration, air conditioning and heat pump (RACHP) applications.

The aim of the survey is to map the available technology and product groups using hydrocarbon (HC) refrigerants, their expected future availability, and the impact of standards on such market development. The findings will contribute to the market research investigating the impact of current (restrictive) standards on the European HVAC&R industry, and their end users.

The results of the survey will be available for free to the public as one of the outcomes of the project. The expected publication date is early September.

The respondents can help advance the objectives of the project that seeks to eliminate the existing barriers for hydrocarbons.

Who should answer?

Interested participants to the survey could be:
• system manufacturers
• end-users
• trade bodies
• the research community
• national authorities
• NPOs
The questionnaire takes around 15 minutes to complete, depending on the level of detail you provide.

All results will remain anonymous and only aggregated data will be used to outline the current and future situation for this market segment.

Deadline for contributions: 02 April 2018

For any questions, do not hesitate to contact us at info@lifefront.eu .

Take the survey

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:
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