Volume XXI | 30 March 2021

In this issue:

GLOBAL

1. Kigali Amendment latest ratifications

Congratulations to the latest countries which have ratified the Kigali Amendment:

Burundi, 26 March 2021
Zambia, 15 March 2021

At the Twenty-Eighth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, held in Kigali from 10 to 15 October 2016, the Parties adopted, in accordance with the procedure laid down in paragraph 4 of article 9 of the 1985 Vienna Convention for the Protection of the Ozone Layer, a further amendment to the Montreal Protocol as set out in Annex I to the report of the Twenty-Eighth Meeting of the Parties (Decision XXVIII/1).

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

United Nations Treaty Collection
Image: UN Treaty Collection website

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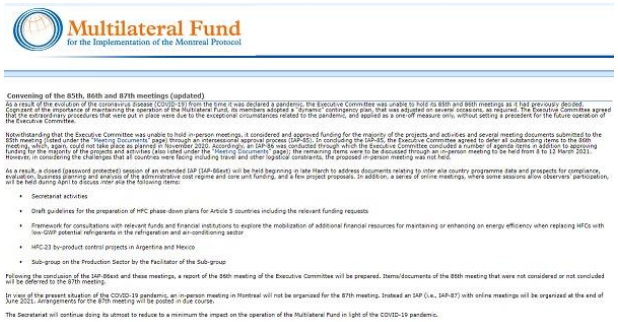
2. Convening of the 85th, 86th and 87th meetings of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol (updated)


Multilateral Fund
for the Implementation of the Montreal Protocol

Convening of the 85th, 86th and 87th meetings (updated)

As a result of the evolution of the coronavirus disease (COVID-19) from the time it was declared a pandemic, the Executive Committee was unable to hold its 85th and 86th meetings as it had previously decided. Cognizant of the importance of maintaining the operation of the Multilateral Fund, its members adopted a 'dynamic' contingency plan, that was adjusted on several occasions, as required. The Executive Committee agreed that the extraordinary procedures that were put in place were due to the exceptional circumstances related to the pandemic, and applied as a one-off measure only, without setting a precedent for the future operation of the Executive Committee.

Notwithstanding that the Executive Committee was unable to hold in-person meetings, it considered and approved funding for the majority of the projects and activities and several meeting documents submitted to the 85th meeting (listed under the 'Meeting Documents' page) through an intersessional approval process (IAP-85). In concluding the IAP-85, the Executive Committee agreed to defer all outstanding items to the 86th meeting, which, again, could not take place as planned in November 2020. Accordingly, an IAP-86 was conducted through which the Executive Committee concluded a number of agenda items in addition to approving the 2021 business plan of the Multilateral Fund. However, in considering the challenges that all countries were facing including travel and other logistical constraints, the proposed in-person meeting was not held.

As a result, a closed (password protected) session of an extended IAP (IAP-86ext) will be held beginning in late March to address documents relating to inter alia country programme data and prospects for compliance, evaluation, business planning and analysis of the administrative cost regime and core unit funding, and a few project proposals. In addition, a series of online meetings, where some sessions allow observers' participation, will be held during April to discuss inter alia the following items:

- Secretariat activities
- Draft guidelines for the preparation of HPC phase-down plans for Article 5 countries including the relevant funding requests
- Framework for consultations with relevant funds and financial institutions to explore the mobilization of additional financial resources for maintaining or enhancing on energy efficiency when replacing HFCs with low-GWP potential refrigerants in the refrigeration and air-conditioning sector
- HFC-23 by-product control projects in Argentina and Mexico
- Sub-group on the Production Sector by the Facilitator of the Sub-group

Following the conclusion of the IAP-86ext and these meetings, a report of the 86th meeting of the Executive Committee will be prepared. Items/documents of the 86th meeting that were not considered or not concluded will be deferred to the 87th meeting.

In view of the present situation of the COVID-19 pandemic, an in-person meeting in Montreal will not be organized for the 87th meeting. Instead an IAP (i.e., IAP-87) with online meetings will be organized at the end of June 2021. Arrangements for the 87th meeting will be posted in due course.

The Secretariat will continue doing its utmost to reduce to a minimum the impact on the operation of the Multilateral Fund in light of the COVID-19 pandemic.

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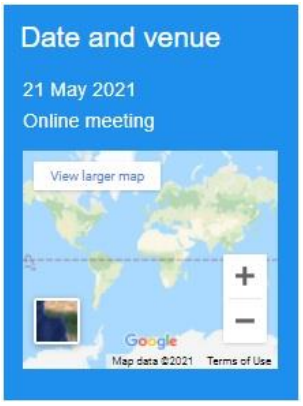
- Report of the intersessional approval process established for the **86th meeting**
- Report of the intersessional approval process established for the **85th meeting**

The Multilateral Fund for the Implementation of the Montreal Protocol
Image: The Multilateral Fund for the Implementation of the Montreal Protocol website

3. Fourth Extraordinary Meeting of the Parties to the Montreal Protocol on Replenishment: 2021 Contributions by some Parties



Notification

By decision XXXII/2, the Thirty-Second Meeting of the Parties to the Montreal Protocol agreed to authorize the Secretariat to organize an extraordinary meeting of the Parties in 2021 to enable parties to take a decision on the replenishment of the Multilateral Fund for the triennium 2021-2023 if and when the circumstances related to the global COVID-19 pandemic permit it.

In relation to this decision, the Secretariat has received a request by some parties to schedule the extraordinary meeting of the parties as soon as possible and before mid-June 2021 to facilitate the payment of national contributions to the Multilateral Fund in 2021 by some parties.

Following some consultations on this request and the agreement by parties on holding an extraordinary meeting, the Secretariat wishes to notify all parties to the Montreal Protocol that the Fourth Extraordinary Meeting of the Parties shall be held online on 21 May 2021 for one day

Further information about the Meeting and the invitation will be communicated in due course. Relevant pre-session documents, will be posted when ready.

The UN Environment Programme (UNEP), Ozone Secretariat, March 2021
Image: Ozone Secretariat website

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4. Study predicts the oceans will start emitting ozone-depleting CFCs

As atmospheric concentrations of CFC-11 drop, the global ocean should become a source of the chemical by the middle of next century.

The ocean, a longtime reservoir for CFC-11, will become a source of the ozone-depleting chemical by middle of next century, a new MIT study finds. Image: iStockphoto

The world's oceans are a vast repository for gases including ozone-depleting chlorofluorocarbons, or CFCs. They absorb these gases from the atmosphere and draw them down to the deep, where they can remain sequestered for centuries and more.

Marine CFCs have long been used as tracers to study ocean currents, but their impact on atmospheric concentrations was assumed to be negligible. Now, MIT researchers have found the oceanic fluxes of at least one type of CFC, known as CFC-11, do in fact affect atmospheric concentrations. In a study appearing today in the *Proceedings of the National Academy of Sciences*, the team reports that the global ocean will reverse its longtime role as a sink for the potent ozone-depleting chemical.

The researchers project that by the year 2075, the oceans will emit more CFC-11 back into the atmosphere than they absorb, emitting detectable amounts of the chemical by 2130. Further, with increasing climate change, this shift will occur 10 years earlier. The emissions of CFC-11 from the ocean will effectively extend the chemical's average residence time, causing it to linger five years longer in the atmosphere than it otherwise would. This may impact future estimations of CFC-11 emissions.

The new results may help scientists and policymakers better pinpoint future sources of the chemical, which is now banned worldwide under the Montreal Protocol.

"By the time you get to the first half of the 22nd century, you'll have enough of a flux coming out of the ocean that it might look like someone is cheating on the Montreal Protocol, but instead, it could just be what's coming out of the ocean," says study co-author Susan Solomon, the Lee and Geraldine Martin Professor of Environmental Studies in MIT's Department of Earth, Atmospheric and Planetary Sciences. "It's an interesting prediction and hopefully will help future researchers avoid getting confused about what's going on."

Solomon's co-authors include lead author Peidong Wang, Jeffery Scott, John Marshall, Andrew Babbin, Megan Lickley, and Ronald Prinn from MIT; David Thompson of Colorado

State University; Timothy DeVries of the University of California at Santa Barbara; and Qing Liang of the NASA Goddard Space Flight Center.

An ocean, oversaturated

CFC-11 is a chlorofluorocarbon that was commonly used to make refrigerants and insulating foams. When emitted to the atmosphere, the chemical sets off a chain reaction that ultimately destroys ozone, the atmospheric layer that protects the Earth from harmful ultraviolet radiation. Since 2010, the production and use of the chemical has been phased out worldwide under the Montreal Protocol, a global treaty that aims to restore and protect the ozone layer.

Since its phaseout, levels of CFC-11 in the atmosphere have been steadily declining, and scientists estimate that the ocean has absorbed about 5 to 10 percent of all manufactured CFC-11 emissions. As concentrations of the chemical continue to fall in the atmosphere, however, it's predicted that CFC-11 will oversaturate in the ocean, pushing it to become a source rather than a sink.

"For some time, human emissions were so large that what was going into the ocean was considered negligible," Solomon says. "Now, as we try to get rid of human emissions, we find we can't completely ignore what the ocean is doing anymore."

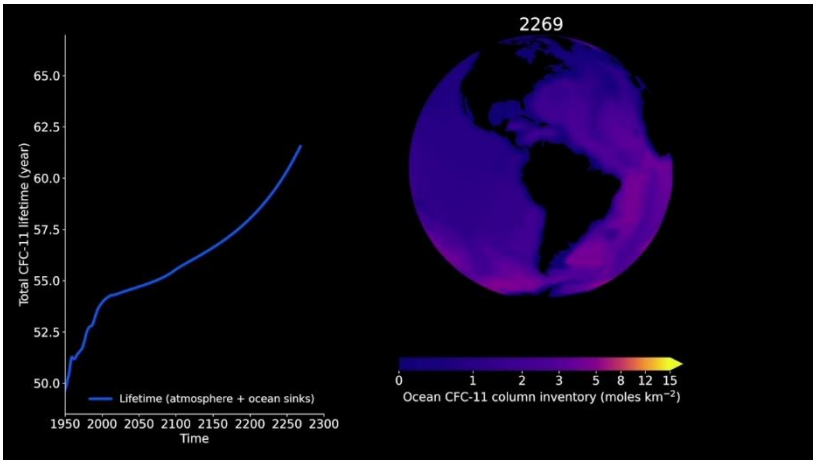
A weakening reservoir

In their new paper, the MIT team looked to pinpoint when the ocean would become a source of the chemical, and to what extent the ocean would contribute to CFC-11 concentrations in the atmosphere. They also sought to understand how climate change would impact the ocean's ability to absorb the chemical in the future.

The researchers used a hierarchy of models to simulate the mixing within and between the ocean and atmosphere. They began with a simple model of the atmosphere and the upper and lower layers of the ocean, in both the northern and southern hemispheres. They added into this model anthropogenic emissions of CFC-11 that had previously been reported through the years, then ran the model forward in time, from 1930 to 2300, to observe changes in the chemical's flux between the ocean and the atmosphere.

They then replaced the ocean layers of this simple model with the MIT general circulation model, or MITgcm, a more sophisticated representation of ocean dynamics, and ran similar simulations of CFC-11 over the same time period.

Both models produced atmospheric levels of CFC-11 through the present day that matched with recorded measurements, giving the team confidence in their approach. When they looked at the models' future projections, they observed that the ocean began to emit more of the chemical than it absorbed, beginning around 2075. By 2145, the ocean would emit CFC-11 in amounts that would be detectable by current monitoring standards.



This animation shows (at right) the CFC-11 stored in the ocean over time, and (at left) the corresponding change in the chemical's total atmospheric lifetime.

The ocean's uptake in the 20th century and outgassing in the future also affects the chemical's effective residence time in the atmosphere, decreasing it by several years during uptake and increasing it by up to 5 years by the end of 2200.

Climate change will speed up this process. The team used the models to simulate a future with global warming of about 5 degrees Celsius by the year 2100, and found that climate change will advance the ocean's shift to a source by 10 years and produce detectable levels of CFC-11 by 2140.

"Generally, a colder ocean will absorb more CFCs," Wang explains. "When climate change warms the ocean, it becomes a weaker reservoir and will also outgas a little faster."

"Even if there were no climate change, as CFCs decay in the atmosphere, eventually the ocean has too much relative to the atmosphere, and it will come back out," Solomon adds. "Climate change, we think, will make that happen even sooner. But the switch is not dependent on climate change."

Their simulations show that the ocean's shift will occur slightly faster in the Northern Hemisphere, where large-scale ocean circulation patterns are expected to slow down, leaving more gases in the shallow ocean to escape back to the atmosphere. However, knowing the exact drivers of the ocean's reversal will require more detailed models, which the researchers intend to explore.

"Some of the next steps would be to do this with higher-resolution models and focus on patterns of change," says Scott. "For now, we've opened up some great new questions and given an idea of what one might see."

This research was supported, in part, by the VoLo Foundation, the Simons Foundation, and the National Science Foundation.

Massachusetts Institute of Technology (MIT), 15 March 2021, By: Jennifer Chu | MIT News Office

See also >>>

- "**On the effects of the ocean on atmospheric CFC-11 lifetimes and emissions**" by Peidong Wang, Jeffery R. Scott, Susan Solomon, John Marshall, Andrew R. Babbin, Megan Lickley, David W. J. Thompson, Timothy DeVries, Qing Liang, and Ronald G. Prinn, 15 March 2021, *Proceedings of the National Academy of Sciences*. **DOI: 10.1073/pnas.2021528118**
- **SAGE III Carries on Critical Measurements of Stratospheric Aerosols and Ozone**, NASA, 18 March 2021

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5. World Refrigeration Day announces theme of 2021 campaign

"Cooling Champions: Cool Careers for a Better World"

World Refrigeration Day celebrates the people and technologies responsible for creating and maintaining the world we live in, a world dependent upon temperature-controlled environments. Centered around June 26, the event is supported globally by industry, professional groups, scientific and engineering associations, as well as by governments and individuals.

The WRD 21 campaign will focus on careers in the refrigeration, air-conditioning and heat pumps industry and is titled **"Cooling Champions: Cool Careers for a Better World"**. The goal of the campaign is to inspire students and young professionals – for both men and women – in all countries, encouraging them to meet the challenges faced in their communities.

Following successful campaigns in the last two years, the WRD Secretariat will continue partnering with UNEP OzonAction in the WRD 21 campaign to attract a new generation of Cooling Champions. The campaign includes other partners representing the industry and professionals around the world. The full list of partners and the campaign program will be announced in the coming weeks.

Refrigeration is at the very heart of modern life. More than 15 million people are employed worldwide in the refrigeration sector. The total number of refrigeration, air-conditioning and heat-pump systems in operation worldwide is around 5 billion. Those systems provide the conditions we require for health, comfort, worker productivity, manufacturing, and essential environments for food, pharmaceuticals, and digital data. Dedicated professionals design, build, maintain, and regulate them as well as educate a new generation of practitioners.

Opportunities within the industry abound for young people with a wide range of career aspirations. Advanced cooling technologies need to be implemented in order to expand life required environmental conditions while meeting sustainability requirements of international climate and ozone protection accords. A new generation of cooling champions – engineers, technicians, researchers, educators, policy experts and executives – are needed to create controlled environments modern live requires. The benefits of reaching into a wide diversity of communities for promising talent will be a high campaign priority.

To support the Cooling Champions Campaign contact: ***info@worldrefrigerationday.org***

World Refrigeration Day 26th June around the World, 5 March 2021

Image: WRD

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6. The race is on, but cooling industry needs to accelerate net zero efforts

Paris, Nairobi, London , 29 March, 2021 – Five major cooling suppliers are racing to net zero but they represent fewer than ten per cent of the 54 suppliers assessed in a new report, meaning the industry has a lot of work to do to catch up on climate action and reduce pollution from the sector, currently estimated at 7% of global greenhouse gas emissions

With the world still falling short of meeting the Paris Agreement goals of holding global temperature rise this century to under 2 degrees C, and pursue 1.5 degrees C, action to reduce the climate impact of cooling will be essential.

According to the International Energy Agency, 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. By 2050, space cooling alone will consume as much electricity as China and India today.

The UN has identified cooling as a key sector for action in its **Race to Zero Breakthroughs**, which are intended to galvanise action ahead of the next global climate meeting, COP26, which is due to take place later this year.

However, ***Cooling Suppliers: Who's Winning the Race to Net Zero,*** finds that 49 out of 54 companies assessed have yet to commit to ambitious net-zero targets, despite some efforts to reduce their emissions.

The report – released by **the Race to Zero campaign**, the Kigali Cooling Efficiency Program (K-CEP), Carbon Trust and other partners in the UN Environment Programme-hosted Cool Coalition – assesses cooling firms against three key impact areas defined in the **Cooling Climate Action Pathway**.

These are:

- Super-efficient equipment and appliances: Making super-efficient cooling equipment and smart appliances powered by zero-carbon energy the norm;
- Ultra-low global warming potential refrigerants; and
- Passive cooling: Widespread adoption of measures that avoid or reduce the need for mechanical cooling, including reductions in cooling loads, human-centric design and urban planning.

The report calls on cooling firms to show increased ambition to line up with net-zero commitments from over 100 governments and many other private sector actors.

One company that recently announced new commitments is Johnson Controls, a global leader for smart, healthy and sustainable buildings and producer of cooling equipment. The company has committed to moving its operations to net-zero emissions by 2040. Johnson Controls, which employs 100,000 people in more than 150 countries, is also a member of the Cool Coalition – a group of over 100 companies, governments, cities and organizations working to lower the climate impact of the cooling industry.

"*Johnson Controls is proud of its recent commitment to achieve the most ambitious science-based targets by 2030 and net zero carbon emissions before 2040*," said Clay Nesler, vice president global energy and sustainability at Johnson Controls. "*Smart, healthy and sustainable cooling solutions are key to accelerating the race to zero for our company as well as our customers*."

New tools to accelerate cooling action

To help other companies and countries join the race to net zero, Cool Coalition partners are also releasing a suite of products to guide their actions – with the support of K-CEP and the technical expertise of the Carbon Trust.

The report comes alongside **the Pathway to Net Zero Cooling Action Plan for the COP26 Champions** Team which highlights the areas where progress is needed. The action table has been endorsed by a range of leading organisations and institutions including CLASP, E3G, the Environmental Investigation Agency, IGSD, RMI, UN Environment Programme, University of Birmingham and the University of Oxford.

A **'Cool Calculator'** scenario planning tool is also being launched to help companies and governments run simple calculations on key aspects of cooling decarbonization to enable them to identify the set of solutions that works best for them.

Additionally, the UK's Environmental Investigation Agency (EIA) has launched a **net-zero cooling product guide** that will allow companies, governments and consumers to cut their

cooling footprint by choosing products that are energy-efficient and run on natural refrigerants with ultra-low Global Warming Potential.

"As consumers and producers of cooling look to reduce their carbon footprint, urgent action on both refrigerants and energy efficiency is needed," said Fionnuala Walravens, Senior Campaigner at EIA. *"EIA's Pathway to net-zero cooling product list offers a range of climate-friendly solutions available now."*

The EIA list also calls on governments to do more to support the uptake of sustainable cooling, by outlining cooling plans in their commitments under the Paris Agreement and looking at legislation to speed up the phasing out of hydrofluorocarbons – climate-warming refrigerants that are now being phased out under an international agreement known as the Kigali Amendment to the Montreal Protocol.

"*The development and expansion of net-zero cooling is a critical part of our Race to Zero emissions*," said Nigel Topping, UK High Level Champion for COP26. "*In addition to technological breakthroughs and ambitious legislation, we also need sustainable consumer purchasing to help deliver wholesale systems change, and as such I welcome the EIA cooling products guide as an important contribution to accelerating the race*."

Cool Coalition, 29 March 2021
Image: CCAC website

AFRICA

7. Lessons learned from the enabling activities: the Burkina Faso experience

Samuel Paré, National Ozone Officer in the Ministry of Environment and Economy of Burkina Faso and Bassam Elassaad, International Consultant for UNIDO write about the recently finalized implementation of the Enabling Activities for the HFC phase-down in the West African country.

In the first days of the New Year, the National Ozone Unit (NOU) of the Ministry of Environment, Green Economy, and Climate Change of Burkina Faso was busy preparing the final report on Enabling Activities for HFC phase-down implementation in the country. This important work was being assisted by national and international consultants and UNIDO, who provided support every step of the way. Looking back, the team has a lot to be proud of. First, Burkina Faso was one of the early ratifiers of the Kigali Amendment,

having done so in July 2018. Second, the Enabling Activities project was used as a platform for national communication and stakeholder consultations on institutional arrangements, the review of licensing systems and data reporting of HFC consumption. Finally, the team identified and conceptualized elements for a national strategy that will facilitate the HFC phase-down.

During project implementation, the NOU constantly had one question in mind – what the current situation is, and what changes need to happen for the country to successfully phase-down HFCs. The consultants worked in close collaboration with the NOU team in a methodological manner to tackle those issues. Periodic conference calls were set-up to gauge and calibrate the progress and get input from the NOU team. Some face-to-face events were inadvertently curtailed by the restrictions imposed by COVID-19; however, measures were taken to ensure that the exchange of information is adequate to provide an alternative route to those events.

Factors of Success

Two factors contributed to the success of the project: a knowledgeable and energetic national team supported by an international consultancy and a dedicated UNIDO staff, and the central role that Burkina Faso plays in the regional economic community, which enabled discussions on a regional rather than just national level.

The national team included, apart from the NOU staff, an RACHP consultant who has been involved in various projects related to the Montreal Protocol, and a customs and regulations consultant with intimate knowledge of the local and regional landscape. The two consultants participated in all virtual meetings, which were running on a biweekly basis for a period of over six months. Their input was based on research with further consulting other stakeholders to present a holistic picture of the different issues. An example of the output is four recommendations that the team made to institutionalize and harmonize technicians' training and facilitate certification schemes, especially in the informal sector.

The regional factor played a big role in the preparation and the discussions although the outcome did not yield immediate results. Burkina Faso is a member of ECOWAS, the Economic Community of West African States, and of UEMOA, the West African Monetary Union that within ECOWAS promotes economic integration among countries that share the CFA franc as a common currency. Both communities have regulation on regional levels, especially for labelling and energy efficiency, which means that entities in member states must comply with the national regulations as well as the two regional ones. To come up with recommendations on some of the issues, the enabling activities team had to navigate the complex matrix of regulations and directives issued on the three levels.

Recommendations for Service

Burkina Faso is a low volume consuming (LVC) country with its entire consumption in the servicing sector. The sector comprises close to two thousand formal and informal technicians. Technicians working in the formal sub-sector are dedicated full time owners of medium workshops or employees of larger ones, while those in the informal sector are either seasonal or working without registration. Naturally, the skill level and the training capabilities of the two sub-sectors are different: the formal sub-sector has qualified technicians with earned diplomas and certificates that also received extra training, while those in the informal sub-sector acquired their skills through limited time apprenticeships with technicians that are more qualified.

The Kigali Amendment to the Montreal Protocol brought in an added urgency for ensuring that the skill levels across the two sectors improve to the point where they can handle the challenges posed by the alternative refrigerants in terms of pressure, flammability, or the need to maintain energy efficiency. Technicians having to handle hydrocarbon need to apply the proper security measures for their own safety as well of that of their customers and the public in general. The lack of previous experience means that apprenticeship is no longer effective, which could put the whole informal sector at risk of being marginalized. Racine Kambwole, the national technical consultant, pointed out that this would eventually alienate the informal sector against the environmentally friendly alternative refrigerants and drive the technicians to recommend traditional solutions to their customers.

The team came up with four recommendations for projects to be further considered in the forthcoming strategy to reduce the consumption of HFCs. Two recommendations focus on developing a training and certification curriculum on good refrigeration practices targeted at technicians in the informal sector, as well the program for this training. With a training curriculum tailored to the needs of the country, it is expected that the efficiency and effectiveness of training initiatives carried out in Burkina Faso would increase. This would consequently lead to an improvement of the practices of technicians in the informal sector and pave the way for an intake of natural refrigerants and further reduction in the consumption of all other refrigerants, particularly HFC-134a (56% of the total importation in 2018) and HFC-410A (27.4% of the total importation in 2018).

The third recommendation is for carrying out an in-depth analysis of the national curricula used in secondary and higher education vocational establishments. Burkina Faso has six different types of degrees for the air conditioning and refrigeration field being taught in eight institutes, and there is a need to ensure that these curricula integrate best knowledge on alternative refrigerants.

The fourth recommendation is for developing a set of guidelines for the installation, testing, maintenance, inspection, safe use, and proper disposal of air conditioning units. The guidelines would also include design and cover handling the lower-GWP refrigerant alternatives and their flammable characteristics. An option is to develop a code of good practices based on identified criteria, which would be useful in streamlining and institutionalizing the sector.

Prof. Dr. Samuel Paré, the Montreal Protocol focal point believes that, with proper funding, the implementation of those four recommendations would enable Burkina Faso to apply the needed training across the entirety of the service sector.

HS Code Expansion: National or Regional?

The question first came up when discussing the Harmonized System (HS) code for tariff nomenclature of the World Customs Organization (WCO) to classify and identify HFC refrigerants and blends more closely for reporting purposes. The present code lumps HFCs and the blends under just two six-digit codes. The code is set to change on January 1, 2022; meanwhile, Parties to the Montreal Protocol are mandated to report their consumption of these refrigerants and need identifiable codes to collect data from their respective customs authorities. The interim recommendation made by UNEP is to expand, at the national level, the six-digit code to eight digits using the extra two digits to differentiate among the different substances. Some Parties had applied this expansion successfully.

The national consultant on customs in Burkina Faso, Souleymane Tou, pointed out the impossibility of doing such an expansion on a national level only, since Burkina Faso is

linked to the other ECOWAS countries in a customs agreement and HS codes cannot be altered by any individual member state.

The route through ECOWAS is not an easy one: ECOWAS is made up of countries having three different official languages (English, French, and Portuguese), and communications with their technical and regulatory committees must be in at least two languages and have the support of a few, if not all, members. Moreover, requests by member states are discussed at the pertinent committee meeting which have fixed yearly schedules. Added to this is the complication imposed by COVID-19 by restricting movement and the chance of regional committee meetings where decisions can be made.

Burkina Faso took the lead on initiating contacts with the other ECOWAS countries. The international consultancy provided support with the other francophone member states building on the outcome of a meeting in Guinea Bissau that UNEP had gathered in December 2019 for those countries to discuss this same issue. It became evident that the customs consultant of Benin was the expert on relations with ECOWAS and the team, with the Benin consultant, prepared a draft of a letter petition to the ECOWAS committee for a meeting to explain the background and the requirements for the HS code expansion. The draft had to be approved by the NOUs and customs focal point of all 15 member states, however the pandemic has reduced hopes that the ECOWAS committee will be able to meet to address this issue before the new HS code is in effect on January 1, 2022.

Energy Efficiency Standards & Directives: coherent or conflicting?

For energy efficiency, the integration of national and regional considerations takes a third dimension with both ECOWAS and UEMOA issuing regulation on standards and labels. The team engaged with Bakari Lingani, Energy Engineer at the Directorate General of Energy Efficiency, Ministry of Energy in Burkina Faso, for the information on the national level, and with Charles Diarra, Programme Officer at ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) located in Cape Verde, to discuss developments at the regional level.

To improve the energy efficiency of electrical equipment, Burkina Faso has implemented an energy control policy through the Ministry of Energy, in particular its Directorate General of Energy Efficiency (DGEE) and the National Energy Agency for Renewables Energies and Energy Efficiency (ANEREE). In 2017, the Ministry of Energy of Burkina Faso issued decree No. 2017-1014 defining the standards and requirements for energy efficiency for appliances and equipment and the modalities of their operation. The decree bans the sale of equipment that does not conform to the minimum energy efficiency levels. Equipment that conforms to the energy efficiency requirements can be imported after acquiring the required authorization from the Minister in charge of Commerce with favorable advice from the Minister in charge of Energy. The decree establishes exceptions for equipment with certain technical use.

The minimum energy performance standards (MEPS) for air conditioners are adopted from the ECOWAS standards referenced ECOSTAND 071-2: 2017, which are issued by ECREEE. On the other hand, the directive on labeling was issued by UEMOA in 2019 and adopted by Burkina Faso in June 2020.

Discussions with the Ministry of Energy have focused on the need to update and streamline the local regulations on energy efficiency in line with the model regulation guidelines issued by United for Efficiency (U4E). The U4E regulation guidelines aim to balance ambitious energy performance and refrigerant requirements while limiting adverse impacts on the

upfront costs and of availability of products. “A comprehensive approach includes mandatory, performance-based building energy codes. Neighboring countries should align where practicable to reduce the complexity and cost of compliance for manufacturers, and the challenges of oversight and enforcement for officials. Consistent approaches across countries help yield economies of scale for products that save consumers money on electricity bills, reduce air pollution, mitigate greenhouse gas emissions, and enable greater electrical grid stability.” The team urged Mr. Lingani to take this initiative on a regional level.

Burkina Faso’s Regional Role

In 2018, the Minister in Charge of the Environment accompanied the MP Focal Point Prof. Dr. Samuel Paré to the ASHRAE conference in Las Vegas, Nevada. A meeting with the UNIDO Chief of the Montreal Protocol Division, Mr. Ole Nielsen was arranged in the presence of Mr. Bassam Elassaad of Elassaad & Associates, the international consultancy for Burkina Faso. The minister wanted to discuss the possibility of establishing a regional center of excellence in Burkina Faso for the Francophone African countries to act as an incubator for research and harmonized education. Prof Dr. Paré is in an ideal position to help in the establishment of the center given his position as Vice President of the Thomas Sankara University in Ouagadougou, which is a candidate host for the center. U4E helped establish a similar center for Anglophone Africa at the University of Rwanda and can play a similar role for Burkina Faso.

Lessons Learned

The work on the enabling activities has consolidated the close cooperation of the Burkina team during adverse situations imposed by the COVID-19 pandemic. Adama Sawadogo, Deputy National Ozone Officer for Burkina Faso attributes this to the high sense of responsibility and ethics of the team added to the clear objectives of the enabling activities, which set reasonable and achievable goals.

The first lesson learned is that for any program to work, stakeholders in the whole sector must be informed, trained, and kept involved. This means that the informal service sector can no longer be ignored, and training must be harmonized and streamlined. Incidentally, the work done by RAC sectors associations in Burkina Faso, i.e. AITFB, Association of Refrigeration Engineers and Technicians of Burkina Faso and APFC, Association of Professionals in Refrigeration and Air Conditioning, and U-3ARC, the newly founded Union of Associations of African Actors in Refrigeration and Air Conditioning, which is based in Burkina Faso, will contribute to the formalization of the informal sector through the organization of free workshops and the awareness campaigns in the country.

The other lesson learned is that regional cooperation has become indispensable: programs and initiatives launched on a regional scale are far more effective rather than being repeated inefficiently across neighboring countries.

“Working with the Burkina team has been an invigorating experience; I am amazed by their energy and enthusiasm”, said Sonja Wagner, member of the international consultancy team. “Burkina Faso might have a limited consumption, but its experience will echo large and far across the whole African continent”, said Guillaume Cazor of UNIDO who is coordinating the Enabling Activities project in Burkina Faso.

UNIDO Montreal Protocol Division Newsletter, 4th issue

Image: UNIDO

8. Africa’s sustainable cooling centre gets multi-million funding boost

The new Africa Centre of Excellence for Sustainable Cooling and Cold Chain (ACES) has taken a major step forward in Rwanda with a $3.5 (£2.4 million) million funding boost.

The UK Government’s Department for Environment, Food & Rural Affairs (DEFRA) earmarked this contribution for the Centre’s design and technology kit-out, supporting the work of British universities (Birmingham, Heriot-Watt, Cranfield, London South Bank), the University of Rwanda and its hiring of the first-ACES dedicated academics as host of the Centre, and UNEP’s United for Efficiency (U4E) whose award-winning Rwanda Cooling Initiative with the Rwandan Government provides ACES’ foundation.

ACES will help get farmers’ produce to market quickly and efficiently – reducing food waste, boosting profits and creating jobs, as well as looking to improve cold-chains for vaccines and health, now recognised globally as a key challenge for Covid-19 immunisation.

The Centre is bringing together energy, technology, finance and policy expertise from the UK and in-country. It offers an opportunity for commercial partners to develop and demonstrate pathways of delivering affordable, lowest carbon emissions cooling and cold-chain systems *while* meeting Africa’s social and economic cooling needs. It will provide teaching and industrial collaboration to put into action integrated sustainable cooling solutions.

In collaboration with core technical partners – the University of Birmingham and UNEP U4E –a range of complimentary funding opportunities are being pursued, from the Green Climate Fund to philanthropic and bilateral development agency support mechanisms. With core resources and infrastructure , the Centre will establish a robust business model that enables long-term growth.

Associated ‘Living Labs’ will act as the deployment and implementation arms showcasing how solutions developed at the ACES hub in Kigali can be applied by communities and offer on-the-ground technical and business assistance as an enabling environment for sustainable cold chain to thrive. The first Living Lab in rural Rwanda is anticipated for launch in 2022. Opportunities for additional Living Labs are being explored with other African governments to scale-up the reach of ACES.

Project co-designer and research lead Toby Peters, Professor of Cold Economy at the University of Birmingham, said: *"Farmers need robust means of getting perishable produce to urban markets and medical staff must move temperature-sensitive vaccines to rural communities, but cold chain logistics must be sustainable.*

"The long-term plan is that ACES becomes the pan-Africa research/innovation, knowledge and learning Centre of choice for the cooling and cold-chain sectors – securing industrial and other collaborations to develop its research and reputation – in Rwanda, Africa and low-and middle-income countries around the world. It's an ambitious goal, but we have UK expertise and partnerships in Rwanda and UNEP's portfolio in the wider region to make this happen."

The University of Birmingham and UNEP U4E are engaging international partners and industry to formalize a network of collaborators. ACES will be promoted at major international events later this year, including the UN Food Systems Summit, Montreal Protocol Meeting of the Parties (MOP33) and the UN Climate Change Conference (COP26) to raise awareness and encourage participation.

UNEP's ACES lead and U4E cooling portfolio manager Brian Holuj reflected: "*After over three years of strategic planning and development, we are delighted to have a permanent home and world-class team coming into place at the ACES headquarters in Kigali. The first Living Laboratory is being prepared to set the stage for similar collaborative efforts with showcase communities throughout Africa*."

Cool Coalition, 25 March 2021

Image: CCAC website

ASIA AND THE PACIFIC

9. Pacific Island Countries kick-off implementation of total HCFC phase-out project

Bangkok, Thailand, 12 March 2021 – National Ozone Officers from the Pacific Island Countries (PICs) – Cook Islands, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Palau, Samoa, Solomon Islands, Tonga and Vanuatu – as well as representatives from the Government of Australia, a bilateral implementing agency, and UN Environment Programme (UNEP) OzonAction came together virtually to discuss an action plan for the total phase-out of the remaining hydrochlorofluorocarbon (HCFC) consumption by 1 January 2030.

The PIC Regional Network of Ozone Officers has a unique implementation modality to phase-out consumption of HCFCs. Drawing from the experience gained under Stage I of the HCFC Phase-out Management Plan (HPMP), the regional approach has proven to be effective for the PICs where regional activities are often more efficient and cost-effective. It has also fostered collaboration and sharing of good practices among the National Ozone Officers and increased the visibility of the Montreal Protocol on Substances that Deplete the Ozone Layer and Ozone Depleting Substances (ODS) phase-out work in the region.

The virtual thematic meeting on the implementation of Stage II of the PIC HPMP was organized by OzonAction's Compliance Assistance Programme (CAP) team for Asia and the Pacific on 25 February 2021 and was attended by 25 participants (12 women and 13 men) to jump-start project implementation as approved in November 2020 by the Executive Committee of the Montreal Protocol's Multilateral Fund. The meeting enabled participants to review the approved national and regional components, brainstorm on the approach to coordinate the implementation between PICs, Australia, and UNEP, taking into account the lessons learned from Stage I implementation, and on the delivery of the regional procurement component.

Mr. Shaofeng Hu, Senior Montreal Protocol Regional Coordinator, UNEP Compliance Assistance Programme, Asia and Pacific Office said, “Although the Stage II PIC HPMP is with regional features, the implementation of all the approved activities including both the regional and national is still to be country-driven with support from Australia and UNEP. Each country will be accountable for the regional HPMP, any delays in implementation in one country would have implications on the overall HPMP implementation. This virtual meeting enabled countries and implementing agencies to have a mutual understanding of their roles and responsibilities in the implementation, as well as the proper coordination approach.”

The participants discussed and agreed on a mechanism critical for maintaining effective and timely project implementation, including developing a work plan, tracking and monitoring project delivery, reporting, and maintaining regular communication. The work plan for the delivery of time-bound activities in 2021 was also addressed and agreed upon. The PIC National Ozone Officers shared their experiences from the HPMP Stage I

implementation and provided feedback on how the HPMP Stage II could be implemented more effectively.

Ms. Tumau Neru, Principal Ozone Officer, Samoa, highlighted that “With collective collaboration and contribution from all 12 PICs, we reached a good understanding on the way to move forward for the stage II implementation. We see the importance that everyone must work together in light of the agreed work plan.”

Ms. Annie Gabriel, the representative of the Government of Australia, added that “Being the cooperating implementing agency, we are happy to see the early commitment and collaborative efforts of the PICs for the HPMP stage II implementation. We look forward to working with the PIC National Ozone Units and local industry to assist Refrigeration Air-Conditioning servicing technicians in meeting the challenges of handling HCFC alternative refrigerants, and to help in building stronger training facilities in the region.”

This virtual meeting is a part of the regional OzonAction CAP work plan for 2021 to support countries in meeting and sustaining their Montreal Protocol commitments.

Contact: **Shaofeng Hu**, Senior Montreal Protocol Regional Coordinator, UNEP, Compliance Assistance Programme (CAP), Asia and Pacific Office

The UN Environment Programme, OzonAction, March 2021

Image by Shutterstock

WEST ASIA

الدستور

تعليمات للمواد البيئية الخاضعة للرقابة بموجب بروتوكول مونتريال

تم نشره في الاثنين 29 آذار / مارس 2021. 12:18 صباحاً

عمان - صدرت في العدد الأخير من الجريدة الرسمية، تعليمات جديدة لضبط استخدام واستيراد وإعادة تصدير المواد الخاضعة للرقابة بموجب برتوكول مونتريال وتعديلاته لسنة 2021 بموجب أحكام قانون حماية البيئة.

ونصت التعليمات الجديدة على تشكيل لجنة تسمى اللجنة الوطنية برئاسة أمين عام وزارة البيئة وعضوية مدير عام وحدة الأوزون وممثلين عن وزارت الصحة والزراعة والطاقة المعدنية والتخطيط والصناعة والتجارة والتربية والتعليم ومديرية الجمارك ومديرية صحة البيئة وعن سلطة العقبة الاقتصادية ومديرية الدفاع المدني ومؤسسة المواصفات والمقاييس وغرفة تجارة الأردن وغرفة صناعة الأردن.

وتتولى اللجنة عدة مهام أبرزها، اعتماد السياسات والخطط والبرامج المتعلقة بتمكين المملكة من الالتزام الدولي بتنفيذ متطلبات اتفاقية فيينا لحماية طبقة الأوزون ومتطلبات بروتوكول مونتريال الذي بموجبه تعهدت الدول بحماية طبقة الأوزون من خلال التخلص التدريجي من إنتاج عدد من المواد المسؤولة عن نضوب طبقة الأوزون.

كما تتولى اللجنة جمع وتحليل البيانات المتعلقة باستيراد وإعادة تصدير المواد الخاضعة للرقابة ومنح الموافقات على استيراد وإعادة تصدير المواد الخاضعة للرقابة والمعدات التي تحتوي عليها، وتعزيز الوعي البيئي بأهمية المحافظة على طبقة الأوزون، والإبلاغ عن حالات الإتجار غير المشروع في حال حدوثها.

وكلفت التعليمات وحدة الأوزون في وزارة البيئة بالتنسيق مع القطاعين العام والخاص لتنفيذ برنامج التخلص التدريجي من المواد «الهيدروكلوروفلوروكربونية» المستنزفة لطبقة الأوزون والتي اعتمدتها الدول الأطراف الموقعة على بروتوكول مونتريال. كما حظرت التعليمات إقامة أي منشأة صناعية تستخدم المواد المستنزفة لطبقة الأوزون والواردة في البروتوكول، وحظرت على المصانع استيراد أي من المواد المستنزفة إلا ضمن احتياجات محلية حرجة. (بترا) رلدا حتاملة

10. Instructions for controlled substances under the Montreal Protocol (Jordan)

تعليمات للمواد البيئية الخاضعة للرقابة بموجب بروتوكول مونتريال

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والتربية والتعليم ومديرية الجمارك ومديرية صحة البيئة وعن سلطة العقبة الاقتصادية ومديرية الدفاع المدني ومؤسسة المواصفات والمقاييس وغرفة تجارة الأردن وغرفة صناعة الأردن

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جريدة الدستور، 29آذار / مارس 2021

Aldustur, 29 March 2021
Image: Aldustur website

NORTH AMERICA

11. Ice company fined, required to remedy Clean Air Act violations


United States Department of Justice
THE UNITED STATES ATTORNEY'S OFFICE
DISTRICT of RHODE ISLAND
HOME U.S. ATTORNEY ABOUT DIVISIONS NEWS CIVIL RIGHTS
U.S. Attorneys » District of Rhode Island » News
Department of Justice
U.S. Attorney's Office
District of Rhode Island
FOR IMMEDIATE RELEASE Monday, March 22, 2021
Ice Company Fined, Required to Remedy Clean Air Act Violations

PROVIDENCE – J.P. Lillis Enterprises, Inc., D/B/A Cape Cod Ice, a cold storage warehouse and ice manufacturing facility that stores over 10,000 pounds of anhydrous ammonia at its facility on the banks of the Seekonk River, was fined $90,000 an placed on federal probation for three years by a federal court judge in Providence today for

repeatedly failing to implement a Risk Management Plan (RMP) to be executed in the event of an accidental release of anhydrous ammonia, an extremely hazardous substance.

The facility, located in an industrial area adjacent to residential area, and in the vicinity of an elementary school, was assessed civil penalties by the Environmental Protection Agency as far back as 2012 for failing to develop and submit an RMP, and since has repeatedly been found to contain equipment in need of repair to avoid a potential release of anhydrous ammonia.

Subsequent inspections by EPA, OSHA, and the East Providence Fire Department found the existence of corrosion on ammonia-carrying pipes and on the facility's high- pressure ammonia receiver; the failure of corrosion-preventing insulation on the pipes; and inadequate inspection, testing, and maintenance of the ammonia piping and receiver.

Acting United States Attorney Richard B. Myrus and Tyler Amon, Special Agent in Charge of the Environmental Protection Agency Criminal Investigation's Division Boston Area Office announced today that in addition to a $90,000 fine imposed by U.S. District Court Chief Judge John J. McConnell, Jr., Cape Cod Ice will, within 90 days, engage a qualified independent ammonia refrigeration consultant to conduct an audit that (1) evaluates Cape Cod Ice's compliance with the Clean Air Act and address deficiencies identified by the EPA, OSHA, and East Providence Fire Department and (2) includes a required maintenance inspection program.

Acting United States Attorney Myrus said, "The United States Attorney's Office is committed to working with EPA to ensure that companies doing business in Rhode Island fully comply with the Clean Air Act. Exposure to anhydrous ammonia can cause serious health issues. Today's resolution will help to mitigate the risk of accidental release of ammonia by ensuring that Cape Cod Ice conducts a thorough third-party audit of its ammonia refrigeration system and implements an appropriate Risk Management Plan under the Clean Air Act."

"Protecting Rhode Island communities from hazardous chemical releases is a priority for EPA" said Tyler Amon, Special Agent in Charge of EPA's Criminal Investigation Division. "Today's sentence emphasizes the importance of companies abiding by Risk Management Plans (RMP), put in place to protect workers, emergency responders and the surrounding residents."

Cape Cod Ice is required to submit to the United States Attorney's Office and to United States Probation within 30 days of the completion of the audit an action plan to address the findings of the audit and a timeline of completion of actions to be taken by the company.

Department of Justice, U.S. Attorney's Office, District of Rhode Island, 22 March 2021
Image: DoJ, US Attorney office, Rhode Island District website

EUROPE & CENTRAL ASIA

12. Reports to the EFCTC Action Line of illegal HFC trade lead to criminal investigations

Illegal trade in hydrofluorocarbons (HFCs) is threatening legitimate small businesses, financing organised crime, and ultimately the climate. The European FluoroCarbons Technical Committee (EFCTC) Action Line in 2020 received 111 anonymous reports of suspicious behaviour, leading directly to criminal investigations.

The F-gas regulation aims to phase down HFCs with high GWP through a quota system. Uneven enforcement by EU member states has created an opportunity for criminals to bypass the quota system and import HFCs into the EU illegally. New data recently showed that in 2019, up to a maximum of 31 million tonnes CO_2 equivalent ($MtCO_2e$) could have entered through EU borders illegally.

EFCTC's Action Line (https://efctc.integrityline.org/) is available in 14 languages and has been successful in fighting illegal trade. Of the 111 Action Line reports of possible illegal HFC activities received from across Europe in 2020, 30% originated from Italy. The reports were analysed by the investigation agency contracted by EFCTC, Kroll. In 2020, Kroll prepared 74 evidence packs that have been passed on to EU enforcement authorities and the European Anti-fraud Office, OLAF.

This evidence has helped in some of the 13 seizures of illegal HFCs that have taken place in Europe. The biggest seizure in 2020 was in Romania, with a shipment coming from Turkey, in which customs officials found more than 7,000 cylinders in several trucks[1].

2021 has marked a new step in the EU quota system, as the F-gas regulation sets a reduction of the quota from 63% to 45% compared to pre-2015 level. This takes a large amount of HFCs off the legitimate market, creating new opportunities for smugglers to fill the gap. As a result, EFCTC fears an increase in illegal imports of HFCs this year.

Chairman of EFCTC, Dr Nick Campbell, noted, "Illegal HFC imports are a well-known issue in the industry and the EFCTC Action Line is an effective tool to report it. Insights received via the ActionLine continue to provide unique intelligence from the market and enable Kroll to rapidly identify potential criminal behaviour. It is a crucial source of evidence for enforcement action by EU member states and OLAF and we hope it can lead to more seizures at EU borders, as well as criminal cases in courts leading to dissuasive penalties."

He added, "If you have seen any possible instances of illegally-imported HFCs being offered for sale, please **contact us** "

EFCTC also has a pledge #SayNoToIllegalHFCs for organisations and individuals to commit to doing their part to eradicate the black market for HFCs. Click **here** to find out more.

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[1] **https://ec.europa.eu/anti-fraud/media-corner/news/05-08-2020/76-tonnes-illicit-refrigerant-gases-detained-romaniathanks-olaf_en**

The European Fluorocarbons Technical Committee (EFCTC), 22 March 2021
Image: EFCTC website

13. Extending the F-gas certification scheme to alternative refrigerants

AREA [Air conditioning and Refrigeration European Association] has issued concrete proposals on the extension of the F-gas certification scheme to alternative refrigerants. The proposals are based on the concept of 'alternative refrigerant greenhouse gases' that would make it possible to capture most alternative refrigerants whilst respecting the legal scope of the F-gas Regulation. AREA pleads for mandatory certification on alternative refrigerants as a necessary complement to the existing F-gas provisions in order to ensure safe and efficient handling of these refrigerants that are gradually replacing fluorinated greenhouse gases.

A couple of months ago, AREA alerted on the very low level of training on alternative refrigerants among F-gas trained personnel. We also announced that our experts were working on concrete proposals on mandatory certification on alternative refrigerants, including minimum requirements. Today, we are proud to release a comprehensive set of proposals. These are based on the concept of 'alternative refrigerant greenhouse gases'. Graeme Fox, Chairman of the Refrigerants Working Group, said: "It makes sense to work on the basis of the current F-gas Regulation that already has an established training and certification scheme. Introducing the concept of 'alternative refrigerant greenhouse gases' makes it possible to include most low GWP alternative refrigerants in the environment scope of the existing F-gas legislation. This is essential to avoid reinventing the wheel and delaying the process with a separate legal framework."

AREA's proposals consist of 3 blocks:

- Proposed amendments to the F-Gas Regulation 517/2014: introduction of the concept of 'Alternative refrigerant greenhouse gases' and modifications to Article 10 on training and certification
- Proposed amendments to the core text of Implementing Regulation 2067/2015: inclusion of alternative refrigerant greenhouse gases, modification of company certification
- An updated set of minimum competence requirements (Implementing Regulation 2067/2015, Annex I) based on state-of-the-art standards EN 13313 (ISO/DIS 22712): next to the existing categorisation of F-gas certification for persons, introduction of new categories for alternative refrigerant greenhouse gases, flammables (small and large systems), CO_2

AREA President Marco Buoni said: "*These proposals are the result of a fantastic collaborative exercise that mobilised many experts and leading trainers among the 25 AREA members from 22 European countries. Mandatory certification on alternative*

refrigerants is a major issue for our industry and we wanted to make sure we would not just make requests but actually come forward with concrete and constructive suggestions. I believe our proposals are solid. They are an essential and much needed step forward for the European Union, which could also be taken as an example globally. I look forward to discussing the details with the European Commission and other stakeholders."

The proposals will feed in the ongoing consultation process in preparation for the revision of the F-Gas Regulation.

The Air conditioning and Refrigeration European Association (AREA), March 2021
Image: AREA website

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14. The Institute of Refrigeration (IOR) has just released the programme for its Annual Conference taking place online on 21 and 22 April 2021

Delegates to "**The Journey to Net Zero Heating and Cooling - Beyond Refrigeration 2021**" will be able to enjoy a varied programme featuring case studies that demonstrate how the refrigeration, air conditioning and heat pump sector is responding to the challenge of net zero heating and cooling. The event will include keynotes from Ian Arbon on how energy consumption can be reduced, UNEP will explore why it is necessary to move to Net Zero and Didier Coulomb, Director General of the IIR who will offer a global perspective of the sustainability goals for the refrigeration, air-conditioning and heat pump sector. The event will also include a variety of workshops and short courses.

The conference aims to bring together experts with the knowledge, understanding and reach to help the UK address the challenge of achieving net zero heating and cooling but also to publish a set of technical case study papers that will show technical and nontechnical businesses how they can move from current business as usual practices to a more sustainable way of operation, measuring their progress towards net zero.

The event will be used as a platform to support the UK Government, businesses in a range of sectors and individuals in relevant occupations to achieve national and international environmental objectives while also developing a road map for non-technical specialist business owners. Many themes will feature during the event including balancing the heating and cooling demand, using energy intelligently, making use of best available technology, reducing the need for mechanical cooling.

Attendees will have access to a comprehensive set of conference papers, live webinars of all presentations and question sessions with authors, recordings of all sessions for six

months, key notes giving overviews of policy and global initiatives, and coffee lounge discussion sessions.

Click **here** to find out more about the fees/discounted fees, programme and to register.

ACHR News, 19 March 2021

Image: IOR

FEATURED

OZONE SECRETARIAT

Overview for the meetings of the ozone treaties in 2021

- **11th ORM**, Geneva, Switzerland | 14 - 16 April 2021
- **66th IMPCOM**, Bangkok, Thailand | 12 July 2021
- **43rd OEWG**, Bangkok, Thailand | 12 - 16 July 2021
- **67th IMPCOM**, Nairobi, Kenya (tentative) | 23 October 2021
- **12th COP – 32nd MOP Bureau**, Nairobi, Kenya (tentative) | 24 October 2021
- **12th COP (part II) – 33rd MOP**, Nairobi, Kenya (tentative) | 25 - 29 October 2021

Click **here** for past and upcoming Montreal Protocol Meetings Dates and Venue.

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. **Learn more >>>**

THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL

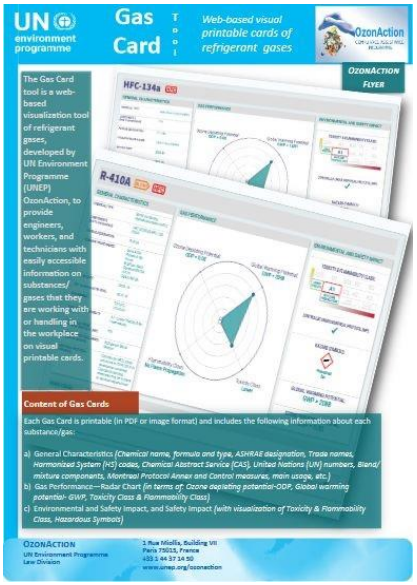
- Click **here** for the Executive Committee upcoming and past Meetings.
- **Executive Committee Primer – 2020** - An introduction to the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol.

OzonAction

OzonAction Compliance Assistance Programme produces and outreaches a wide variety of information and capacity building materials and tools that support the implementation of the Montreal Protocol programs and assist Article-5 countries in meeting the compliance targets. These include publications, technology briefs and factsheets, mobile applications, videos, e-Learning, modelling and database programs and special educational or certification programs.

The section below features several of our most recent products.
Visit OzonAction website for more information,
discover the entire range of products.

Images in this section are by OzonAction



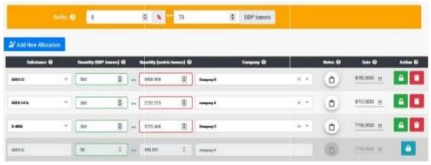
Gas Card Tool: Web-based Visual Printable Cards of Refrigerant Gases developed by the UN Environment Programme (UNEP) OzonAction, to provide engineers, workers, and technicians with easily accessible information on substances/ gases that they are working with or handling in the workplace on visual printable cards. **Content of Gas Cards -** Each Gas Card is printable (in PDF or image format) and includes the following information about each substance/gas: a) General Characteristics (Chemical name, formula and type, ASHRAE designation, Trade names, Harmonized System (HS) codes, Chemical Abstract Service (CAS), United Nations (UN) numbers, Blend/ mixture components, Montreal Protocol Annex and Control measures, main usage, etc.) b) Gas Performance—Radar Chart (in terms of: Ozone depleting potential-ODP, Global warming potential- GWP, Toxicity Class & Flammability Class) c) Environmental and Safety Impact, and Safety Impact (with visualization of Toxicity & Flammability Class, Hazardous Symbols). **More Information -** The Gas Card web based tool is part of UNEP OzonAction's portfolio of activities and tools to assist various stakeholders in developing countries, including customs officers and technicians, to achieve and maintain compliance with the Montreal Protocol on Substances the Deplete the Ozone Layer. In the left navigation bar of the Gas Card tool web page, you will find a list of commonly used HFCs and HFC Blends in different sectors.*

Using the Gas Gard web-based tool

- The Gas Gard tool is available online on the **OzonAction website**
- Read the full **2021 annual iPIC report**

- See the **flyer** introducing the new iPIC platform

** Based on the Overall Analysis of the Results of the Survey of ODS Alternatives Report (conducted in 119 countries from 2012 to 2015)*



HCFC Quota and Licence Tracker - UNEP OzonAction launches a new desktop application to assist with HCFC licences and quotas - National Ozone Officers have the great responsibility of managing the allocation and monitoring of quotas for substances controlled under the Montreal Protocol. This process can be complex with many importers, especially if the country imports a range of different hydrochlorofluorocarbons (HCFCs) and mixtures containing HCFCs. To address this challenge, OzonAction developed a new desktop application that helps Ozone Officers with the tasks of planning, calculating, monitoring and managing consumption quotas and licences. It can be used on a daily basis to track and manage the current year's quota allocations for different importers, or for future planning by trying different scenarios that adjust the type of substances imported, their quantity, or the number of importers. The HCFC Quota and Licence Tracker allows Ozone Officers to see the effect of such scenarios on the national HCFC consumption and helps ensure that the quotas stay within agreed HCFC Phase-out Management Plan (HPMP) targets. For countries that have ratified the Kigali Amendment, in the future OzonAction will extend the tracker to include hydrofluorocarbons (HFCs) once countries begin designing their quota systems for those controlled substances.

Access the:

- **HCFC Quota tracker app**
- **Flyer for more information on the tracker**
- **Short video tutorial on the OzonAction YouTube Channel**

GWP-ODP Calculator Application – Updated

“Quickly, efficiently and accurately convert between values in metric tonnes, ODP tonnes and CO_2-equivalent tonnes”

Data are extremely important for the Montreal Protocol community, and the data reporting formats for both A7 and CP have changed recently, to a large degree triggered by the Kigali Amendment. HFCs, blends, CO_2-equivalent values, etc, now have to be addressed much more frequently by Ozone Officers during their daily work. Sometimes the terminology and values are complex and can be confusing, and it helps to have it all the official facts and figures in one place. Conversion formulas need to be applied to calculate CO_2-eq values from both GWP and metric tonne values. This free app from OzonAction is a practical tool for Ozone Officers to help demystify some of this process and put frequently-needed information at their fingertips.

What’s new in the app:

- An updated more user-friendly interface
- Multilingual interface: English, French and Spanish
- A new **Kigali Amendment mode** - in this mode the GWP values used to calculate the refrigerant blends/mixtures only include GWP contributions from components that are controlled HFCs
- Latest updated ODP and GWP values from the recent reports from the Montreal Protocol technology and scientific expert panels as well as the Intergovernmental Panel on Climate Change (IPCC) reports
- References added for sources of all values
- New refrigerant mixtures (with ASHRAE -approved refrigerant designations)

The new and updated UNEP OzonAction ***GWP-ODP Calculator*** application will help you to convert between values in metric tonnes, ozone depleting potential (ODP) tonnes and CO_2-equivalent tonnes of substances controlled by the Montreal Protocol and their alternatives.

This application, available at no cost, is particularly useful for National Ozone Officers to assist with understanding and calculating quantities of controlled substances, both pure substances and mixtures, for quota assignment, reporting requirements, etc. Other stakeholders interested in ODP and global warming potential (GWP) values of controlled substances and their alternatives will also find this tool useful.

Operation of the application is very simple — just select a substance from the dropdown list and enter the known value in the appropriate field; the calculator will automatically perform the conversion between metric tonnes, ODP tonnes and/or CO_2-equivalent tonnes and display the corresponding converted values. The ODP, GWP and information about the substance is provided. For mixtures, the components of the mixture and their relative proportions (metric, ODP, CO_2- equivalent tonnes) are also calculated.

The updated ***GWP-ODP Calculator*** application now includes a new Kigali Amendment mode. The app can now be used in two different modes: the regular "Actual Values" mode and the "Kigali Amendment" mode. In the Kigali Amendment mode, the GWP values

provided are those specified in the Kigali Amendment to the Montreal Protocol, i.e. GWP values are only assigned to controlled HFCs. In this mode the GWP values used to calculate the refrigerant blends/mixtures only include GWP contributions from components that are controlled HFCs. The user can effortlessly switch between modes.

The OzonAction GWP-ODP Calculator uses standard ODP values and GWP values as specified in the text of the Montreal Protocol to make the conversions. Other ODP and GWP values from the recent reports of the Montreal Protocol Technology and Economic Assessment Panel and Scientific Assessment Panel as well as the Intergovernmental Panel on Climate Change (IPCC) are used when appropriate, with references to sources of all values used. The app includes new refrigerant mixtures (with ASHRAE- approved refrigerant designations).
This application is designed primarily for use by Montreal Protocol National Ozone Units and other related stakeholders. The application was produced by UN Environment Programme (UNEP) OzonAction as a tool principally for developing countries to assist them in meeting their reporting and other commitments under the Protocol and is part of the OzonAction work programme under the Multilateral Fund for the Implementation of the Montreal Protocol.

If you already have the application installed on your device, be sure to update to benefit from the new features. The app can be viewed in English, French or Spanish.

Smartphone Application: Just search for "*GWP-ODP Calculator*" or UNEP in the Google Play store or use the QR code – free to download! If you already have the application installed on your device, be sure to update to benefit from the new features.

Desktop Application: *GWP-ODP Calculator* is also available online on the OzonAction **website**

Watch the new short introductory tutorial **video** on the *GWP-ODP Calculator* - available now on **YouTube**

>>> Read/download the **flyer** for more information

OzonAction WhatGas? Updated

New features:
- An updated more user-friendly interface
- Multilingual interface: English, French and Spanish
- HFCs and HFC containing mixtures
- Latest updated ozone depleting potential and global warming potential values from the recent reports from the Montreal Protocol technology and scientific expert panels as well as the Intergovernmental Panel on Climate Change; as well as the standard

ODP and GWP values as specified in the text of the Montreal Protocol
- References to sources of all values used
- New refrigerant mixtures (with ASHRAE approved refrigerant designations)
- Values for 'actual GWP' and 'Kigali Amendment context' GWP for pure substances and mixtures (i.e. only including GWP values/components assigned to controlled hydrofluorocarbons - HFCs).

The WhatGas? application is an information and identification tool for refrigerant gases: ozone depleting substances (ODS), HFCs and other alternatives. It is intended to provide a number of stakeholders, including Montreal Protocol National Ozone Officers, customs officers, and refrigeration and air-conditioning technicians with a modern, easy-to-use tool that can be accessed via mobile devices or the OzonAction website to facilitate work in the field, when dealing with or inspecting ODS and alternatives, and as a useful reference tool. If the user requires additional information or assistance in identifying a refrigerant gas they are inspecting or that is described in the relevant paperwork, this can be easily obtained by consulting the application.

Using the application:

If you already have the application installed on your device, be sure to update to benefit from the new features.

Smartphone Application: Just search for "WhatGas?" or UNEP in the Google Play store or use the QR code – free to download!

Desktop Application: WhatGas? is also available online on the OzonAction **website**

For more information: Watch the new short introductory tutorial **video** on WhatGas? available on **YouTube**

See/download the **WhatGas? flyer**

Over 10,000 installations on Android and iOS devices to date!

RAC Technician Videos - Full length films!

Two 'full length' videos for refrigeration and air-conditioning (RAC) sector servicing technicians: on 1) Techniques, Safety and Best Practice and 2) Flammable Refrigerant Safety.

The OzonAction Refrigeration and Air-Conditioning Technician Video Series consists of instructional videos on techniques, security and best practice and flammable refrigerant safety. They are intended to serve as a complementary training tool RAC sector servicing technicians to help them revise and retain the skills they have acquired during hands-on training. The

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videos are not intended to replace structured formal technician training, but to supplement and provide some revision of tips and skills and to build on training already undertaken. These videos are based on the successful UNEP OzonAction smartphone application, the RAC Technician Video Series app. This application has been downloaded on more than **86,000** devices since its launch.

Following many requests to make the videos more versatile and better suited to classroom and training settings, OzonAction has responded to this demand and produced two 'full-length' instructional videos.

You may wish to share this message and the flyer with:

- Your national/regional RAC associations
- Training or vocational institutes
- Master RAC trainers in your country
- Any other interested national stakeholders

You can watch these videos on the OzonAction YouTube Channel:

- **Techniques, Safety and Best Practice**
- **Flammable Refrigerant Safety**

The videos are also available for download by request from UNEP OzonAction: **unep-ozonaction@un.org**

If you prefer to access the video clips via the OzonAction smartphone application, just search for "RAC Technician Video Series" or UNEP in the Google Play Store and iTunes/App Store or scan the QR code–

Free to download!

The flyer is available from the **OzonAction website**.

Refrigerant Cylinder Colours: What has Changed

A new UNEP OzonAction factsheet on the new AHRI revised guideline on a major change to refrigerant cylinder colours

One of the ways in which refrigeration cylinders are quickly identified is by cylinder colour. Although there was never a truly globally-adopted international standard, the guideline from the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) although not required by law was used by the vast majority of industry and chemical producers around the world.

An AHRI revised guideline, first published in 2015, now removes paint colour assignments for refrigerant containers and specifies that all refrigerant containers should have the same paint colour from 2020 onwards.

NOOs and technicians should be aware of this change and inform national stakeholders, as well as familiarising themselves with relevant container labels and markings for refrigerants.

Read/download the **factsheet**

Update on new refrigerants designations and safety classifications

The latest version of the factsheet providing up to date information on refrigerant designations and safety classifications is now available (September 2020 update).

The factsheet, produced by **ASHRAE** in cooperation with **UN Environment Programme OzonAction** is updated every 6 months.

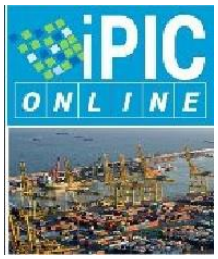
The purpose is to provide an update on ASHRAE standards for refrigerants and to introduce the new refrigerants that have been awarded an “R” number (or ASHRAE designation) over the last few years and which have been introduced into the international market.

Read/download the **factsheet**

The factsheet, as well as more information on ASHRAE-UNEP joint activities and tools, is also available on the **ASHRAE UNEP Portal**.

Contact: **Ayman Eltalouny**, OzonAction, UN Environment Programme

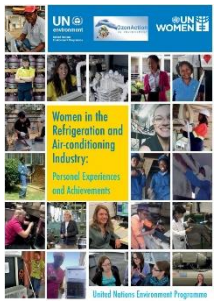
OzonAction's iPIC platform - Updated



Collaboration between China and Thailand using OzonAction's informal Prior Informed Consent (iPIC) system has resulted in the prevention of a huge consignment of ozone-depleting and climate damaging hydrochlorofluoro-carbons (HCFCs).

Those chemicals, which are primarily used as refrigerants for air conditioners and fridges, are controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer and are being phased out by all countries according to a specific timeline.

Women in the refrigeration and air-conditioning industry: Personal experiences and achievements



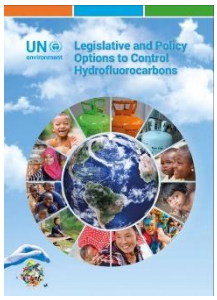
The United Nations Environment Programme's (UNEP), OzonAction, in cooperation with UN Women, has compiled this booklet to raise awareness of the opportunities available to women and to highlight the particular experiences and examples of women working in the sector and to recognise their successes.

All of the professionals presented in the booklet are pioneers. They are role models whose stories should inspire a new generation of young women to enter the weld and follow in their footsteps.

Read/download the **publication**

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.

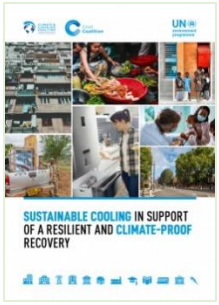
This booklet contains a recommended set of legislative and policy options which the developing (Article 5) countries may wish to consider for implementation. It is intended to be a guide/tool for

countries.

Read/download

Latest issue of Centro Studi Galileo magazine,
Industria & Formazione, n. 2 - 2021
(in Italian).

Sustainable Cooling in support of a Resilient and Climate Proof Recovery, Report by the Climate and Clean Air Coalition (CCAC), 2021



Solar Cooling (2020), 40th Informatory Note on Refrigeration Technologies. **Summary -** Solar cooling is a promising and environmentally friendly technology that can help meet the growing global demand for space cooling. Solar cooling can be achieved by various technologies. The two main commercial options are photovoltaic (PV)-driven vapour compression chillers and heat-driven cooling machines powered by solar collectors. Thermal cooling equipment can be coupled with various types of solar collectors with different efficiencies and costs. Overall system efficiencies of PV-driven and solar thermal-driven plants may not have such different values.

Economic analysis indicates that the investment cost for the PV solution is at least half that of other systems. Solar cooling may have a very positive environmental impact by reducing the use of fossil fuels, and the technology may be considered mature to compete with conventional cooling equipment.

** This Informatory Note is an update of a previous version published in April 2017. It was prepared by Renato Lazzarin (President of IIR Section E).*

A Summary for policy makers - Solar Cooling 2020 is available in English and French languages.

International Institute of Refrigeration, March 2021

Leaks, maintenance and emissions: Refrigeration and air conditioning equipment report details common faults identified in both residential and commercial refrigeration and air conditioning equipment. The report also lists the impacts of these faults and how routine maintenance of the equipment has the potential to significantly reduce electricity use, refrigerant leaks and emissions.

The research was supported by an extensive survey of international and domestic literature included as Appendix B to the report.

Australian Government, Department of Agriculture, Water and the Environment, Expert Group, 2021

MISCELLANEOUS

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

The United Nations Environment Programme, 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 Programme, OzonAction

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

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Prepared by: Samira Korban-de Gobert
Reviewed by: Ezra Clark

If you wish to submit articles, invite new subscribers, please contact:
Samira Korban-de Gobert,
samira.degobert@un.org