

OzoNews

A fortnightly electronic news update on ozone and climate protection and the implementation of the Montreal Protocol brought to you by OzonAction

Volume XXI | 15 April 2021

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GLOBAL

1. Kigali Amendment latest ratifications

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

[Syrian Arab Republic, 5 April 2021](#)

[Cambodia, 8 April 2021](#)

[Dominican Republic, 14 April 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

2. ASHRAE and UN Environment Programme Launch Three-Year Workplan

ATLANTA (April 15, 2021) – ASHRAE and the United Nations Environment Programme (UNEP) announced the launch of its 2021-23 workplan. The workplan's theme is "*Refrigeration Management for Developing Economies*" and was signed by Charles E. Gullledge III, P.E., 2020-21 ASHRAE President and James S. Curlin, Acting Head of UNEP OzonAction Programme.



In 2007, ASHRAE and UNEP OzonAction, signed an agreement aimed at promoting the adoption of state-of-art technologies and practices in developing countries, that avoid the use of ozone depleting substances and promote the deployment of lower global warming potential (Lower-GWP) refrigerants. The two global organizations also worked to offer tools and knowledge to help in eliminating emissions of refrigerants while servicing refrigeration and air conditioning applications. Both parties renewed their commitment of the continuing strategic partnership through a new umbrella MOU signed in 2019, replacing the original 2007 agreement. This is the fifth joint workplan.

The theme of the workplan recognizes the important role that refrigeration and air conditioning play in developing countries both in terms of societal benefits, ranging from protecting the food supply and vaccine storage to cooling for increased comfort and

productivity, as well as environmental goals, including compliance with international commitments. The workplan emphasizes the deployment of all ASHRAE-UNEP developed tools and programs, to make them reachable and accessible to different stakeholders in developing countries.

“One of the most important elements of ASHRAE’s work plan with UNEP is our collective ability to contribute meaningful resources to the critically important challenge of shifting to the use of refrigerants with lower global warming potential,” said Gullledge “We are delighted to continue our work with UNEP as we share knowledge and expertise to prioritizing the adoption of energy efficient solutions that lessen the impact of ozone depletion.”

“By offering a suite of state-of-art products and services, UNEP OzonAction and ASHRAE are helping to connect industry and policy-makers in developing countries to enhance environmental performance in the critical refrigeration and air conditioning sector. This partnership helps those countries meet their international commitments and ultimately to realize the Sustainable Development Goals (SDGs),” said Curlin. “The successful ASHRAE-UNEP cooperation model has helped us, UNEP OzonAction, to build similar meaningful partnerships with other organizations and associations.”

All ASHRAE-UNEP products and services included in the joint workplans are offered free of charge and are accessible to National Ozone Units (NOUs) and certain refrigeration and air conditioning sector stakeholders in developing countries through ASHRAE and UNEP OzonAction.

To view the complete work plan, please visit >>> [ASHRAE UNEP Portal](#).

Contact:

[Ayman Eltalouny](#), OzonAction, UN Environment Programme

[Karen Buckley Washington](#), ASHRAE Public Relations Specialist

Image: ASHRAE UNEP Portal

3. Report of the Eighty-fifth Meeting of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol

Introduction

1. In accordance with decision XXXI/14 of the Thirty-First Meeting of the Parties to the Montreal Protocol, the members of the Executive Committee for 2020 were:

- (a) Parties not operating under paragraph 1 of Article 5 of the Protocol: Australia, Belgium (Vice-Chair), the Czech Republic, Japan, Switzerland, the United Kingdom of Great Britain and Northern Ireland and the United States of America; and
- (b) Parties operating under paragraph 1 of Article 5 of the Protocol: Bahrain, Bangladesh, Chile, Djibouti, India, Rwanda (Chair) and Suriname.



2. In light of the outbreak of the coronavirus disease (COVID-19), which was characterized as a pandemic as assessed by the World Health Organization on 11 March 2020, it was not possible to convene the 85th meeting of the Executive Committee of the Multilateral Fund in Montreal, Canada, from 25 to 29 May 2020, as had been planned. Instead, Executive Committee members agreed inter alia:

- (a) To postpone the 85th meeting to 19 to 22 July 2020, on the understanding that it might be further postponed or cancelled in light of the evolution of COVID-19; and
- (b) To implement, on an exceptional basis and without setting a precedent, the intersessional approval process and to extend it to the reports on projects with specific reporting requirements recommended for blanket approval, to project proposals recommended for blanket approval, and to project proposals where all outstanding issues had been addressed and submitted for individual consideration.

3. The intersessional approval process for the 85th meeting was held from 21 May 2020 to 3 June 2020 through an online password protected forum and was participated by the Executive Committee.

4. In accordance with the decisions taken by the Executive Committee at its Second and Eighth meetings, representatives of the United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP) both as implementing agency and as Treasurer of the Fund, the United Nations Industrial Development Organization (UNIDO) and the World Bank participated in the process as observers. The Executive Secretary of the Ozone Secretariat was also invited to participate in the process as observer.

5. Due to the evolving situation of the pandemic, the 85th meeting was further postponed to be held back to back with the 86th meeting in Montreal, Canada, from 2 to 6 November 2020 noting inter alia that the 85th meeting would be a short meeting lasting up to two hours, to adopt a revised provisional agenda, to take note of Secretariat activities and the status of contributions and disbursements of the Multilateral Fund as at 31 May 2020, and to adopt the draft report of the meeting, which would consist of those items approved under

the intersessional approval process established for the 85th meeting. These meetings were postponed again to 8 to 12 March 2021.

6. In accordance with decision XXXII/9 of the Thirty-Second Meeting of the Parties to the Montreal Protocol, the members of the Executive Committee for 2021 were:

(a) Parties not operating under paragraph 1 of Article 5 of the Protocol: Australia, Belgium (Chair), Czechia, Japan, Switzerland, the United Kingdom of Great Britain and Northern Ireland and the United States of America; and

(b) Parties operating under paragraph 1 of Article 5 of the Protocol: Armenia, Bahrain (Vice-Chair), China, Djibouti, Paraguay, Suriname, and Zimbabwe.

7. On 5 February 2021, Executive Committee members were informed that the postponed 85th and 86th meetings could not be held in Montreal, Canada, from 8 to 12 March 2021, given several measures in place including confinement and travel restrictions due to changes in the epidemiological situation in the Quebec province and Canada.

8. During consultations with Executive Committee members on the revised contingency plan, members felt that approval of the meeting report could take place without further postponing it, and it was agreed that the Secretariat would finalize the report of the 85th meeting and post it on its website as an advance version of the report so that the Executive Committee could approve it during its online meeting to be held on 9 April 2021.

9. The postponed 85th meeting was held online on 9 April 2021 and was attended by representatives of the Executive Committee for 2021

10. In accordance with the decisions taken by the Executive Committee at its Second and Eighth meetings, representatives of UNDP, UNEP as both implementing agency and Treasurer of the Fund, UNIDO and the World Bank attended the meeting as observers.

11. [The Acting Executive Secretary of the Ozone Secretariat was also present.]

12. Representatives of the [Alliance for Responsible Atmospheric Policy], [the Environmental Investigation Agency], and [the Institute for Governance and Sustainable Development] also attended as observers. [...]

See also >>>

- [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

4. U.S.-China Joint Statement Addressing the Climate Crisis

U.S. Special Presidential Envoy for Climate John Kerry and China Special Envoy for Climate Change Xie Zhenhua met in Shanghai on April 15 and 16, 2021, to discuss aspects of the climate crisis. At the conclusion of the discussion, the two Special Envoys released the following joint statement.



Begin text:

1. The United States and China are committed to cooperating with each other and with other countries to tackle the climate crisis, which must be addressed with the seriousness and urgency that it demands. This includes both enhancing their respective actions and cooperating in multilateral processes, including the United Nations Framework Convention on Climate Change and the Paris Agreement. Both countries recall their historic contribution to the development, adoption, signature, and entry into force of the Paris Agreement through their leadership and collaboration.
2. Moving forward, the United States and China are firmly committed to working together and with other Parties to strengthen implementation of the Paris Agreement. The two sides recall the Agreement's aim in accordance with Article 2 to hold the global average temperature increase to well below 2 degrees C and to pursue efforts to limit it to 1.5 degrees C. In that regard, they are committed to pursuing such efforts, including by taking enhanced climate actions that raise ambition in the 2020s in the context of the Paris Agreement with the aim of keeping the above temperature limit within reach and cooperating to identify and address related challenges and opportunities.
3. Both countries look forward to the US-hosted Leaders Summit on Climate on April 22/23. They share the Summit's goal of raising global climate ambition on mitigation, adaptation, and support on the road to COP 26 in Glasgow.
4. The United States and China will take other actions in the short term to further contribute to addressing the climate crisis:
5. a. Both countries intend to develop by COP 26 in Glasgow their respective long-term strategies aimed at net zero GHG emissions/carbon neutrality.
6. b. Both countries intend to take appropriate actions to maximize international investment and finance in support of the transition from carbon-intensive fossil fuel based energy to green, low-carbon and renewable energy in developing countries.
7. c. They will each implement the phasedown of hydrofluorocarbon production and consumption reflected in the Kigali Amendment to the Montreal Protocol.
8. The United States and China will continue to discuss, both on the road to COP 26 and beyond, concrete actions in the 2020s to reduce emissions aimed at keeping the Paris Agreement-aligned temperature limit within reach, including:
 - a. Policies, measures, and technologies to decarbonize industry and power, including through circular economy, energy storage and grid reliability, CCUS, and green hydrogen;
 - b. Increased deployment of renewable energy;

- c. Green and climate resilient agriculture;
 - d. Energy efficient buildings;
 - e. Green, low-carbon transportation;
 - f. Cooperation on addressing emissions of methane and other non-CO₂ greenhouse gases;
 - g. Cooperation on addressing emissions from international civil aviation and maritime activities; and
 - h. Other near-term policies and measures, including with respect to reducing emissions from coal, oil, and gas
9. The two sides will cooperate to promote a successful COP 26 in Glasgow, aiming to complete the implementation arrangements for the Paris Agreement (e.g., under Article 6 and Article 13) and to significantly advance global climate ambition on mitigation, adaptation, and support. They will further cooperate to promote a successful COP 15 of the Convention on Biological Diversity in Kunming, noting the importance of the post-2020 Global Biodiversity Framework, including its relevance to climate mitigation and adaptation.

[U.S. Department of State, Office of the Spokesperson, 17 April 2021](#)

Image: US DoS website

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

AFRICA

6. Zimbabwe: Ministry of Environment, National University for Science and Technology Ink Climate Deal

The Ministry of Environment, Climate, Tourism and Hospitality Industry has signed a Partnership Agreement on climate change mainstreaming research programme with the National University for Science and Technology (NUST), an accord which seeks to roll out programmes and projects that supports climate adaptation.



Under the agreement, the participating universities will offer training and undertake conventional researches to Provincial Development Committees (PDCs) as a tool for analysing impacts and supporting innovations to upscale climate change national adaptation strategies.

The Partnership Agreement will be initiated under the National Adaptation Plan (NAP), a process that succour countries to conduct a comprehensive, medium and long-term climate adaptation planning. [...]

At the same event [signing of a Partnership Agreement] Minister Ndlovu handed over the technology equipment to Bulawayo Polytechnical College as part of the capacity building support to all seven polytechnics that offer training in refrigeration and air conditioning. He said that the donation of technology equipment was part of Ministry's efforts in enabling activities for the Hydro-Fluorocarbons phase down in the refrigeration and air conditioning sector.

"My Ministry through the National Ozone Unit is implementing the hydrochlorofluorocarbon (HCFC) phase out management plan (HPMP) and the hydrofluorocarbon (HFC) phase down programme in line with the provisions of the Montreal Protocol on substances that deplete the ozone layer.

"Under the HPMP and the HFC phase down programmes, the Ministry is assisting in the training of refrigeration and air conditioning practitioners in collaboration with the country's seven Polytechnics that offer courses in refrigeration and air conditioning," Minister Ndlovu has said.

He chronicled that the exercise will be focusing on polytechnics training of technicians in "Good Refrigeration Practices" as well as safe use of refrigerants such as hydrocarbons.

"As we all know, hydrocarbons are being adopted as they are environmentally sound replacements for HCFCs and HFCs. Assistance has been given to polytechnics in the form of tools, equipment and capacity development. [...]

[The Herald \(Harare\), 25 March 2021](#)

Image: Wikipedia



ASIA AND THE PACIFIC

7. World Bank [cold chain] project in Bangladesh

The International Institute of Refrigeration (IIR) signed an agreement with the World Bank to develop a cold chain in Bangladesh, in partnership with British and Bangladeshi universities.

The project entitled “Technical Assistance on Clean and Energy Efficient cooling solutions for Livestock Supply Chain” will provide the analytical underpinning to inform the Livestock and Dairy Development Project (LDDP) in Bangladesh. This work will assess the cooling needs in the meat and dairy value chains and provide advice on technically and financially feasible cooling solutions that would help promote the adoption of efficient and more climate-friendly cold chains. It will also contribute to the development of an enabling environment for the uptake of sustainable cold chain solutions.

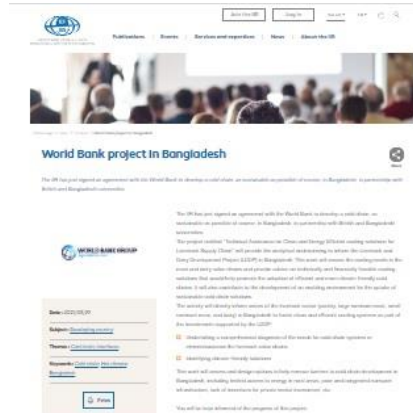
The activity will directly inform actors of the livestock sector (poultry, large ruminant meat, small ruminant meat, and dairy) in Bangladesh to foster clean and efficient cooling systems as part of the investments supported by the LDDP:

- Undertaking a comprehensive diagnosis of the needs for cold chain systems or elements across the livestock value chains
- Identifying climate-friendly solutions

This work will assess and design options to help remove barriers to cold chain development in Bangladesh, including limited access to energy in rural areas, poor and congested transport infrastructure, lack of incentives for private sector investment, etc.

[International Institute of Refrigeration, 29 March 2021](#)

Image: International Institute of Refrigeration website



8. Tech drives Beijing 2022 towards green and safe

The five venues for the Beijing 2022 Olympic and Paralympic Winter Games have completed construction of their ice-making infrastructure, which will now be tested.



BEIJING - The "Experience Beijing" ice sports testing program came to a successful end on Saturday [11 April 2021] as Beijing 2022 welcomed its 300-day countdown.

Events of six ice sports were staged in five Olympic venues in downtown Beijing during the 10-day tests.

With three of the venues being legacies of the 2008 Summer Games and advanced technologies in place, Beijing manifests its determination to host an environmentally-friendly Games that are also safe under COVID-19 scenarios through the testing program. [...]

"Now the newest thing here, of course, is the new technology in ice-making, which we've been told is much more environmentally friendly, which we're very pleased," the first secretary and deputy head of mission at the Embassy of Iceland added.

Huntingdon-Williams is referring to using carbon dioxide instead of ozone layer-harming Freon as refrigerants in ice-making, which will reduce carbon emission equivalent to that of 3,900 cars a year, cutting the number to nearly zero. [...]

[China Daily, 11 April 2021](#)

Image: chinadaily.com.cn website

WEST ASIA

9. Jordan Environment Ministry signs 6 agreements with building insulation companies

AMMAN — The Ministry of Environment on Thursday signed six agreements with building insulation companies, the Jordan News Agency, Petra, reported.

With a grant valued at \$247,000 offered by the United Nations Industrial Development Organisation's (UNIDO) Montreal Protocol, the agreements were signed by Environment Minister Nabil Masarweh and the companies' executives.

The agreements aim to get rid of 82 tonnes of Hydrochlorofluorocarbons (HCFCs) that affect the ozone layer and the climate, and to replace these compounds with hydrofluoroolefins which are, in contrast, environmentally friendly and sustainable.



It is noteworthy that the first phase of the project was completed with a \$1.64 million fund, whereas the second phase of the agreements is expected to be concluded by the end of December 2021.

Masarweh stressed the ministry's keenness to strengthen the partnership with the public and private sectors, provide technical and technological support and build national capacities for all sectors that use substances that affect ozone and climate.

He affirmed Jordan's commitment to implementing the agreements signed with the Executive Committee managing the Montreal Protocol and UNIDO, according to the timeframe set by the Montreal Protocol.

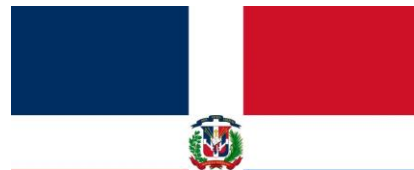
UNIDO Country Representative Sulafa Mdanat highlighted UNIDO's preparedness to provide the necessary funding and technical support to enable the public and private sectors to implement projects according to the latest environmentally sound technology and aid Jordan in fulfilling its international obligations.

[The Jordan Times, 1 April 2021](#)

Image: The Jordan Times website

LATIN AMERICA AND CARIBBEAN

10. The Dominican Republic, seeking greater ambition in the fight against climate change, defines new actions in the field of refrigeration and air conditioning



The government of the Dominican Republic has defined ambitious actions on refrigeration and air conditioning as a result of a successful process to improve and update the Nationally Determined Contribution (NDC) that involved all stakeholders in the Dominican territory. The NDC-RD 2020 was submitted to the UNFCCC in December 2020.

The Dominican Republic is extremely vulnerable to the impacts of global climate change¹ given its status as an island country, its humid tropical climate, and its exposure to extreme hydrometeorological events. At the same time, an increase in the demand for air conditioning, mainly in public and commercial buildings and the hotel sector. In addition,

demand is expected to increase for refrigeration products, which are essential to preserve and extend the life of food and to ensure the integrity of medicines and vaccines. Air conditioning equipment is one of the most energy-intensive appliances and a contributor to peak demand on the electricity grid. Refrigerators are ubiquitous and also contribute considerably to electricity consumption. This electricity is largely produced from fossil fuels² that generate greenhouse gas (GHG) emissions.

Most of the refrigerant gases currently in use have a high global warming potential. According to Milagros De Camps, Vice Minister of International Cooperation, *“The refrigeration and air conditioning sector contributes to 10% of global GHG emissions. As this is a key sector in the Dominican Republic, we want to set ambitious goals to reduce its environmental impact and provide these services in a more sustainable way, which will bring significant benefits to the country.”*

To realise this change, the new NDC has established initiatives that offer greater clarification, ambition and transparency to target a 27% reduction (20% conditional on international support, 5% by the national private sector, 2% by the Dominican state) in its emissions by 2030 – 2% more ambitious than the original NDC submitted in 2015. To help realise this target, a National Cooling Strategy (ENRAA-RD) has been developed under the leadership of the Ministry of Environment and Natural Resources, the Ministry of Energy and Mines and the National Climate Change and Clean Development Mechanism Council (CNCCMDL), with support from the United Nations Environment Programme’s (UNEP) United for Efficiency (U4E) initiative as part of its Caribbean Cooling Initiative (CCOOL). *“The air conditioning and refrigeration sector represents a significant share of the national electricity consumption and we must take action on energy efficiency and conservation to reduce inefficient consumption and reduce GHG emissions,”* says Omar Dotel, Directorate of Environmental Affairs and Climate Change, Ministry of Energy and Mines.

This effort, coupled with technical assistance from UNEP-U4E, has contributed to identifying different carbon dioxide equivalent (CO₂e) mitigation options for the energy efficiency component of the NDC, including in the refrigeration and air-conditioning sub-sector. *“The measures that will be adopted to increase the efficiency of refrigeration and air conditioning equipment represent an important contribution to GHG reductions in the energy sector and are key to achieving the new country ambition. The ENRAA-RD, aligned to this effort, will have an important contribution to the Dominican Republic’s NDC-RD 2020 mitigation commitments,”* says Max Puig, Executive Vice President of the CNCCMDL.

These measures include introducing minimum energy efficiency performance standards and labelling for room air conditioners and domestic refrigerators and development of replacement programs for these products in the residential and commercial sectors. Measures also include the implementation of best practices for control, monitoring and data collection in the market, which prevent low efficiency products from entering and dominating the market. Altogether, these actions have the potential to reduce emissions by at least 4.3 million tonnes of CO₂e, which will contribute significantly to achieving the country’s 2030 target.

“The measures are aligned with the energy savings objectives laid out in the draft Energy Efficiency Law. The approval of the ENRAA-RD will strengthen the range of available actions to establish air conditioning and cooling solutions that result in financial savings for consumers and reduce the environmental impact of energy consumption.” says Alfonso

Rodriguez, Deputy Minister of Energy Saving and Efficiency of the Ministry of Energy and Mines.

The Dominican Republic is committed to doing its part to realize the international goal of limiting global average temperature increase to 1.5 degrees Celsius (°C), and no more than 2°C. CCOOL, which was enabled through funding support by the Kigali Cooling Efficiency Program, is leveraging this leadership and momentum in the Dominican Republic to encourage similar actions elsewhere in Latin America and the Caribbean.

¹ "Global Climate Risk Index 2020", Germanwatch.

² "Approximately 88% of the country's electricity generation comes from fossil fuels (National Energy Information System, 2019)

[Cool Coalition, 14 April 2021](#), quoting [United4efficiency](#) Image: wikimedia

NORTH AMERICA

11. Bill Regulating Powerful Greenhouse Gases Passes Legislature, on its Way to Governor's Desk

OLYMPIA – The Washington House of Representatives voted 56-42 today to concur with Senate amendments and send HB 1050, a bill to regulate hydrofluorocarbons (HFCs), to Gov. Inslee's desk. The Senate passed the bill on April 7 with a vote of 30-19. Sponsored by Rep. Joe Fitzgibbon (D-West Seattle), the bill sets a maximum global warming potential threshold and applies strict regulations for ozone depleting substances to HFCs.

"HFCs are an extremely potent greenhouse gas, and while they are still a small proportion of overall greenhouse gas emissions, their use is growing," said Fitzgibbon. "This bill is the biggest step the Legislature has taken this year to protect the climate."

Primarily used in cooling and refrigeration, HFCs are roughly 1,400 times more damaging to the climate than carbon dioxide. The Legislature first regulated HFCs in 2019, but this legislation goes a step farther by officially designating them as an ozone depleting substance and setting maximum thresholds. The bill also directs the Department of Ecology to set up a refrigerant management program to safely manage and dispose of HFCs going forward.

The screenshot shows the top of a website page for Washington State House Democrats. The header includes the text "WASHINGTON STATE HOUSE DEMOCRATS" and navigation links for "Home", "News", "Media", "Legislators", and "Contact". The main heading of the page is "Bill Regulating Powerful Greenhouse Gases Passes Legislature, on its Way to Governor's Desk" with a date of "April 12, 2021". Below the heading, there are several paragraphs of text providing details about the bill (HB 1050), its passage by the House and Senate, and its purpose in regulating hydrofluorocarbons (HFCs) and ozone-depleting substances. The text mentions that HFCs are roughly 1,400 times more damaging to the climate than carbon dioxide and that the bill sets a maximum global warming potential threshold and applies strict regulations for ozone depleting substances to HFCs. It also notes that the bill directs the Department of Ecology to set up a refrigerant management program to safely manage and dispose of HFCs going forward.

“There are safer alternatives to these chemicals. Since we first adopted our standards in 2019, we have seen manufacturers step up to the plate with alternatives, states across the country adopting our legislation, and the US Congress taking bipartisan action to accelerate the transition away from these chemicals,” said Fitzgibbon. “Washington’s policy leadership has not only improved our environmental quality but helped move the entire country towards transitioning away from these dangerous chemicals.”

The reduction called for in HB 1050 will reduce the climate impact of refrigerants used in air conditioners by roughly 70% and in commercial refrigeration systems by around 90%. The bill is modeled on regulations recently approved by the California Air Resources Board.

The US Congress passed a bill in December of 2020 to require a 85% economy wide phase down of the HFC refrigerant supply over the next 15 years. This will avoid the equivalent of over 900 million metric tons of CO2 equivalent by 2035.

[Washington State House Democrats, 12 April 2021](#)

Image: Washington State House Democrats website

See also >>> [Natural Resources Defense Council \(NRDC\), Industry, Others Urge EPA to Curb Climate-Damaging HFCs](#), 13 April 2021 [Environmental Investigation Agency \(EIA\) Petition to EPA Under AIM Act](#), 13 April 2021

12. How to Win the HFC Phasedown - AHRI Webinar



Learn how the hydrofluorocarbon (HFC) phasedown and American Innovation and Manufacturing Act will impact the refrigerant supply chain.

The How to Not Only Survive, but "Win" the Refrigeration Industry HFC Phasedown webinar will feature an outstanding panel of experts to discuss industry best practices to support a smooth HFC transition:

- Tim Anderson, Hussmann Corporation
- Rajan Rajendran, Emerson Climate Technologies
- Stephen Spletzer, The Chemours Company

- Helen Walter-Terrinoni, AHRI



Register [here](#)

[Air Conditioning, Heating, and Refrigeration Institute](#) (AHRI), April 2021,
Contact: [Lauren Miller](#)

Image: AHRI website

EUROPE & CENTRAL ASIA

13. Green Cooling Summit 2021: Registration open

The GIZ and the German Environment Agency (UBA) on behalf of the Federal Ministry for the Environment (BMU) are holding the international Green Cooling Summit which addresses the question of how to implement the Kigali Amendment to the Montreal Protocol. The main issue will be the replacement of hydrofluorocarbons (HFCs) especially in the air conditioning and refrigeration sector.



By 2047, developed and developing countries have to reduce their HFC consumption stepwise by 80% according to the Kigali Amendment. From all fields of HFC application, the refrigeration and air conditioning (RAC) sector is the most affected one.

The three-day event will highlight political approaches to implementation by individual countries and the availability of energy-efficient technologies with climate-friendly natural refrigerants in the RAC sector. Besides technical experts, the Green Cooling Summit addresses authorities and enterprises which are end-users of refrigeration and air conditioning technology. In addition, the programme offers interesting contributions for researchers.

The event is organised by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the German Environment Agency (UBA) on behalf of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).



[Programme and registration](#)

Participation is free of charge.

Video: Green Cooling Summit 2021 website

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 OzonAction 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](#)

The Gas Card tool is a web-based visualization tool of refrigerant gases, developed by UNEP 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:

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- Environmental and Safety Impact, and Safety Impact (with visualization of Toxicity & Flammability Class, Hazardous Symbols)

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- 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)*



The screenshot shows a web-based application interface for tracking HCFC quotas. It features a header with a search bar and navigation icons. Below the header is a table with columns for 'Licence #', 'Quantity (kg)', 'Licence #', 'Quantity (kg)', 'Licence #', 'Quantity (kg)', and 'Licence #'. The table contains several rows of data, with some cells highlighted in red. The interface also includes various input fields and buttons for data entry and management.

[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 CO₂-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, CO₂-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 CO₂-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 CO₂-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 CO₂-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, CO₂- 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 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](#)

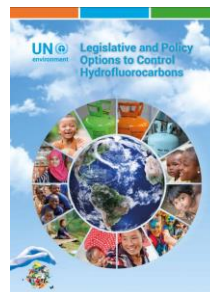


PUBLICATIONS

[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. 3 - 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.

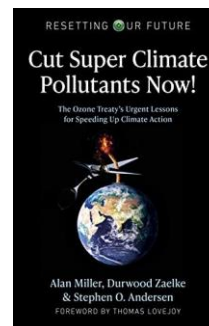
The research was supported by an extensive survey of international and domestic literature included as Appendix B to the report.



[Australian Government, Department of Agriculture, Water and the Environment, Expert Group, 2021](#)

Cut Super Climate Pollutants Now! The Ozone Treaty's Urgent Lessons for Speeding Up Climate Action (Resetting Our Future). We have a decade or less to radically slow global warming before we risk hitting irreversible tipping points that will lock in catastrophic climate change. The good news is that we know how to slow global warming enough to avert disaster. Cut Super Climate Pollutants Now! explains how a 10-year sprint to cut short-lived "super climate pollutants" -- primarily HFC refrigerants, black carbon (soot), and methane -- can cut the rate of global warming in half, so we can stay in the race to net zero climate emissions by 2050.

Authors: Alan Miller, Durwood Zaelke, Stephen O. Andersen.



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*



Click [here](#) to access recent OzoNews Issues [Request a PDF](#) of the current issue

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The views expressed in articles written by external authors are solely the viewpoints of those authors and do not represent the policy or viewpoint of UNEP. While UNEP strives to avoid inclusion of misleading or inaccurate information, it is ultimately the responsibility of the reader to evaluate the accuracy of any news article in OzoNews. The citing of commercial technologies, products or services does not constitute endorsement of those items by UNEP.

If you have questions or comments regarding any news item, please contact directly the source indicated at the bottom of each article.

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

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