



DUMPING NEW INEFFICIENT APPLIANCES ON AFRICA



REPORT OF THE STOP DUMPING CCAC PARIS WORKSHOP: MORE RAPID TRANSITION TO SUSTAINABLE COOLING TECHNOLOGY¹

24-25 August 2023

Participants from nine African Parties: Benin, Djibouti, Ghana, Lesotho, Morocco, Nigeria, Senegal, Togo, and Uganda

Corresponding members from five more African Parties: Burkina Faso, Kenya, Mali, Tunisia, and Zimbabwe

Resource Persons and Participants from the Climate & Clean Air Coalition (CCAC), CLASP, Institute for Governance & Sustainable Development (IGSD), United Nations Environment Programme (UNEP OzonAction), and United for Efficiency (U4E), coming from France, Morocco, Switzerland, and United States (USA)

Chaired by Mr. Kofi Agyarko

Montreal Protocol Authority to Protect Stratospheric Ozone and Climate

The stratospheric ozone layer shields Earth against the harmful effects of ultraviolet (UV) radiation, including skin cancer, cataracts, suppression of the human immune system, damage to agricultural crops and ecosystems, and the degradation of wood, paint, plastic, stone, and other materials in the built environment.

The 1985 Vienna Convention for Protection of the Ozone Layer established the framework for the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol) with authority to protect the Earth's

¹ This workshop was conducted according to the Chatham House Rule. Under this Rule, participants are allowed to use the information from a discussion, but not reveal who the speaker was, or what organization they are from. The views expressed in the meeting report and do not necessarily reflect those of the organizations where participants are employed.

ozone layer by phasing out the production and consumption of chemicals that deplete it. Under the 2016 Kigali Amendment, Parties to the Montreal Protocol have the authority to control the production and consumption of hydrofluorocarbons (HFCs), which are ozone-safe but climate-harmful greenhouse gases (GHGs) once necessary to rapidly phaseout ozone-depleting substances (ODSs), but now being phased down out of concern for their climate impacts and because environmentally superior replacements are now available or soon to be available.

The Montreal Protocol Parties restricted trade in controlled substances originally to encourage ratification and then to prevent industrial migration and trade in products made with or containing ODSs between Parties to maintain the integrity of phase-out and phase-down and to prevent illegal trade. In addition, the Montreal Protocol contains provisions for financial assistance and transfer of technology necessary for “Article 5” (mostly developing-country) Parties to meet their obligations under the Protocol.

What is Environmental Dumping of Inefficient New Cooling Equipment with Obsolete Refrigerants?

Environmental Dumping is exporting products that: 1) Contain hazardous substances; 2) Have environmental performance lower than in the interest of citizens in the country of import or global commons; and/or 3) Undermine the ability of importing countries to comply with international treaty obligations. Environmental Dumping includes export of cooling appliances that fail to meet environmental, safety, or energy efficiency standards in the country of origin and/or the home country of the manufacturer.

The working definition of “*obsolete refrigerants*” is:

1. Refrigerants that have been or soon will be banned or severely restricted from production and consumption under Multilateral Environmental Agreements (MEAs) such as the Vienna Convention and its Montreal Protocol;
2. Refrigerants with global warming potential (GWP) greater than allowed for sale in the country of manufacture or the home country of the manufacturer; and
3. Refrigerants with technical and environmental performance lower than requested by the importing country.

For example, R-134a is obsolete in stand-alone refrigeration and motor vehicle air conditioners (MACs); R-22 and R-410A is obsolete in room air conditioners (RACs).

Why Stop Dumping?

The dumping of obsolete new and used cooling equipment in Africa and other developing countries “exports poverty” to the buyers of these appliances and “exports non-compliance burdens” to the Parties to the Montreal Protocol where they are dumped. Excessive greenhouse gas (GHG) emissions from obsolete ODSs and high-global warming potential (GWP) HFCs in cooling appliances dumped in Africa and other developing countries harm citizens and ecosystems worldwide.

Dumping exports poverty because the added electricity of the inefficient appliances takes money away from education, health, nutrition, and other aspects of the quality of family life. Dumping exports Montreal Protocol non-compliance burdens because the refrigerant demands for the service of these appliances can exceed the allocation under phase-out of hydrochlorofluorocarbons (HCFCs) and phase-down of HFCs, particularly during periods of high growth in demand driven by global warming.

Dumping of inefficient new and used cooling appliances with obsolete refrigerants scheduled for phase-out and phase-down also, as the result of avoidable refrigerant and fossil-fuel electricity generation emissions: 1) damages local air quality and forces global warming; 2) harms human health and agricultural productivity; and 3) deteriorates the built environment (wood, plastics, paints, roofing, etc.).

Inefficient RACs are Dumped in Africa with Punishing Local and Global Impacts

- Approximately 650,000 RACs, roughly 35% of sales, are dumped annually in African countries that consume more electricity than the common definition of inefficient (3.0 W/W).
- At least 50% of the low efficiency RACs are imported from China.

- About half of RACs sold in Africa use obsolete HCFC-22 and about half obsolete HFC-410A refrigerants with a small number using lower GWP HFC-32 sold almost exclusively in South Africa. HCFC-22 and HFC-410A are being phased out or phased down, respectively, and no longer have a viable domestic market in the countries manufacturing RACs sold in Africa.

Montreal Protocol Parties Have Long Been Concerned with Dumping

Price dumping has a long history in international trade law. The ambition in price dumping is to protect markets against unfair competition that adversely affects national enterprise competitors and employment and ends in global monopoly price gauging.

Efforts to stop environmental dumping are the corollary to price dumping. With stopping dumping, the ambition is to protect the atmosphere against ozone and climate tipping points that end in an unsustainable Earth. Africa welcomes suggestions for improving and enforcing the definition of environmental dumping within global legal traditions of environmental law.

Access to environmentally superior technology for all Parties is a necessary condition for the phase-out of ODSs and phase-down of HFCs.

Dumping of products made with and containing substances controlled under the Montreal Protocol has been a concern of Parties at least since 1993 (see examples and excerpts from Montreal Protocol history in the Appendices). At that time, Mauritius and Morocco suspected that some suppliers in non-Article 5 Parties were deliberately dumping cooling technology dependent on chlorofluorocarbons (CFCs) and HCFC as a means of maintaining ODS market share. Parties responded to historic dumping concerns with cooperation on revisions to customs codes, green customs capacity building, and public-private partnerships sharing responsibility for detection, reporting, apprehension, adjudication, and retribution for environmental harm.

For example, The Vietnam National Ozone Unit (NOU) worked with the Industry Cooperative for Ozone Layer Protection (ICOLP) and the US Environmental Protection Agency (EPA) to promote a “leadership pledge” by multinational companies to not increase the dependence of Vietnam on

ODSs² (Andersen and Sarma 2002; Andersen, Sarma, and Taddonio 2007). This action speeded up ozone layer protection and avoided the expansion of ODS use, including servicing, that would have later required financing by the Multilateral Fund.

For Africa and Southeast Asia, there is unequivocal proof of environmental dumping of inefficient cooling equipment with obsolete HCFC and HFC refrigerants scheduled for phase-out and phase-down, respectively under the Montreal Protocol (CLASP 2020; 2023). These obsolete refrigerants are likely to become expensive or unavailable for the service of cooling equipment necessary for basic domestic needs such as cold chains, household refrigeration, and residential cooling as we enter what UN Secretary General Antonio Guterres aptly described as the “era of global boiling.”

Environmental dumping of cooling equipment using HCFC and HFC refrigerants increases the cost and complications of compliance with the ODS phase out and HFC phasedown, including the illegal production and trade in controlled substances by A5 and non-A5 Parties.

Some A5 Parties are curtailing import of inefficient cooling equipment using obsolete refrigerants with well-financed improvements in laws and standards governing such imports and associated environmental inspection and enforcement. However, even in these cases, successfully stopping environmental dumping of such equipment requires increased personnel, training, and inter-agency collaboration within importing-countries to address smuggling activities aimed at avoiding detection by border authorities. In cases where border protections are weak or non-existent, environmental dumping continues uncurtailed and exacerbates inspection and enforcement burdens in other countries with improved border protection. This is why shared responsibility to take actions to stop dumping

² Companies from Canada, Germany, Japan, Sweden, Switzerland, Taiwan, United Kingdom, and United States making the Vietnam Pledge included: Asahi Glass, Asea Brown Boveri, AT&T, British Petroleum, British Petroleum Vietnam, Carrier, the Coca-Cola Company, Daihatsu, DuPont, Ford, Fuji Electric, Fuji Heavy Industries, Hewlett-Packard, Hino, Hitachi, Honda, Honeywell, ICI, Isuzu, Kawasaki Heavy Industries, Lufthansa, Matsushita Electric, Mazda, Meidensha, 3M, Mitsubishi Electric, Mitsubishi Heavy Industries, Mitsubishi Motors, Motorola, Nissan, Nissan Diesel, Nortel (Northern Telecom), Sanyo, Seiko Epson, Sharp, Suzuki, Taiwan Fertilizer Company, Toshiba, Toyota, Trane, Yamaha, Yaskawa, Vulcan Materials and UNISYS. Many other companies reported to the Vietnam NOU that they abided by the pledge.

at the origin (exporting and transit country and at the final destination (import country) are critical for a solution that can match the urgency of the climate emergency. Thus far, the Montreal Protocol Multilateral Fund financing is inadequate to meet A5 Party needs. Further, even with such funding, international cooperation is necessary.

The CLASP Africa Dumping Study listed the challenges as: 1) Illegal shipment of restricted refrigerants by mis-labelling the containers or mis-declaration of the shipment; 2) inadequate training and resources for enforcement personnel; 3) incomplete coordination of environmental authorities and border control agencies; and 4) limited resources to dedicate to enforcement of refrigerant regulations.

Accordingly, African Parties:

Welcome Montreal Protocol leadership to stop environmental dumping and recognize that dumping in A5 Parties of new inefficient cooling equipment using obsolete refrigerants scheduled for phase-out and phase-down is contrary to the ambition of the Vienna Convention for the Protection of the Ozone Layer (Vienna Convention) and Montreal Protocol to address global atmospheric problems with global solutions consistent with the principle of Common but differentiated responsibilities (CBDR).

Support exporting (including transit) and importing country efforts to “Stop Dumping” with capacity building, publications, workshops, green customs enforcement, and with enforcement at the point of export rather than just the point of import.

Welcome government leadership, recognizing European Union (EU) and United States government efforts to prohibit the export of cooling appliances not compliant with domestic fluorocarbon (f-gas) regulations such as caps on GWP specified on a product-by-product basis.

Welcome corporate leadership and partnerships to transition from dumping inefficient cooling equipment with obsolete refrigerants to efficient equipment with lower-GWP refrigerants.

African Parties offer collaboration in implementing shared responsibility policies, including transparent public outreach and economic and regulatory incentives, to curtail dumping on the part of A5 and non-A5 Parties. In this regard, African Parties recognize the importance of policies to curtail dumping, and therefore commit to developing policies and implement activities to stop dumping through Kigali Implementation Plans (KIPs) and collaboration with other countries, international/national organizations, and the private sector.

Welcome UNEP and Non-Governmental Organization (NGO) Centres of Excellence

CCAC

Support the organisation of the workshop and convening of interested countries to help define and understand the problem, under its Targeted Expert Assistance funding window.

CLASP

Provide research and analytical support, including the Regional Assessment of dumping of inefficient cooling technology in Africa (2020) and Southeast Asia (2023), as well as the development of national scorecards and regional assessment of access to best available replacement technology.

Ozone Action

Support development of case studies and model legislation to determine, communicate, and enforce national choice, as well as collaborations with the Green Customs Network to reinforce actions by exporters, including authorities in transit countries, and importers, and use of tools such as the Montreal Protocol's informal Prior Informed Consent (iPIC) mechanism implemented under existing instructions from Parties.

Montreal Protocol Technology and Economics Assessment Panel (TEAP) and its Technical Options Committees and Task Forces

Provide updates to lists of *obsolete and replacement refrigerants* based on a matrix of environmental and market criteria, as well as surveys on how Parties are integrating concern for energy efficiency, refrigerant GWP, and refrigerant atmospheric fate (trifluoroacetic acid - TFA and per- and polyfluorinated substances - PFAS) on cooling appliance labels, and development of criteria for refrigerants that can legitimately be classified as “climate friendly.”

U4E (United for Efficiency)

Provide guidance on sustainable public procurement with a climate-saving carbon footprint and national and regional estimates of benefits and costs of GHG gases not emitted, clean air, health, and environmental quality.

Take Away Consensus

Embrace and apply *The Precautionary Principle*, the Principle of *Common but Differentiated Responsibilities (CBDR)*, and *United Nations Sustainable Development Goals (SDGs)* to compel beneficial action by all United Nations, National, and Regional environmental authorities, and public interest NGOs to stop environmental dumping.

Stand strong as Africa on behalf of all A5 Parties worldwide to stop dumping and demand access to the best available cooling technology and know-how, and energy efficient and lower global warming potential refrigerants for the best carbon footprint at high ambient temperatures made affordable by bulk purchases and buyers clubs.

Fully replenish the Multilateral Fund for the Implementation of the Montreal Protocol, including capacity building for enforcement of ODS and HFC compliance, training, and tools to use superior refrigerants with lower GWP, leapfrogging R-410A in the phaseout of R-22, and early action on the HFC phasedown such as capping the GWP of refrigerants at internationally harmonized values (for example cap RAC GWP at 750 and MAC GWP at 150).

APPENDICES

Participants attending the Workshop

Benin:	Ms. Gauthe Yvette - yvettegauthe@yahoo.fr
Djibouti:	Mr. Idriss Ismael Nour - distri_play@yahoo.fr
Ghana:	Mr. Kofi Agyarko - kofiagyarko@gmail.com Mr. Joseph Baffoe - jabaffoe@gmail.com Mr. Emmanuel Osae-Quansah - eoasaequansah@yahoo.com Mr. Hubert Zan - Zan1hubert@gmail.com
Lesotho:	Ms. Seipati Mokoma - seipatimokoma5@gmail.com
Nigeria:	Mr. Idris Abdullahi Ishaka - idrisaking@yahoo.com
Senegal:	Ms. Reine Marie Colly Badiane - badianermc@gmail.com
Togo:	Mr. Vidémé Amèh Djossou - fayrson@hotmail.fr
Uganda:	Ms. Margaret Aanyu - maanyu@nemaug.org ; magaanyu@hotmail.com

Corresponding Members

Burkina Faso:	Mr Samuel Paré - samuel.pare@gmail.com
Kenya:	Mr. Marindany Kirui - marindanykirui@yahoo.com
Mali:	Mr. Modibo Sacko - ozone@afribonemali.net
Tunisia:	Mr. Youssef Hammami - youssefhamami@yahoo.fr
Zimbabwe:	Mr. George Chaumba - george.chaumba@gmail.com ; chaumbag@yahoo.com gchaumba66@gmail.com

Other Resource Persons and Participants

CCAC:	Ms. Denise San Valentin, Ms. Louisa Morgan, Ms. Seraphine Haeussling
CLASP:	Ms. Lina Kelpsaitte
IGSD:	Dr. Stephen O. Andersen, Mr. Richard "Tad" Ferris, Mr. Mohamad Rida Derder
UNEP:	Mr. Jim Curlin (OzonAction)
U4E	Mr. Victor Minguez and Ms. Souhir Hammami (United4Efficiency and Cool Coalition)

National Perspectives on Dumping

“Preventing the dumping of inefficient RAC equipment into Africa will assist the Continent to contribute to the goals of the Kigali Amendment and promote the use of EE equipment.”

Engr. Idris A.I, Asst Director, Nigeria National Ozone Officer,
Federal Ministry of Environment

“What could be a greater environmental injustice than fooling a buyer into a cooling appliance that is unaffordable to operate, contributes to ozone depletion and climate change, and may be useless in obsolete refrigerant becomes scarce and expensive?”

Mr. Mathatela Ntsatsi, National Ozone Officer, Lesotho
Meteorological Service (LMS), Ministry of Environment

“Many thanks for this [stop dumping] initiative, which is great, and may help our Continent and, I hope, we may find a way, to protect our market.”

Samuel Paré, Burkina Faso National Ozone Unit Coordinator,
Ministry of Environment, Green Economy, and Climate
Change

“The National Ozone Unit in Libya asserts you its full support... We are very keen to protect our environment from dumping with the mutual equipment that damages our natural environment.”

Dr. Khalifa Elawej, Director, Libya National Ozone Unit,
Environment General Authority

“The 147 Article 5 Parties to the Montreal Protocol are demanding shared responsibility with the 51 non-Article 5 Parties in halting the dumping of cooling technology that jeopardize the future of all life on Earth. Please sell in Africa only what is considered environmentally acceptable in the home country of the manufacturer and please, non-Article 5 Parties, fulfil your promise to pay the agreed incremental costs.”

Ms. Reine Marie Colly Badiane, Coordonnateur du Programme
de Pays Ozone
Direction de l'Environnement et des Etablissements Classés,
Ministère de l'Environnement et du Développement
Durable, Senegal.

“Refrigerant and fossil-fuel powerplant emissions anywhere harm humans and ecosystems everywhere, so it is obvious that people wherever they are should demand and end to dumping of inefficient cooling appliances with high GWP refrigerants.”

Mr. Kofi A. Agyarko, Director, Renewable Energy, Energy Efficiency & Climate Change, Energy Commission, Ghana.

“I feel angry when defenders of dumping claim the right to do anything in my country that is not illegal. Shame on you for practicing ethical business in your home country and not in mine.

Ms. Gauthier Yvette, Coordonnatrice du Programme de Pays, Ministère de l'Environnement et de la Protection de la Nature, Benin.

“We are proud that the Ghana Environmental Protection Agency ‘twinned’ with our Energy Commission to phaseout ODSs and phase down HFCs for the lowest carbon footprint and most affordable cooling appliance life cycle ownership cost, but we are drowning in inefficient appliances with obsolete refrigerants dumped from heartless foreign companies.”

Mr. Emmanuel Osae-Quansah, National Ozone Unit and Environmental Protection Agency, Ghana.

“Looking outward from Africa we cannot understand why so many developed countries are so aggressive in moving to lower GWP cooling appliances powered by clean energy while all the good they do is offset by dumping of inefficient appliances with obsolete refrigerants in Africa and other developing countries.”

Mr. Vidémé Amèh Djossou, Coordonnateur du Bureau National Ozone, Togo

“Our African Market should really be protected from dumping of obsolete technologies.”

M. Kirui, Kenya National Ozone Unit Coordinator, Ministry of Environment, Natural Resources and Regional Development Authorities

“My eyes are on the delegates at the October 2023 MOP in Nairobi with high expectation that the Montreal Protocol will agree on a global approach with shared responsibility to stop dumping.”

Ms. Margaret Aanyu, National Ozone Unit Coordinator, National Environment Management Authority (NEMA), Uganda.

Glossary of Terms

Article 5 Parties (A-5 Parties)

Originally defined as United Nations states listed as developing whose annual calculated level of consumption of the controlled substances in Annex A (CFC-11, CFC-12, CFC-113, CFC-114, and CFC-115) was less than 0.3 kg per capita from the date the Protocol entered into force for that Party until 1999. Subsequently the definition was pragmatically adjusted to reflect the addition of controlled substances through Amendment, progress in ODS phaseout, and other changing circumstances. Article 5 Parties enjoy compliance grace periods and qualify for financing of agreed incremental costs of transition.

Access to Technology

In the context of global environmental protection, access to technology refers to affordable best available technology (e.g., lowest carbon footprint, low GWP, ozone safe, etc.), and the know-how, technical data, and training necessary for proper deployment. In many A5 Parties RACs are simply not for sale that are energy efficient at local ambient temperature and humidity using lower GWP refrigerants.

Environmental Dumping

Environmental dumping is the practice of exporting products to another country or territory that: 1) contain hazardous substances; 2) have environmental performance lower than is in the interest of consumers or that is contrary to the interests of the local and global commons; and/or 3) can undermine the ability of the importing country to fulfil international environmental treaty commitments.

Environmental dumping of refrigeration and air conditioning equipment includes: 1) Export of technology that cannot legally be sold in the country of export as a consequence of failure to meet environmental, safety, energy efficiency, or other product standards; and 2) Export of technology that is unusable in the country of export or country of import because refrigerants are will not be available over the expected life of the product because of national regulation or phaseout and phasedown control schedules under the Montreal Protocol.

Obsolete Refrigerants

Obsolete generally refers to products that no longer useful, usually because something newer and better has replaced it. Synonyms to obsolete include antiquated, archaic, out-of-date, and outmoded.

A working definition of obsolete refrigerants includes consideration of: 1) when the manufacture, trade, or use is prohibited by national regulation or international treaty; 2) when the life cycle ownership cost of new cooling products is less with another refrigerant less vulnerable to national regulation and treaty controls; and 3) when respected manufacturers abandon use in new products in home markets.

Indicative examples of obsolete refrigerants include R-134a in refrigerators and other stand-alone refrigerated cases, R-134a in MACs, and R-22 and R-410A in RAC.

Price Dumping

Price dumping is the practice of using “discriminatory pricing” – wherein goods and services are sold in the importing country at prices below the selling price and/or cost of production in the country of export.

Technology of Choice

The Montreal Protocol Technology and Economic Assessment Panel (TEAP) and its Technical Options Committees (TOCs) designate clear global choice of next-generation technology as

“the technology of choice” based on technical, environmental, and economic performance that drive market penetration and dominance. Implementing agencies avoid inferior technology by guiding investment to best available technology of choice.

Biography and Links

Agyarko, Kofi A., Stephen O. Andersen, Richard “Tad” Ferris, Gabrielle “Gabby” B. Dreyfus, Mohamed Rida Derder, Leslie Olonyi Bosire, Laura Bloomer, and Xiaopu Sun. 2022. The Importance of Stopping Environmental Dumping in Ghana: The Case of Inefficient New and Used Cooling Appliances with Obsolete Refrigerants. 32 *Duke Environmental Law & Policy Forum* 51-106 (2022) Available at:

<https://scholarship.law.duke.edu/delpf/vol32/iss1/2>.

Andersen, Stephen O., Richard Ferris, Romina Picolotti, Durwood Zaelke, Suely Carvalho, and Marco Gonzalez. 2018. Defining the Legal and Policy Framework to Stop the Dumping of Environmentally Harmful Products. 29 *Duke Environmental Law & Policy Forum* 1-48 (2018).

<https://scholarship.law.duke.edu/delpf/vol29/iss1/1>.

Andersen, Stephen O., K. Madhava Sarma and Kristen N. Taddonio. 2007. *Technology Transfer for the Ozone Layer: Lessons for Climate Change*, Earthscan Press, London (Official publication of the Global Environment Facility (GEF) and the United Nations Environment Programme).

Andersen, Stephen O. and K. Madhava Sarma. 2002. *Protecting the Ozone Layer: The United Nations History*. Earthscan Press, London 2002 (Official publication of the United Nations Environment Programme).

Brack, Duncan. 1996. *International Trade and the Montreal Protocol*. Taylor and Francis, London.

CLASP. 2020. *Environmentally Harmful Dumping of Inefficient and Obsolete Air Conditioners in Africa*

CLASP. 2023. *Dumping in Southeast Asia of Inefficient Room Air Conditioners with Hazardous Obsolete Refrigerants*. Final Report. 20 September.

Questions and Answers

Acronyms and Abbreviations

AC	air conditioning
A5	Article 5 (of the Montreal Protocol)
CBDR	Common but Differential Responsibilities
CCAC	Climate and Clean Air Coalition
CFC	chlorofluorocarbon
CLASP	NGO name, once an acronym for Collaborative Labeling and Appliance Standards Program
EPA	Environmental Protection Agency
EU	European Union
f-Gas	fluorocarbon substances as abbreviated in EC regulations phasing down HFCs
GHG	Greenhouse Gas
GWP	global warming potential
HCFC	hydrochlorofluorocarbon
HFC	hydrofluorocarbon
IGSD	Institute for Governance & Sustainable Development
iPIC	informal Prior Informed Consent
MAC	motor vehicle air conditioning
MEA	multilateral environmental agreement
NGO	non-governmental organization
non-A5	not qualifying under Article 5 of the Montreal Protocol
NOU	National Ozone Unit
ODP	ozone-depletion potential
ODS	ozone depleting substance
PFAS	per- and polyfluorinated substances
RAC	room air conditioner
TEAP	Technology and Economic Assessment Panel (Montreal Protocol)
TFA	trifluoroacetic acid
TOC	Technical Options Committee (of the Montreal Protocol)
TEAP)	
U4E	United for Efficiency
UNEP	United Nations Environment Programme
USA	United States of America
UV	ultraviolet
VOC	volatile organic compound

Annex

Excerpts from Montreal Protocol Meeting Documents and Decisions Referencing Dumping and Related Matters:

<https://www.dropbox.com/scl/fi/9ii601vwglxlv204bde8i/Montreal-Protocol-Dumping-History-Excerpt-Chart-Aug-2023.docx?rlkey=rdaceh4xle93ucgutkwjrlxbx&dl=0>

(Also available upon request as a separate document.)

