

**COMMEMORATION OF THE INTERNATIONAL DAY FOR THE
PRESERVATION OF THE OZONE LAYER
16TH SEPTEMBER, 2008**

STATEMENT FROM: HON. JESSICA ERIYO
Minister of State for Environment, Ministry of Water and Environment



**Hon. Jessica
Eriyo**

ON this day of 16th September, 2008, nations all over the world are commemorating the International Day for Preservation of the Ozone Layer. The observance of this Day owes its origin to the United Nations General Assembly, held on 19th December, 1994, that adopted Resolution 49/114 which proclaims 16 th September of every year, the International Ozone Day.

In addition, commemoration of the International Day for Preservation of the Ozone Layer, offers an opportunity for nations around the world to promote awareness and actions for protection of the Ozone layer. The Theme of this year's celebration is: "Montreal Protocol - Global Partnership for Global Benefits."

This year, 2008, marks some of the milestones concerning the progress achieved worldwide among the Parties to the Montreal Protocol since the year 1987. The events for celebrating the 20 years of the Montreal Protocol took place last year during the 19th Meeting of the Parties (MOP) to the Montreal Protocol, in Montreal, Canada.

Overall, recent scientific findings show that the Montreal Protocol has reduced consumption of ozone-depleting substances (ODSs) worldwide by over 95 percent.

In order to further enhance regional cooperation in implementing the Montreal Protocol, a number of regional groups were created during the past years, e.g., South-East Asia, Caribbean, the European Community, Africa, among others.

Regional Meetings are held annually to review progress in implementation of the Montreal Protocol. In August, 2007, Uganda hosted the Eleventh Main Regional Meeting for the Ozone Officers for Africa (comprising 43 countries), in Kampala.

At the national level, Government has already put in place the National Environment (Management of Ozone Depleting Substances and Products) Regulations, which took effect in the year 2001, in order to monitor and control trade/importation of ODSs into the country. Also recently in May, 2008, the Press Release containing the list of importers registered with NEMA (Table 1), was published in the different newspapers in circulation. The registered importers will only be allowed

to import limited amounts of ODSs, according to the set quota for each year during the period 2008 - 2010 (Table 2).

Since the late 1990s, the greatest consumption of ODSs was in the refrigeration and air-conditioning sector, of which Chlorofluorocarbons (CFCs) accounted for 90% of the total usage of ODSs in Uganda. For the major ODSs imported into Uganda during the years 2000 to 2007, imports of CFCs reduced by 98%, while imports of ozonefriendly alternatives such as HCFCs, Hydrofluorocarbons (HFCs), increased by about 80%. Uganda also phased out the use of Methyl bromide by the year 2007.

Furthermore, in August this year (2008), the Multilateral Fund Secretariat approved the Terminal Phase-out Management Plan (TPMP) for Uganda, for total phase-out of ODSs by the year 2010, with the exception of Hydrochlorofluorocarbons (HCFCs). Recent developments, however, indicate that controls will be imposed on production and consumption of some ozone-friendly substances such as the Hydrofluorocarbons (HCFCs) and Hydrofluorocarbons (HFCs category of chemicals.

This is mainly because these ozone-friendly substances have now been found to contribute to global-warming when released into the atmosphere. This renewed focus on HCFCs and HCFs during the period 2008 - 2010 (Table 2). Since the late 1990s, the greatest consumption of ODSs was in the refrigeration and air-conditioning sector, of which Chlorofluorocarbons (CFCs) accounted for 90% of the total usage of ODSs in Uganda. For the major ODSs imported into Uganda during the years 2000 to 2007, imports of CFCs reduced by 98%, while imports of ozonefriendly alternatives such as HCFCs, Hydrofluorocarbons (HFCs), increased by about 80%.

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WISHING YOU HAPPY COMMEMORATION DAY!

RECENT TRENDS AND ACHIEVEMENTS IN UGANDA

By: Margaret Aanyu Environment Impact Assessment Office/Ozone-Desk Officer, National Environment Management Authority (NEMA)

The National Environment Management Authority (NEMA) is collaborating with key stakeholders including focal-points in the Customs Department of Uganda Revenue Authority (URA), Uganda National Bureau of Standards (UNBS), Ministry of Tourism Trade and Industry (MTTI), Crop Department of Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), and dealers and importers of ODSs and ODS-dependent equipment (e.g., refrigerators, air-conditioners), to coordinate the implementation of the ODS Regulations and the annual quota system for importation of different ODSs (Table 2). The registered ODS dealers/importers as listed in Table 1 , will be required to regulate their ODS imports based on the quota system.

Table 1: Companies Dealing in ODSs and ODS-Dependent Equipment, in Uganda

| | Name of Company / Location / Contact |
|-----|--|
| 1. | Refrigeration Components (U) Limited; Plot 83, Sixth Street, Industrial Area, Kampala. P. O. Box 253000, Kampala. Tel: 414 346625/ 6 |
| 2. | Lamex Refrigeration and Electrical Complex; P. O. Box 3320, Kampala. Tel: 0772 500610 |
| 3. | Balton; P. O. Box 852, Kampala. Tel: 0312 502300 / 0752-330703 |
| 4. | Oxy Gas Limited; Plot 501, Nakawa Industrial Area, on Jinja Road, Kampala. |
| 5. | Kalege Enterprises Limited; Off Duster Street, Corridor Road, Kampala. |
| 6. | Noor Ltd., EMKA House, Plot 3/5, on Bombo Road, Kampala. P. O. Box 29500, Kampala. Tel: 0312 262446; Fax: 041 230598 |
| 7. | Transa - Wholesalers; Plot 24, on Luwum Street, Kampala. |
| 8. | Fridge World Ltd., On Mambule Road, Kampala; P. O. Box 2412, Kampala. Tel: 0312 277864 / 0772 984978 |
| 9. | Uganda Oxygen; P. O. Box 3002, Kampala ; Tel: 0414 257717 / 256919 |
| 10. | Transa Electrical; P. O. Box 3017, Kampala; Tel: 0414 257000 |
| 11. | Roko Technical Services. P. O. Box 172, Kampala ; Tel: 414 567305 / 567781 / 567333 Uganda Posts and Telecommunication Corporation. P. O. Box 7171, Kampala. Tel: 0412 246361 |
| 12. | MK Electro Watts. P. O. Box 21500, Kampala ; Tel: 0414 250289 / 0772 500610 |
| 13. | UGASUNG Electronics. P. O. Box 7753, Kampala. Tel: 0414 222333 |
| 14. | Appliance World; P. O. Box 10608, Kampala; Tel: 0414 340799 / 0312 250119 |
| 15. | Boc Gases; P. O. Box 28088, Kampala ; Tel: 0414 231875/ 6 / 0312 261315 |
| 16. | Arien Electric and Electronics Ltd., P. O. Box 35943, Kampala. Tel: 0782 680074 |
| 17. | LM Engineering Ltd., Plot 113, Namugongo Rd, P. O. Box 34226, Kampala. Tel: +256 414 285735 |

Like all the rest of the Parties to the Montreal Protocol, Uganda has benefited from projects approved and funded by the Multilateral Fund of Montreal Protocol. For example, NEMA is presently overseeing the implementation of the Refrigerant Management Plan/Project (RMP) and the Terminal Phase-out Management Plan (TPMP) for the phase-out of ODSs in the refrigeration and air-conditioning sector projects. The project for phase-out of Methyl bromide use in the cut-flower sector ended in 2007.

A number of ozone-friendly alternatives are already being imported into Uganda, as shown by recent imports data provided by Customs Department/URA. For example in the year 2007, the Non-Ozone Depleting Substances that were imported into Uganda were mainly

Hydrofluorocarbons (HFC) and Halogen-free Refrigerants. That is: (a) HFC Blends (R404A and R407A) = 277,790 Kgs;

(b) Halogen-free (mainly Ammonia) = 24,028 kgs; and,
(c) Halogen-free (Iso-butane - R600A) = 2,202 Kgs. These substances are replacing use of CFCs in Uganda. About the Refrigerant Management Plan/Project (RMP) Under this project, more than 50 technicians in the refrigeration and air-conditioning sectors have been trained over the 2003 - 2007 period.

Technicians were selected from different companies (hotels, industries, flower farms, embassies, repair workshops, etc) Each trained technician has been awarded a Certificate in "Good Refrigeration Practices". The members of Uganda National Association for Refrigeration and Air-conditioning (UNARA) are key beneficiaries of the

RMP and the Terminal Phase-out Management Plan (TPMP). Other beneficiaries of the RMP and TPMP project are the Customs Officers of Uganda Revenue Authority. So far two training courses have been undertaken over the 2004 and 2007 (see Photo 2). Over 40 Customs Officers have been trained in matters concerning identification, control and monitoring of trade in ODSs and ODS-dependent equipment. Before end of October, 2008, the Customs Officers will receive a set of ODS Identifiers (computerised equipment) to assist in identifying and verifying contents of containers filled with ODSs, that will be passing through the various Customs check-points at the borders and inland depots. The Identifiers were procured by the GTZ-Proklima, using funds from Multilateral Fund Secretariat.

NEWS AND KEY MESSAGES FROM AROUND THE WORLD / TECH-TALK COMPILED BY: MARGARET AANYU, NEMA

ODS Production Trends and Closure of Facilities

The Montreal Protocol outlines the target dates for total phase-out of ODSs. Some of the target dates for developed countries have already passed. For developed countries, the ban on Methyl bromide use took effect in January, 2005. Recent developments also indicate that some of the previously biggest ODS producers (e.g., China, India, Brazil and countries in Europe) have switched to producing ozone-friendly alternatives.

This means that the stock of ODSs on the world market is decreasing, and consumers still relying on ODSs to sustain existing ODS-dependent equipment, will begin to face difficulties in the near future as stock runs out.

Governments Agree to Accelerated 'Freeze and Phase-out' of Ozone Depleting and Climate Changing Chemicals

An historic agreement to tackle the twin challenges of protecting the ozone layer and combating climate change was concluded by the Parties/governments at the 19th MOP that also marked the 20th

Anniversary of the Montreal Protocol, held in Montreal, Canada, September, 2007. The Parties present signed up to an accelerated freeze and phase out of substances known as Hydrochlorofluorocarbons (HCFCs). Developed countries have agreed to reduce production and consumption by 2010 by 75%, 90% by 2015 with final phase out in 2020.

Developing countries have agreed to cut production and consumption by 10% in 2015; by 35% by 2020 and by 67% by 2025 with a final phase-out in 2030. This means that some equipment such as office block air-conditioning units could continue to run on HCFCs for a few more years if needed. The Parties also agreed that experts carry out a study to fully assess the likely costs of the accelerated phase-out of HCFCs, as this will have implications on new replenishment of the Multilateral Fund.

News and Key Messages From Around the World / Tech-Talk

1. EXAMPLE OF ALTERNATIVE REFRIGERANT

A company called Virtis, announced recently that it is to produce units using non-ozone-depleting NU-22 refrigerant, which has zero ozone depleting potential; and which duplicates the operating characteristics of HCFC-22. Virtis has made this move because HCFC-22 is no longer acceptable in new equipment in Europe. NU-22 can be used as a drop-in replacement for HCFC-22 in field service operations.

2. CONSUMERS RECYCLE EXISTING HALONS FOR FIRE-FIGHTING

Consumers are continuing to recycle existing Halons to gain time for developing substitutes for fire-fighting. Alternative approaches, such as good fire prevention practices, use of fire resistant materials, and appropriate designs for buildings have significantly reduced the need for Halon systems across the world. Other fire extinguishing agents including carbon dioxide, water, foam, and dry powder are now widely used. In Africa, there are two Halon banks, one located in South Africa and the second in West Africa, for handling (storing) used Halons which are then processed for reuse by interested parties.

3. THE CASE OF FAILURE TO PROTECT THE OZONE LAYER IN THE EU

The European Commission (EC) began legal proceedings in June, 2004, against nine European Union (EU) nations - Belgium, Britain, France, Germany, Greece, Ireland, Italy, Spain and Portugal, over use of Methyl bromide, just after it threatened legal action against several of the same countries for not implementing other anti-pollution legislation.

EU law generally requires Member States which use Methyl bromide to do so under strict control, and to give notice every year on how much Methyl bromide they plan to use, to what extent and what measures they are taking to reduce its use. Member States must also show what progress they have made in assessing and using substitute products.

4. THERE IS MUCH LEFT TO BE ACHIEVED IN THE SOLVENTS SECTOR

Effort is still required to phase out ODS solvents in developing countries, and especially the small- and medium-sized users. In particular, there is concern about the use of Carbon tetrachloride (CTC) for solvent applications by both large and small enterprises in different countries.

5. SEYCHELLES BANS EQUIPMENT WITH ODSs

The Seychelles government recently banned the import of household appliance containing ODSs. The government has advised its citizens travelling abroad not to buy home appliance containing CFCs or other ODSs, as these will be confiscated once they are in the Seychelles. The public has been advised to get guarantees from dealers overseas that the refrigerants in the freezers and fridges they are buying are CFC-free.

_ THE MOST COMMONLY ASKED QUESTIONS

Ozone layer depletion is a world-wide problem since the atmosphere has no boundaries. This means that solutions to address recovery of the Ozone layer requires that all nations participate actively in implementing activities that promote the use of ozone-friendly technologies and continued phase-out of ODSs, and to control illegal trade in ODSs around the world. There are number of factors which need to be understood concerning the Ozone layer. Below are a set of frequently asked questions.

Q1: What Is Ozone And Where Is It In The Atmosphere?

Ozone is a gas that occurs naturally in the atmosphere, and is mainly found in two regions of the atmosphere. About 10% of total ozone gas is found in the region called troposphere which lies 10 to 16km above the earth's surface; and 90% of the total ozone gas is found in the region called the stratosphere that lies between 16 and 50km above the earth's surface. It is the stratosphere that is referred to as the "Ozone Layer" and surrounds the whole earth.

Q2: Why Do We Care About Atmospheric Ozone; What are the Environmental Effects of Ozone Layer Depletion and in Relation to Climate Change?

Ozone in the stratosphere absorbs the harmful ultraviolet-B (UV-B) rays of the sun before they reach the earth's surface. As a result, the amount reaching the earth's surface is greatly reduced. If UV-B rays are not absorbed before reaching the earth's surface, they can cause a number of harmful effects as shown in Table 3.

Effects of Ozone Layer Depletion

| Category | Effects |
|-----------------------------------|--|
| Human health | <ul style="list-style-type: none"> • Damage to DNA and suppression of immune system resulting in increase in infectious diseases; Skin cancer; Eye cataract |
| Vegetation - (e.g., Trees, Crops) | <ul style="list-style-type: none"> • Reduces crop yields, and damage to seeds; Reduces quality of crops. |
| Aquatic (Water) organisms | <ul style="list-style-type: none"> • Damage to plankton, water plants, fish larvae, etc; General degradation of fisheries resources, and affects food supply for organism living in water (lakes, oceans, etc). |
| | <ul style="list-style-type: none"> • Damage to certain types of plastics, rubber, paints especially in the tropical regions where atmospheric temperatures are high. |

Q3: What Causes Damage to the Ozone Layer?

When ODSs such as CFCs used in refrigeration and air-conditioning, Methyl bromide used in controlling crop pests, halons used in fire-fighting, Carbon tetrachloride in dry-cleaning, Methyl chloroform used as solvent in industrial processes, are released and reach the Ozone layer, the reactive chlorine and bromine atoms contained in these ODSs, combine with the ozone atoms to form other types of gases. In doing so, the amount of pure ozone gas (molecules) is reduced and certain parts of the Ozone layer remain without ozone gas, creating what is known as the Ozone hole. Where the ozone hole exists, the harmful UV-B rays from the sun go through without being trapped and reach the earth's surface.

Presently countries in the southern hemisphere (e.g., Australia and New Zealand region) and in the northern hemisphere (the Greenland region) which are experiencing harmful effects of UV-B rays due to the existence of the ozone holes, are those that are located.

Q4: For How Long Can Ozone Depleting Substances Stay in The Atmosphere?

Scientific evidence accumulated since the 1970s has revealed that certain man-made chemicals containing chlorine and bromine, once released into the atmosphere, persist and remain intact for long periods of time while destroying the Ozone layer. One particle of chlorine is capable of destroying 100,000 molecules of Ozone, while bromine is 40 times more destructive than chlorine. For example, CFC-11 lasts for about 74 years, CFC-12 for about 111 years, and Halon-1301 can last for an average of 110 years.

Q5: Is The Depletion Of The Ozone Layer The Main Cause Of Climate Change?

No, ozone depletion itself is not the main cause of climate change, but ozone depletion and climate change are linked in a number of ways. For example, changes in the meteorological conditions could affect the behavior of the Ozone layer. Another factor that indirectly links ozone depletion to climate change is the use of some ODSs like CFCs and alternatives such as hydrofluorocarbons (HFCs). Scientific studies have revealed that CFCs and HFCs contribute to global-warming, and thereby effectively heating the earth's surface. HFCs have now been included in the category of green-house gases controlled by the Kyoto Protocol of

the Convention on Climate Change, and nations are now trying to control the use and emission of HFCs.

Q6: Has The Montreal Protocol Been Successful In Reducing Ozone-Depleting Gases In The Atmosphere?

Yes, because the total abundance of ozone-depleting gases in the atmosphere has begun to decrease in recent years. If nations of the world continue to follow the provisions of the Montreal Protocol, there would be a significant decrease by the year 2050 to values that existed before the early 1980s. For example, in 1986, the total consumption of CFCs world-wide was about 1.1 million ODP tonnes, and by 2001 this had come down to about 110,000 ODP tonnes. It has also been noted that developing countries reduced their CFC consumption by about 15% particularly during the 1986 - 2001 period.

CONCLUSION

The Montreal Protocol does provide some lessons learned which in essence include: the precautionary principle; liaison with industries; integration of science with policy; recognition of the special situation of the developing countries; common but differential responsibility; flexibility amongst different stakeholders in taking into account scientific, and technological developments over time. The way-forward, therefore, is to continue to work closely with the key partners, industry, schools, colleges/universities, consumers, and the different regulatory arms of Government, in order to control use of ODSs and ODS-dependent equipment.

With regard to the status of ratification of the Vienna Convention on Protection of the Ozone Layer, and the Montreal Protocol and Its Amendments, presently a total of 193 nations are Party to the Vienna Convention, 193 are Party to the Montreal Protocol; while those nations that have ratified the London Montreal Amendment to the Montreal Protocol total 189; the Copenhagen Amendment, 184; the Montreal Amendment, 167; and the Beijing Amendment, 143 nations.

Uganda has ratified all the aforementioned - having acceded to the Vienna Convention on 24th June, 1988, and in the same year, became signatory to the Montreal Protocol on 15 th September, 1988; ratified the London Amendment on 1st January, 1994; the Copenhagen Amendment on 22nd November, 1999; the Montreal Amendment on 23rd November, 1999; and the Beijing Amendment on 27th July, 2007.

_ OZONE-FRIENDLY PRODUCTS

The Ozone Secretariat based in Nairobi, Kenya, has disseminated/published a list of ozone-friendly substances that are now being manufactured in both the developing and developed countries around the world (Table 3). Below are the current alternatives to CFCs in products of each sector as listed by the Ozone Secretariat.

| Sector | Alternative |
|-------------------------|--|
| 1. Refrigeration | <ul style="list-style-type: none"> • New refrigeration units - HFC134a, Hydrocarbons, HFC blends, HCFC blends, HCFC 22, Ammonia. • Air-cooled air-conditioning units - HFC 134a, HFC blends. • Chiller equipment - HFCs, HCFC and HFC blends. • Mobile air-conditioners - HCFC blends, HFC-134a. |
| 2. Foam | Alternatives with zero ozone depleting potential (ODP) include carbon dioxide, hydrocarbons, HFC-152a or HFC-134a. In some markets, HCFCs are used for rigid thermal insulating foams. |
| 3. Aerosols | Hydrocarbons such as propane, butane and iso-butane, HCFCs, HFCs, Dimethyl, Ether and perfluoroethers. Other ozone friendly, CFC-free products are manual pump sprayers and dry powder inhalers. |
| 4. Sterilants | Alternatives with zero ODP include 100% ethylene oxide, ethylene oxide/carbon-dioxide mixtures, sterilization and formaldehyde. Some sterilants use HCFCs. |
| 5. Carbon tetrachloride | Organic solvents such as alcohols, ketones and esters, and chlorinated solvents such as per-chloroethylene; but each of these alternatives have their own advantages and disadvantages. |
| 6. Fire-fighting | Apart from gaseous alternatives such as carbon dioxide or dry powder, water mist technologies and combustion generated aerosols are being used in new systems. |
| 7. Solvents | No-clean technologies, aqueous and semi-aqueous cleaning, Hydrocarbons, non-ozone depleting chlorinated solvents, HCFCs, Perfluorocarbons and non-solvent cleaning processes. |
| 8. Methyl bromide | Solarisation, steam, Biological control, crop rotation, soilless culture etc. and chemicals such as chloropicrin, Metham sodium, Dazomet. |

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<http://www.enteruganda.com/brochures/ozone.html>