

#### **CONTROL AND MANAGEMENT OF OZONE DEPLETING SUBSTANCES IN SOUTH AFRICA**

#### 26-27 February 2025



## **OVERVIEW**

- Background
- Legislative framework
- Summary of the Ozone Depleting Substances (ODS) Regulations
- ODS Alternatives
- Gaps identified
- Conclusion







## BACKGROUND

- South Africa is party to the Montreal Protocol on substances that depletes the Ozone Layer, and its Vienna convention on the protection of the ozone layer which aims at preserving the environment by protecting the ozone layer from harmful ODSs in the atmosphere which tends to impacts negatively on the environment and human health
- The ozone layer natural layer of gas is a form of oxygen with three atoms (O3) instead of two (O2).
- Its found in the upper atmosphere which protects humans and other living things from the harmful ultraviolet (UV) rays of the sun. It performs the essential task of filtering out most of the sun's harmful UV radiation. Life on earth protected by O3 and without this shield, serious damage
- Any damage that is done to the ozone layer will lead to increased UV-B radiation in the earth surface.
- UV affects terrestrial and aquatic ecosystems, altering growth, food chains and biochemical cycles
- DEFF has developed the ODS Regulations which were promulgated on 8 May 2014, Government Notice 37621, which among others, prohibits the discharge or release of ODSs in the atmosphere







## Background

- The **Kigali Amendment** adds to the Montreal Protocol the phasedown of the production and consumption of Hydrofluorocarbons (HFCs).
- The Kigali Amendment entered into force on 1 January 2019 and SA rectify the Kigali amendment 2019 (August).
- South Africa is currently developing the Kigali Amendment Implementation plan and the draft HFC Regulations will be available by end of next financial year.









# Common uses of ODS and Non ODS

- Refrigeration's
- Blowing agent for foams
- Propellants for aerosols
- Fire extinguishers
- Fumigants







**REFRIGERATION AND AIR CONDITIONING IS NO LONGER A** LUXURY BUT ESSENTIAL FOR:

Food safety,

Distribution of vaccines,

Preservation of food stuffs,

Global trade in perishables,

Deep level mining,

Air travel,

Functioning of data centres,

Safe environments in health care centre and hospitals,

Blow moulding of plastics,

Comfort cooling in workplaces (impact on productivity)

Food processing









## Refrigerants











#### **Ozone absorbs Ultra Violet (UV) radiation**









#### **Impacts of Ozone Layer Depletion**



#### Legislation framework/Roles and responsibilities

- NEM: AQA (Act No. 39 of 2004) on the following Sections: 53. Regulations by Minister. – The Minister may make regulations that are not in conflict with this Act, regarding-
  - (a) any matter necessary to give effect to the Republic's obligations in terms of an international agreement relating to air quality;
  - (e) ozone-depleting substances
- The Regulations regarding the Phase-out and management of Ozone depleting substances is - National Ozone Unit is tasked with the monitoring and control of ODSs.
- ODSs are controlled in collaboration with other Departments (SARS, ITAC and Department of Agriculture and Department of Labour)







## **Summary of the Regulations**

 Unless if its critical use, the regulations prohibit the production, importation, exportation, use and placing on the market of:

-CFCs,

-BCFCs,

-Halons,

-Carbon tetrachloride,

-1,1,1 trichloethane,

-HBFCs and

-Bromochloromethane

-Methyl Bromide after 1 January 2015

• The use, export or placing in a market of products or equipment containing the ODSs listed above which were manufactured or imported before the coming into effect of this Regulation is not prohibited.







## **ODS Regulations summary**

The current regulations provide for the following:

- The prohibition of certain activities (i.e. production, use, placing on the market, imports and exports), except the use of recovered halons in existing fire protection systems which would be allowed when approved by the Director General.
- The prohibition for the stockpiling of ozone depleting substances.







## HCFC PHASE-DOWN SCHEDULE

Period	Reduction	SA Target
1 Jan to 31 Dec	%	ODP T
2015	10	332.7
2020	35	240.3
2025	67.5	120.1
2030	97.5	9.24
2040	100	0



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#### **Penalties**

• A person is guilty of an offence if that person

Contravenes regulations 3-8, intentionally supply false or misleading information in any application

• A person convicted of an offence is liable in the case of a first conviction to fine not exceeding R5 million or 5 years imprisonment and in the year of second or subsequent conviction to a fine not exceeding R10m or imprisonment for period not exceeding 10 years and in respect of both instances to both such fine and such imprisonment























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#### FOCUS ON NATURAL REFRIGERANTS

Leapfrogging ensures energy savings efficiency for appliances using natural refrigerants



#### Available refrigerant with GWP below 1000

Substance	GWP
R32	675
R290 (Propane)	0.002 - 3
R6450A	604
R600A	4
R717 (Ammonia)	0
R718	0
R728	0
R744 (Carbon dioxide)	1
R1270	2
1234yf	4
R1234ze	6



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## Gaps identified

- Increasing numbers of technicians in the RAC Informal Servicing Sector,
- HCFC phase-out fast approaching and replacement/ alternatives for HCFCs are flammable and knowledge of safe handling of alternative refrigerants is required
- Refrigerant leaks in the RAC sector which leads to demand for more ozone depleting & globall warming refrigerants for related equipment/machinery
- Lack of relevant training and awareness







#### Conclusion

- Mechanisms in place and they are also strengthened by the DEFF Green Scorpions and ITAC, DEL (SAQCC gas, SARRACA).
- We encourage replacement of old and non-functional units with equipment that use alternative refrigerants that are also energy-efficient.
- National Ozone Unit welcome invites to provide workshop to servicing technicians who are responsible for servicing equipment for all stakeholders
- DFFE in partnership with DEL, DHET, QCTO and RAC sector and have identified the need of developing the National skills programme for Refrigeration and air conditioning.
- National skills programme is design to formalise the informal sector, and provide a certificate, safe handling card and tools upon completion.
- Invitation for informal RAC servicing technicians with at least one year experience for participation in the initiative is open for the next training circle. Applicant should be South African citizen to qualify.









## **THANK YOU!**

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