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KIGALI AMEMDMENT AND THE REFRIGERATION AND AIR CONDITIONING SECTOR IN AFRICA

CASE in Cameroon

TRAINING WEBINAR No 39

U3ARC

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OzonAction

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Presentation plan

- *Overview of the Montreal Protocol*
- *Gestion du cycle de vie des Réfrigérants*
- *Rôle de l'agent national de l'ozone*
- *Projects implemented under the Montreal Protocol*
- *Timetable for HFC phase-down*
- *Alignement avec l'Amendement de Kigali*
- *Défis rencontrés.*

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Introduction – Overview of the Montreal Protocol

What is the Montreal Protocol

- This was a protocol that was signed in 16th of September 1987 in Montreal, Canada, on Substance that deplete the ozone layer.
- The objective is to protect the health of human and the environment from the harmful effect of the modification of the ozone layer.
- *Aware* that measures to protect the ozone layer from modifications due to human activities require international co-operation and action, and should be based on relevant scientific and technical considerations,
- *Aware also* of the need for further research and systematic observations to further develop scientific knowledge of the ozone layer and possible adverse effects resulting from its modification,
- *Determined* to protect human health and the environment against adverse effects resulting from modifications of the ozone layer.

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The Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol on Substances that Deplete the Ozone Layer are the two most successful multilateral environmental agreements (MEAs) which were all ratified by Cameroon on 30 August 1989. Since then, Cameroon has ratified all amendments to the Montreal Protocol. These include:

AMENDMENTS	YEAR	Type
Vienna Convention	30 August 1989	Accession
Montreal Protocol	30 August 1989	Accession
London Amendment	08 June 1992	Acceptance
Copennagen Amendment	25 June 1996	Acceptance
Montreal Amendment	21 August 2009	Ratification
Beijing Amendment	21 August 2009	Ratification
Kigali Amendment	**24 August 2021**	Ratification

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What substances are controlled under the Montreal Protocol ?

The MP controls more than 100 chemicals that are grouped into the following categories; these substances can be in its pure state or mixtures.

- ❑ Chlorofluorocarbons (CFCs)
- ❑ Halons
- ❑ Carbon tetrachloride (CTC)
- ❑ Hydrochlorofluorocarbons (HCFCs)
- ❑ Hydrofluorocarbons (HFCs)
- ❑ Methyl chloroforms and
- ❑ Methyl bromide

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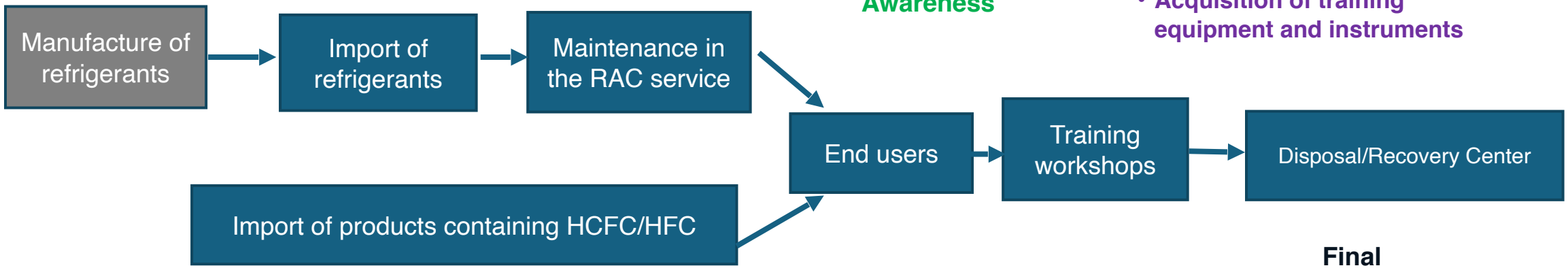
Refrigerant Life Cycle Management

- Granting of permits and quotas
- Training of customs and environmental officers
- Acquisition of identifiers

Service projects

- Zero leakage rateTechnical assistanceand Awareness

- Recovery, recycling and regeneration of refrigerants
- Training and certification
- Acquisition of training equipment and instruments



- Measures, legislation and executionTraining of customs officers and environment

- Development of regulatory standards for products and services
- Labeling
- ,record keeping and reporting

Final elimination

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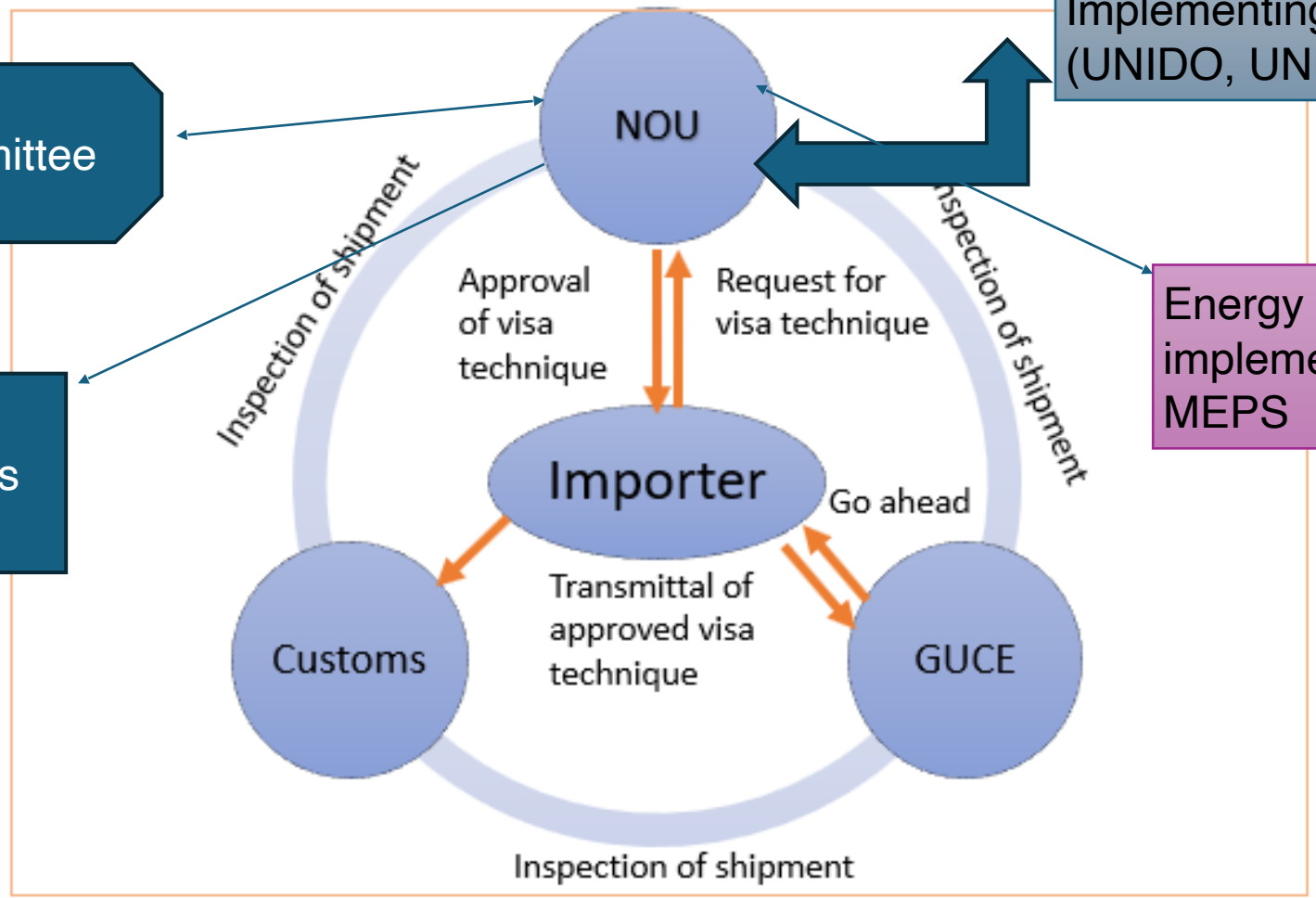
Role of the National Ozone Officer / Montreal Protocol Officer

Ozone committee

Associations

Implementing agencies (UNIDO, UNEP and GIZ)

Energy Officers implementation of MEPS



NOU attends all meetings organized by the Ozone secretariat, MLF and other international instances related to

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HPMP Projects

HYDROCHLOROFLUOROCARBONS PHASE OUT MANAGEMENT PLANS

Project Name	Execution Period
HPMP Stage I	2011 to 2017 but extended to Mid 2019
HPMP Stage II	2019 to 2025
KIP I	2023 to 2030

HPMP Stage I **approved at the 75th ExCom meeting**

HPMP Stage II **approved at the 81st ExCom meeting**

KIP Stage I approved at the 92nd EXCOM

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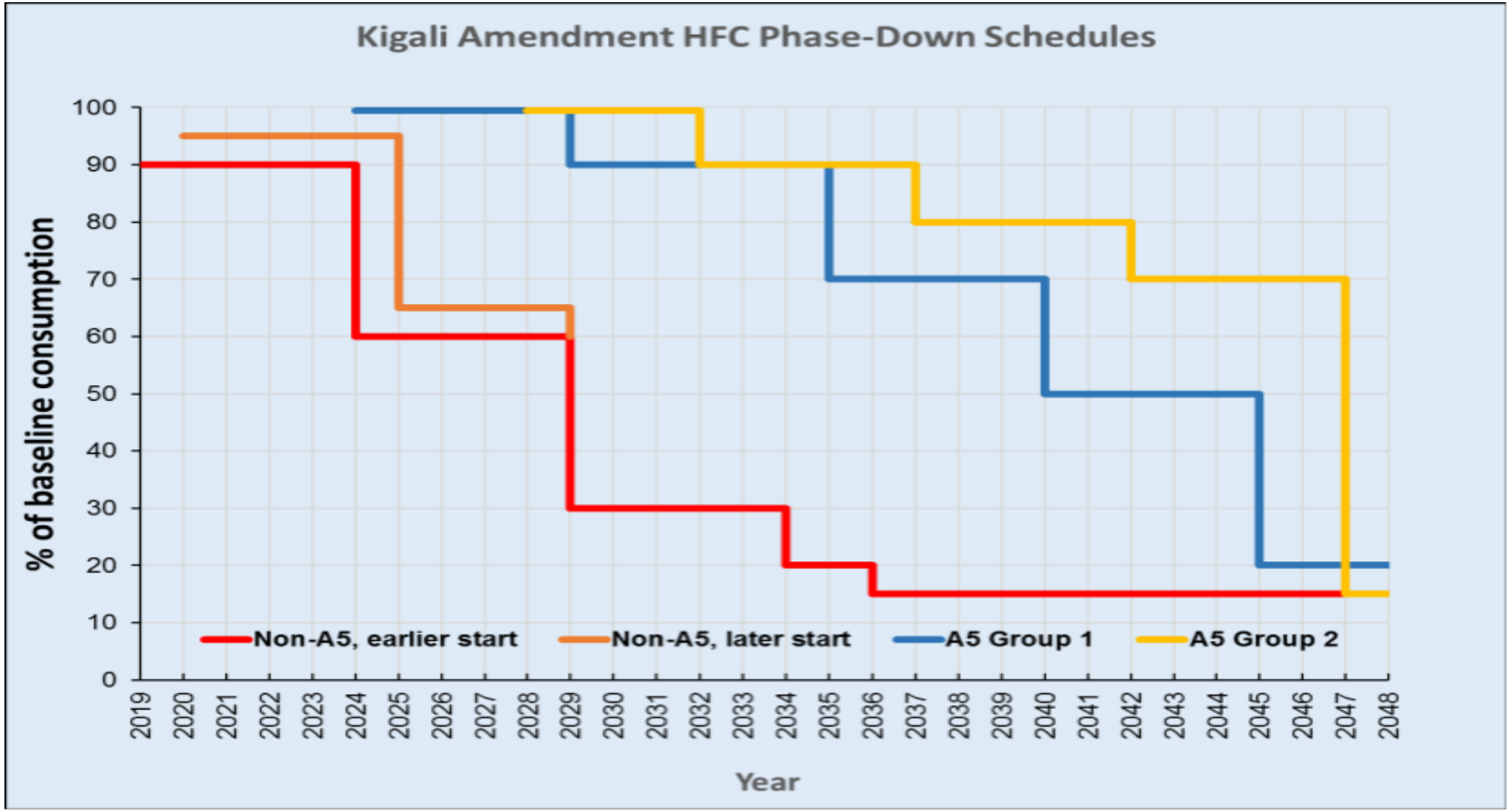
NATIONAL POLICIES, PROJECTS AND INITIATIVES

- ***Important achievements and milestones achieved***
  - The delivery in 2021 of 111 (one hundred and eleven) and in 2023 of 55 (fifty-five) equipment for a total amount of more than one hundred and sixty-five million (165,000,000) CFA francs to some structures in the refrigeration and air conditioning sector, including customs officers, academics, industrialists and refrigeration technicians;
  - Elimination of 60% of HCFCs (R-22) approximately 112.8 ODP tonnes
  - Training of more than 1,250 refrigeration and air conditioning technicians on best practices that respect the ozone layer;
  - Training of more than 350 customs officers and environmental inspectors on techniques for controlling substances and equipment containing ozone-depleting substances;
  - The issuance of more than 10,000 technical visas for the quality control of ozone-depleting substances;
  - The establishment of a licensing and quota system to ensure the gradual elimination of ozone-depleting substances and HFCs.

What is the timetable for HFC phase-down?



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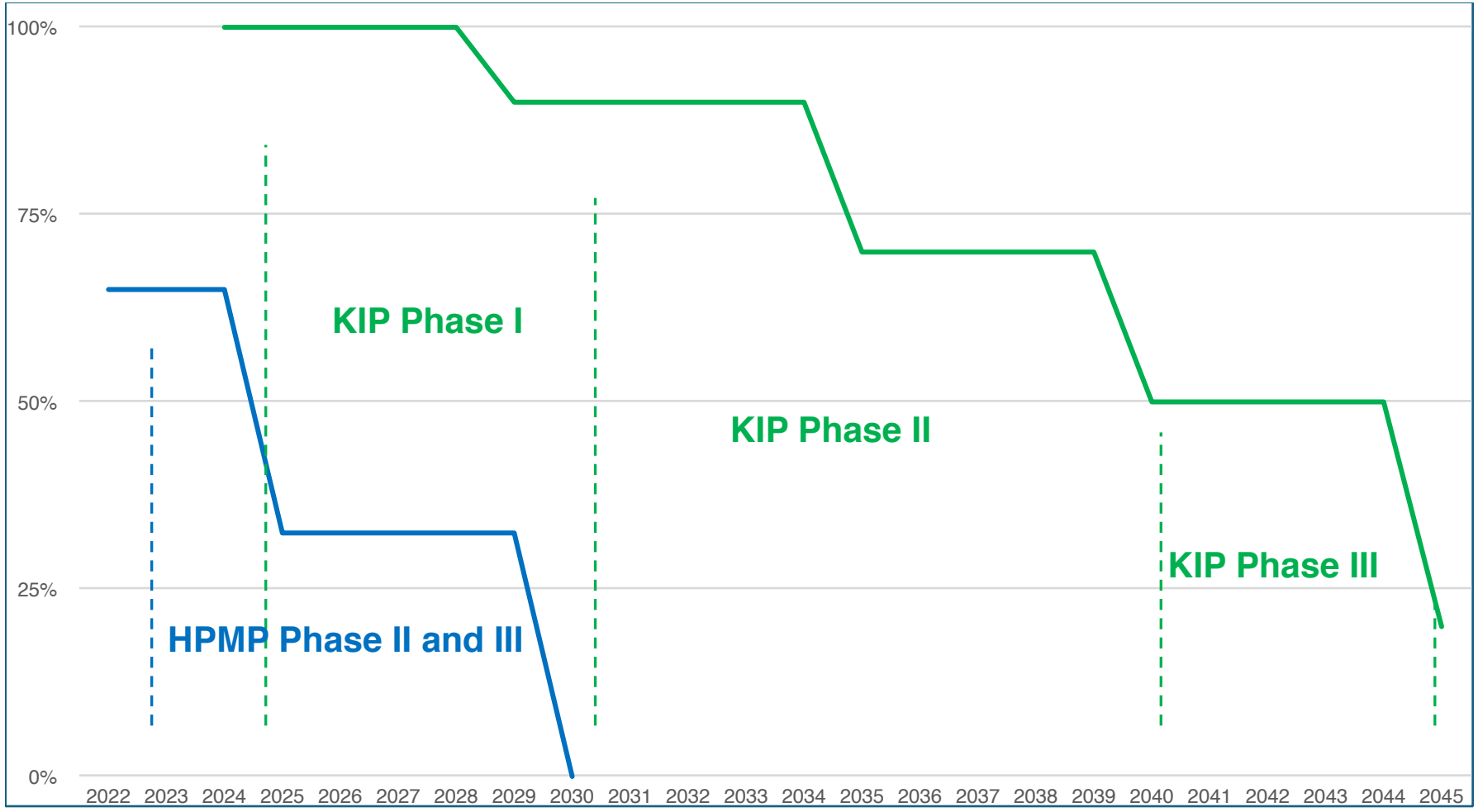
Calendar comparing the phase down HFC and phase out of HCFC



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Alignment with the Kigali Amendment

Cameroon was the first country to have its first phase of the KIP validated by EXCOM during its 92nd meetings.We have started its implementation. It is composed of six components. Namely;

- **Component 1** relating to: **Refrigeration sector**, including domestic, commercial, industrial and transport subsectors;
- **Component 2** relating to: **Air conditioning sector**, including residential and commercial subsectors;
- **Component 3** relating to: **Mobile air conditioning sector** ;
- **Component 4** relating to**: Refrigerant management,**
- **Component 5** relating to**: Regulatory framework and control mechanism**, and
- **Component 6** relating to: **Coordination and management**.

This first phase was officially launched by the Minister of Environment on September 16, 2024.

Activities for KIP

Area of work	KIP
	Activity
Updating the regulatory framework	Strengthening the HFC licensing and quota system, developing, revising and adopting standards and labeling of refrigerants, licensing of service workshops
Training of customs officers	Training 350 customs and enforcement officers
Provision of tools to customs	Provision of 35 refrigerant identifiers to customs & stakeholders
Training (RAC technicians)	Training 125 AC technicians
Training of refrigeration technicians	Training 920 domestic refrigeration technicians
Training of MAC technicians	Training 920 MAC technicians
Provision of tools for AC training	
Provision of tools for refrigeration training	Provision of tools and equipment (refrigeration)
Provision of tools for MAC training	Provision of tools and equipment (MAC)
Training and awareness for firefighting	Training programme and awareness regarding alternative refrigerants
Certification of technicians	Establishment of certification scheme
Development of codes and SOP	Development of code of practice for MAC
Updating curricula	Developing a curriculum (customs officers)
Centre of excellence	Assessment of the economic feasibility of reclamation facilities
Awareness raising	Awareness to end-users (all priority sectors)
Consumption monitoring	Strengthening of HFC import records by customs, and record keeping by companies, improving market monitoring
Supporting the association	Supporting the industry association (all sectors)
Assistance to SMEs	SME programme (commercial refrigeration)
Technology demonstrations	Technology demonstration programme (domestic refrigeration) (residential AC)
Studies related to refrigerant handling and disposal	Studies on sound management of non-reusable refrigerants and study end-of-life appliances and HFC banks
Coordination and management	Coordination and management

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Pilot project within KIP I

- Institution of a logbook for RAC technicians to permit them be accountable and better manage refrigerant manipulated .
- Recover 4.5MT of R-22 for Societe Boisson du Cameroun (SABC) replaced by ammonia (NH3).
- Replacement of two (2) ice making machine operating on R-22 about 8MT avoided with propane (R290).
- La rétrocession à l'hôpital gynécologique, obstétrique et pédiatrique de Yaoundé de l'équipement de froid et de climatisation (chambre mortuaire, réfrigérateurs…)
- le MINEPDED a bénéficié du projet ROCA, de deux cents (200) climatiseurs aux réfrigérants verts.

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Challenges encountered.

- *Low field application of training received by refrigeration and air conditioning technicians;*
- *The RAC service infrastructure is not adapted to properly manage flammable refrigerants.*
- *Cameroon has a huge informal sector that lacks the know-how and tools to work efficiently;*
- *Insufficient funding compared to the volume of work prescribed by the Montreal Protocol to the parties;*
- *Delays in customs clearance of tool shipments,*
- *Availability of identifiers but not sufficient.*


THANK YOU