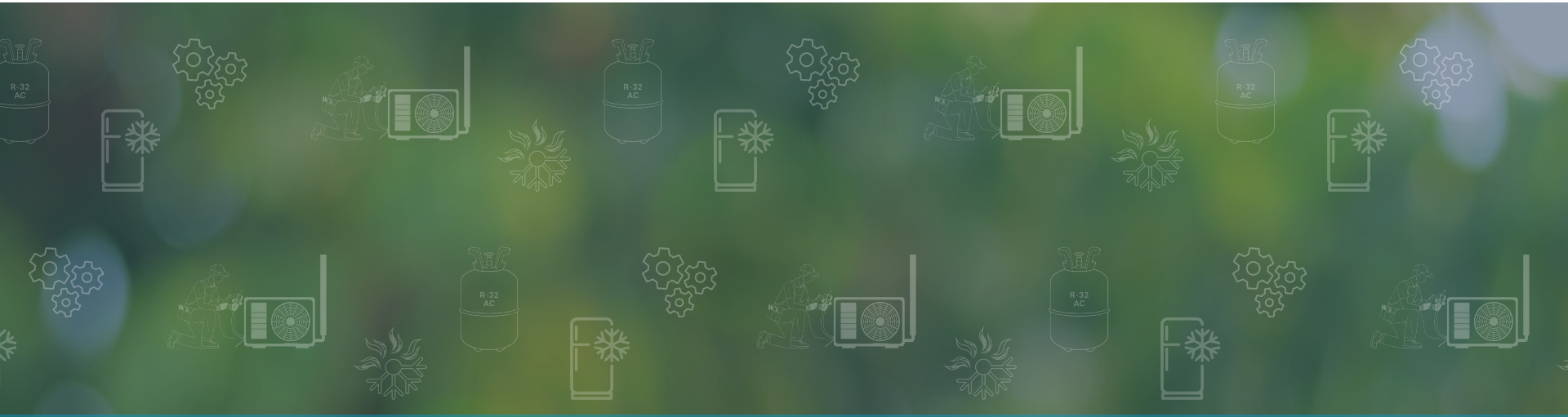
UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION
Progress by innovation

60 YEARS

MOP38
2–6 NOVEMBER 2026 | KIGALI, RWANDA



From inventories to action: UNIDO's support for country-specific lifecycle refrigerant management

Findings from the inventories of banks of used or unwanted controlled substances and the national action plans under MLF decision 91/66

Example of four countries, four inventories, four action plans

Country	What was inventoried	Largest component	Action plan
Country 1 (Non LVC)	Installed bank, RAC and foam, 2025	**HFCs: 94%** incl. 37,877 t in foam	**US$5.35M, 6 years** ≥217 t managed and verified
Country 2 (non LVC)	Installed bank, RAC and foam, 2025	**HFCs: 72%** HCFC-141b foam: 19%	**US$2.5M, 5 periods** targets after year-1 check
Country 3 (LVC)	Installed bank, RACHP, fire and aerosols	**HFCs: 86%** 90% of CO_2-eq	**Draft national plan** reclamation centre; export for destruction
Country 4 (LVC)	Waste cooling equipment collected, 2020–2024	**Foam agent: 49%** HCFC-22: 56% of refrigerant	**US$2.03M, 2027–2034** reclamation plant

Large installed banks but low accessibility

Installed bank
Refrigerant in RAC equipment in use: the upper limit, not a target

Servicing
During repair and maintenance, mainly at large end-users

End of life (EoL)
Residual charge in equipment retired each year

Recovered today
Only a small share of both

The action plans aim to close this gap, step by step.

HCFC-22: a declining bank
as old equipment is decommissioned. Recover it while flows remain.

HFC banks are growing
New HFC and HFC/HFO blends, often A2L, need identification and segregation.

Foam blowing agents
CFC-11 and HCFC-141b in old PU insulation. Recovery units can't reach them.

Air-conditioning dominates
Commercial, residential and mobile AC hold most of the CO_2-eq bank.

Banks are modelled
Refrigerant type and charge are not declared at import, so estimates need updating

CHOOSING A METHOD

The best inventory models the stock, then checks it twice

Equipment cohort model

BEST FOR
Bank size by sector, timing of end-of-life flows, projections to 2045.

LIMIT
Needs stock, charge and lifetime data that few countries hold.

Installed, available, accessible

BEST FOR
Realistic targets and a baseline to measure progress against.

LIMIT
Accessible share must be re-estimated as infrastructure grows.

CHECK

Customs and survey reconciliation

BEST FOR
Traceable totals, verified by national experts.

LIMIT
Surveys reach registered firms only; weak on timing.

CHECK

Collected waste model

BEST FOR
Rests on weighed waste; careful vintage modelling.

LIMIT
Misses the installed bank; cannot project; bulk mass only.

RECOMMENDED HYBRID

1 Model the stock
Equipment cohorts by sector and substance.

2 Split the bank
Installed, available and accessible tonnes.

3 Reconcile
Totals against customs and consumption data.

4 Calibrate
Against weighed collection and recovery.

Financing LRM beyond the project

Regulated model

EPR fees, import levies or tax measures. Clear results, but needs enforcement.

Market-based model

Refrigerant prices and carbon credits (voluntary, Article 6, JCM). Flexible, but less certain.

MLF funding window

Decision 91/66 funds inventories and plans only. Decision 93/104 opens the question of funding implementation.

FINANCING TOOLS THE PLANS COMBINE

Results-based payment

Paid per kg recovered, weighed and verified

Phased-out out support support

MLF funds start-up; tariffs take over

EPR and service service fees

Producers and end-users fund collection

Reclaimed refrigerant sales

Revenue from certified refrigerant offsets costs

Public budget

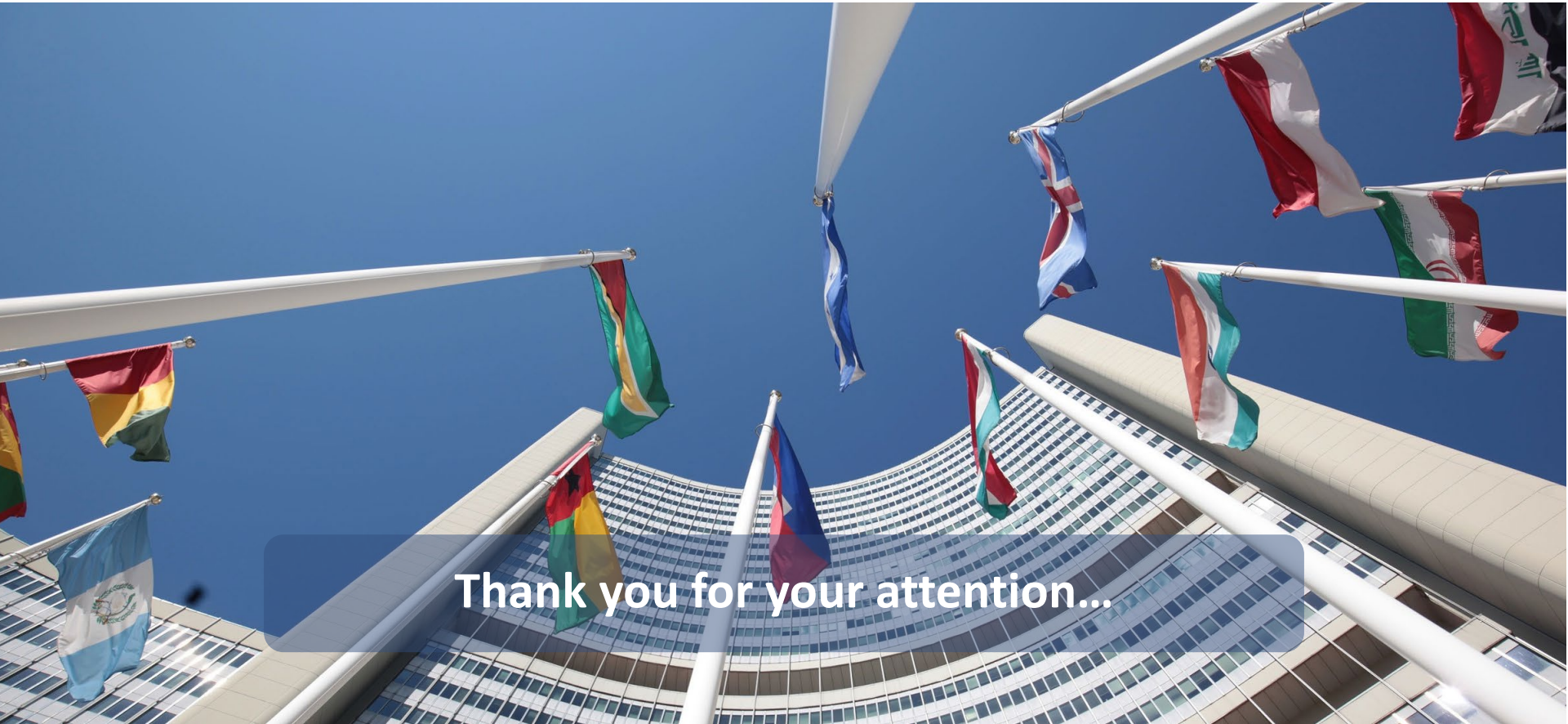
Registers, inspection and enforcement

Key lessons and next steps

1. **Plan on the accessible bank**
   Size the plan on EoL flows, not the installed bank. Validate the baseline first.
2. **Regulation first**
   Mandatory recovery, registers and a transfer manifest make refrigerant flow.
3. **Differentiate by subsector**
   Leak management for large end-users; WEEE-linked collection for dispersed sources.
4. **Treat foam blowing agents separately**
   They need their own dismantling, treatment route and accounting.
5. **Design the exit early**
   EPR fees, service contracts and reclaimed refrigerant sales should replace MLF funding.

Next steps

- Help countries finalise and endorse their plans
- Prepare funding requests to the MLF
- Launch pilots with large end-users
- Keep inventories updated
- Explore regional reclamation and destruction centres
- Share lessons with Article 5 countries



Thank you for your attention…