Republic of Rwanda

MOP38
2-6 NOVEMBER 2026 | KIGALI, RWANDA

THE KIGALI AMENDMENT 2016–2026

UN environment programme
ozone secretariat

Vienna Convention
MONTREAL PROTOCOL

CERTIFICATION AND TRAINING ACROSS CONTINENTS: PROGRESS AND FUTURE SCENARIOS ON THE 10TH ANNIVERSARY OF THE KIGALI AMENDMENT

THURSDAY
5 NOVEMBER 2026

13:00 - 15:00

AD12-B

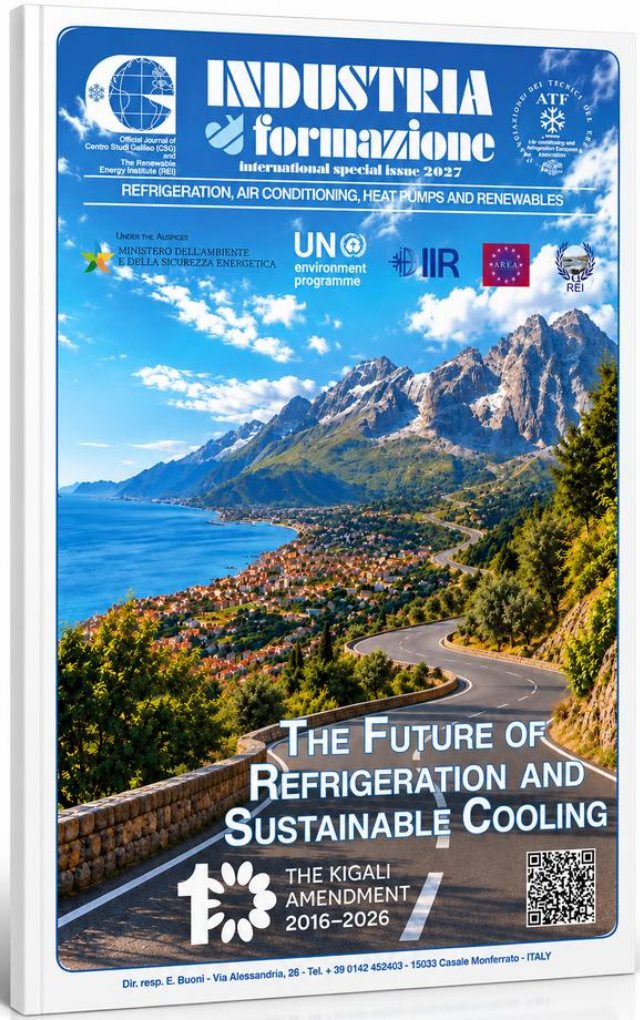


Agenda

- 13:30–13:40 | **Opening Remarks & Launch of the International Special Issue 2026-27**
  by Marco Buoni (ATF) & Yosr Allouche (IIR)
- 13:40–14:40 | **International and Regional Perspectives on Certification and Training**
  - **Yosr Allouche** – International Institute of Refrigeration (IIR): International Perspective
  - **Marco Buoni** – Associazione Tecnici del Freddo (ATF): The European Experience
  - **Baolong Wang** – Tsinghua University, China: The Chinese Experience
  - **Basile Seburikoko** – U-3ARC, Africa: The African Experience
  - **Mark Miller** – MOPIA, Canada: The North American Experience
  - **Kylie Farrelley** – RRA, Australia: The Oceanian Experience
- 14:40–15:00 | **Q&A and Open Discussion**
  - Questions and discussion with the audience
  - Closing Remarks

International Special Issue 2026–2027 | 11th Edition

The Future of Refrigeration and Sustainable Cooling



A DECADE OF PROGRESS, SHAPING THE FUTURE OF SUSTAINABLE COOLING

- ***Celebrating 10 Years of the Kigali Amendment***
  A decade of progress and transformation.
- ***25 Technical & Scientific Articles***
  Global expertise, research and perspectives.
- ***A Shared Vision for the Future***
  Innovation, sustainable technologies and skills development.

Official launch – MOP38 | Kigali, Rwanda | 5 November 2026

Published under the auspice of the MASE in cooperation by CSG, UNEP OzonAction, IIR and AREA

Opening remarks:

International Perspective on RACHP Certification and Training

Yosr Allouche

Director General

IIR International Institute of Refrigeration

Overview of training and certification for refrigeration and air conditioning technicians

- Technicians are responsible for proper handling of refrigerants and system maintenance.
- Certifications ensure technicians are trained in safety, environmental compliance, and technical skills.
- Common focus: refrigerant handling, system diagnostics, and energy efficiency.
- The **IIR has database** on courses and training



Standards, Regulation and Certification: International Overview

- **International standards:** ISO 5149-4:2022 (operation, maintenance, repair and recovery) and ISO 22712 (competence of personnel); ISO 817 (refrigerant designation and safety classification)
- **Regional/national reference standards:** EN 378-4 and EN 13313 (EU, competence of refrigeration personnel); ANSI/IIAR 6, 7 and 8 (US ammonia: inspection and testing, operating procedures, minimum system safety)
- **Certification approach:** national or regional regulation (mandatory), or voluntary industry schemes (e.g. RSES, ESCO Group in the US; ARCtick in Australia)

Regulation examples around the wolrd

- USA: EPA 608
- EU: F-Gas Regulation (EU) 2024/573 and its implementing regulation on personnel and training body certification
- Canada: Red Seal (interprovincial trade certification)
- Australia: ARC licensing scheme (ARCtick)
- **Article 5 countries:** national ODS regulations implementing the Montreal Protocol/Kigali Amendment (technician certification requirements set nationally)



Certification and Training Across Continents:
Progress and Future Scenarios on the 10th Anniversary of the Kigali Amendment

The European Experience

Marco Buoni

Centro Studi Galileo *Director– Italian Certification centre*

AREA *Former President w/ international affairs mandate*

Path to “meet” Kigali requirements (Building on 20 Years of EU F-gas Experience)

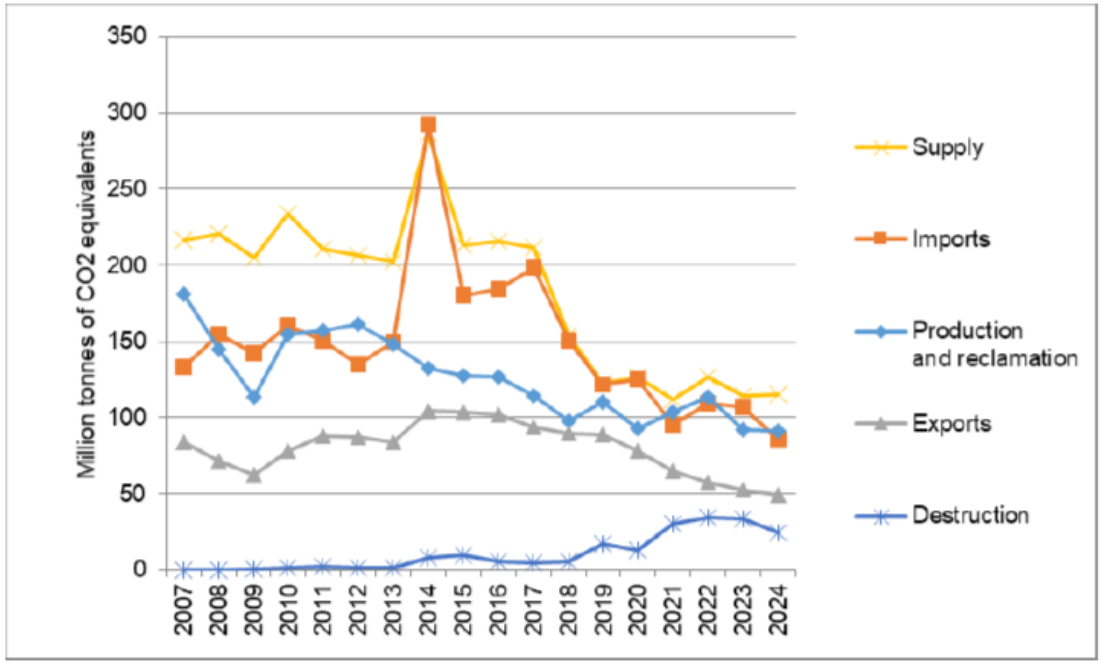
Fgas Regulation and the Certification is working (400.000 certified technicians in EU):

- Refillable Cylinders
- Mandatory leak checks
- More controls on the system, periodical inspections
- Mandatory Training and certification more competence, skilled personnel and companies
- Mandatory Equipment better equipped, calibration, recovery, reuse, reclaimed refrigerant

→ lower quantities of high GWP refrigerants in the market

→ higher quantities of alternative refrigerants (mainly flammables)

Figure B-3 Supply, production, import, export and destruction of F-gases (CO_2e)



EEA Fluorinated greenhouse gases report 2025

F-gas certified personnel and companies by country (2023)

Austria	1,321
Belgium	2,563
Croatia	1,906
Czech Republic	550
Denmark	2,767
Estonia	N/A
Finland	4,995
France	20,000
Germany (1)	3,500
Greece	120
Ireland	817
Italy	43,786
Netherlands	2,000
Poland	13,557
Portugal	2,200
Slovakia	1,979
Spain	19,100
Sweden	1,745
Total EU	**122,906**
Norway	1,359
Turkey	26
Total non-EU	**1,385**
Grand total	**124,291**

Companies

Austria	3,970
Belgium	9,742
Croatia	2,434
Czech Republic	7,126
Denmark	5,944
Estonia	430
Finland	11,220
France	50, 000
Germany	63,900
Greece	10,600
Ireland	4,800
Italy	79,281
Netherlands	3,200
Poland	43,245
Portugal	6,536
Slovakia	1,728
Spain	56,000
Sweden	8,716
Total EU	**368,872**
Norway	4,037
Turkey	5,000
Total non-EU	**9,037**
Grand total	**377,909**

Personnel

UK 52.300 (in 2021)

Certification and training

- **Certificate A1** attesting that holders may carry out all the activities provided for in Article 2(1) in relation to **fluorinated greenhouse gases and hydrocarbons**;
- **Certificate A2** limited to equipment with a charge size of less than 3 kg (6 kg hermetically sealed)
- **Certificate B** attesting that holders may carry out all the activities provided for in Article 2(1) in relation to carbon dioxide (**CO_2**)
- **Certificate C** attesting that holders may carry out all the activities provided for in Article 2(1) in relation to ammonia (**NH_3**);
- **Certificate D** attesting that holders may carry out the activity of recovery for the equipment containing less than 3 kg HFC/HFO (6 kg hermetically sealed); (**Recovery**)
- **Certificate E** attesting that holders may carry out leak check HFC/HFO (**Leak check**)

F-Gas Certification curriculum

		Certificate					
SKILLS AND KNOWLEDGE		A1	A2	B	C	D	E
1	**Legislation and basic thermodynamics**						
1.00	Basic understanding of the applicable EU and national legislation, in particular F-gas, WEEE and Ecodesign	T	T	T	T	T	T
1.01	Knowledge of the basic ISO standard units for temperature, pressure, mass, density and energy	T	T	T	T	T	T
1.02	Understanding of basic theory of refrigeration systems: basic thermodynamics (key terms, parameters and processes such as Superheat, High Side, Heat of Compression, Enthalpy, Refrigeration Effect, Low Side, Sub-cooling), properties and thermodynamic transformations of refrigerants, including identification of zeotropic blends and fluid states	T	T	T	T	T	—

- **set of minimum competence requirements (2215/24, Implementing Regulation Annex I)**
- Certificate A1&A2,B,C,D,E: HFCs and flammable large, HFCs & flammable small, CO2, Ammonia…….
- based on state-of-the-art standards EN 13313 and ISO/DIS22712

Contains: (a) applicable regulations and technical standards;

(b) emission prevention;

(c) recovery of fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II;

(d) safe handling of equipment of the type and size covered by the certificate;

(e) safe handling of equipment containing flammable or toxic gases or operating under high-pressure or involving other relevant risks;

(f) the measures for improving or maintaining the energy efficiency of equipment during installation, or maintenance or servicing.

EU MAC Certification

The new **F-gas Reg. (EU) 2024/573** sets new minimum attestations requirements which expand to more vehicle types.

- **Attestations and Training Types**:
  - **M1**: Full range of activities including servicing, leak checks, repair and recovery of F-gases and Hydrocarbons.
  - **M2**: activities including servicing, leak checks, repair and recovery of F-gases and Hydrocarbons only when an automatic recovery station is used (pics below).
  - **M3**: activities with units using CO2.
  - **M4**: Recovery of F-gases and limited-service activities.
- The EU association of contractors and technicians dealing with larger stationary and mobile AC and refrigeration units
- There are no specific requirements to possess particular tools, but since recovery and leak checks are mandatory, it is pr machine and a leak detector would be necessar







REAL Alternatives
consistent learning among EU contries
for low GWP refrigerants

- **Flammables** (HCs - HFOs - low GWP blends), **CO_2, Ammonia**
- **9 Modules Free learning material** available for download
- **Multi-lingual** programme (17 languages – 21 EU or 25 tot countries)
- **Licensed training providers (around 30) in each country:**
  - **Best Practices** in fully equipped laboratories, focusing on the safety issues
  - **Theory** in classroom or remote
- **Certification (theory and practice)** consistent and recognized among project members (more than 3000 certificates so far)



www.realalternatives.eu

Instructions on how to organise a course & certification

→New partners, Training providers or just learners in our training centres are welcome!

Different equipment & procedures with low GWP refrigerants

The use of flammable gases in the equipment will be subject to the implementation of some risk mitigation measures such as, among other things: the introduction of shut-off valves, pump down to the outdoor unit, pressure switches, continuous ventilation or additional regulated by leak detector on board the machine, ATEX certified electronics. All this can make us understand how the initial cost of the appliance, installation, but also maintenance/repair, of a small domestic air conditioner can increase considerably.

In addition to the inevitable increase in costs for the equipment, it is useful to remember that the individual companies involved in the installation, maintenance and repair of these appliances must face considerable investments to equip themselves with tools and equipment suitable for flammable gases.













Service procedure differences

Need to carry out or refer to a RISK ASSESSMENT and taking into account control measures prior to carrying out any work.

- The properties of the alternative refrigerants, and in particular their hazards, affect how systems are serviced and maintained

Remember
If you are unsure of anything:
Do Not Proceed.
Stop work and ask the question!



Refrig.	Work area	Equipment	Leak testing	Charging	Recovery / disposal
R744	Very well ventilated	Suitable for the very high pressure	Method must be sensitive to R744	Initial charge should be gas to prevent dry ice formation	Venting is the usual practice
R717	Very well ventilated and free from sources of ignition	Suitable for use with R717 and free from sources of ignition	Method must be safe and sensitive to R717		Recovered
R32		Suitable for the high pressure and free from sources of ignition	Method must be safe and sensitive to R32		Recovered
R1234ze		Free from sources of ignition	Method must be safe and sensitive to R1234ze		Recovered
R600a R290			Method must be safe and sensitive to HCs	Charge weight is less so accuracy important	Small amounts* can be vented, otherwise HC is recovered
R1270					

Maintenance and Repair

Suitable gloves and safety glasses should be worn when working with any refrigerant, and when carrying out hot works (brazing / welding). Antistatic wrist strap should also be worn



*Small amounts are usually considered to be less than 150g.

MRV Monitoring Reporting Verification System

- Badge / Online public list of certified technicians and companies
  - only Certified Technicians holding a certificate are allowed to:
  - ➢install, maintain, repair, recover, dismantle RAC systems containing refrigerants
  - ➢buy the refrigerant
- Online logbook with interventions, repairs, installations (census)
- Periodical inspections…



Certificate N. xxxxxxxxxx

CEPAS

Cepas S.r.l. declares that:

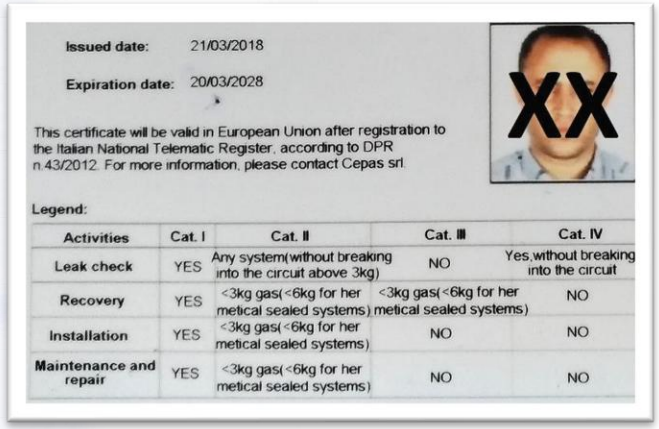
HOUSSEM xxxxxxxxx

xxxxxxxxxxxxxxxxx

Born on 29/06/1981 in xxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Is certified in accordance with Regulation (CE) 303/2008 as operator of stationary refrigeration, air-conditioning and heat pump equipment containing certain fluorinated greenhouse gases, category I

Massimo Dutto
Cepas Chief Executive



Issued date: 21/03/2018

Expiration date: 20/03/2028

This certificate will be valid in European Union after registration to the Italian National Telematic Register, according to DPR n.43/2012. For more information, please contact Cepas srl

Legend:

Activities	Cat. I	Cat. II	Cat. III	Cat. IV
Leak check	YES	Any system(without breaking into the circuit above 3kg)	NO	Yes,without breaking into the circuit
Recovery	YES	<3kg gas(<6kg for her metical sealed systems)	<3kg gas(<6kg for her metical sealed systems)	NO
Installation	YES	<3kg gas(<6kg for her metical sealed systems)	NO	NO
Maintenance and repair	YES	<3kg gas(<6kg for her metical sealed systems)	NO	NO

Recent Training and Certification, and venue assesment in Bhutan, Bangladesh, Nigeria, Egypt, Marocco







Assessing training centres in Bhutan, Bangladesh, Nigeria, Egypt, Marocco







IMPACT-F | Integrated Mitigation Platform for Assessing Climate Targets for F-Gases

Project duration 36 months (2026-2029)

10 Archetype Countries

14 International Partners

- ***What the project will do?***

Develop a state-of-the-art global web platform to visualize and predict F-gas consumption in the refrigeration sector.

- ***How it will support capacity building?***

Strengthen global and national capacities through tailored training programmes, knowledge transfer and practical tools

Follow our journey!
Scan the QR code

IMPACT-F is funded by the European Commission under grant agreement 101294600

Conclusions

- **A lot of work still to do – A Growing Sector**
- **Change of mindset**: technicians & design engineers
- **New equipment**: hydrocarbons in A/C, CO_2 in commercial refrigeration
- **New behaviour**: improved attention to flammability & refrigerant recovery
- **The transition requires all elements to work together:** Phase-down of HFCs, Training and certification, Equipment bans, Responsible sale and handling of refrigerants, Recovery and reuse
- **Collaboration is essential**:
  - Institutions (UN agencies, NOUs, etc.)
  - Associations
  - Industry
  - SMEs & technicians
- Top of the class are trained in Europe and globally ➡️ **No one left behind**



Stronger together

Thank you

Marco Buoni

Email: buoni@centrogalileo.it



"For a clean, decarbonised and sustainable heating and cooling sector"

AREAVISION2030

AREA

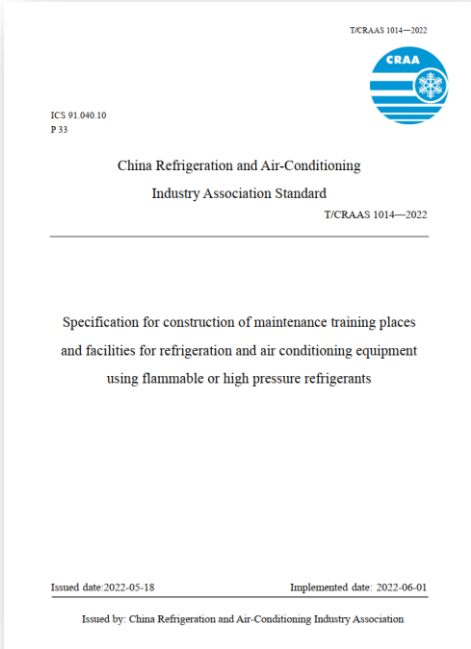
Update on Technician Training and Certification in China's RACHP Sector

Tsinghua University
China Refrigeration Association

Baolong WANG
November 2026

Standards for training facilities

- **T/CRAAS 1014-2022** *Specification for construction of maintenance training places and facilities for refrigeration and air conditioning equipment using flammable or high-pressure refrigerants*
  - **Layout of the training station, the ventilation of the training room, precautions for operating major facilities**
  - **Theoretical and practical requirements for teaching staff** and **training room management personnel**


T/CRAAS 1014—2022

ICS 91.040.10
P 33

China Refrigeration and Air-Conditioning Industry Association Standard

T/CRAAS 1014—2022

Specification for construction of maintenance training places and facilities for refrigeration and air conditioning equipment using flammable or high pressure refrigerants

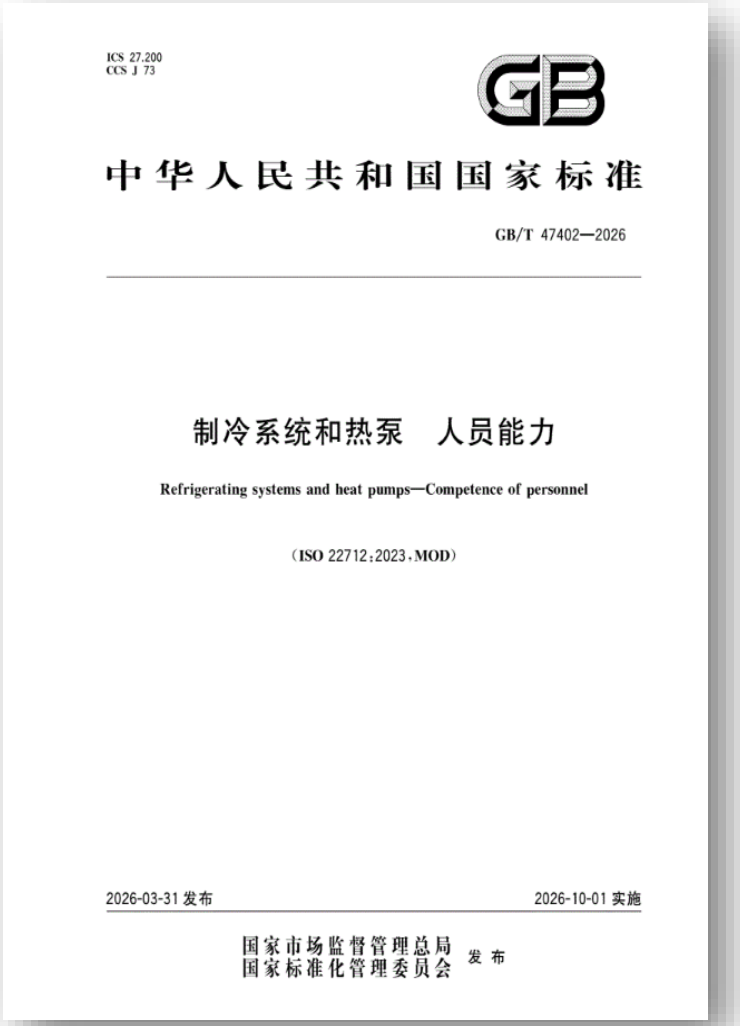
Issued date:2022-05-18 Implemented date: 2022-06-01

Issued by: China Refrigeration and Air-Conditioning Industry Association

Personnel competence standard

GB/T 47402-2026 Refrigerating systems and heat pumps: Competence of personnel (Modified adoption of ISO 22712:2023)

- Published: 31 March 2026
  Effective: 1 October 2026
- Provides a comprehensive set of guidelines about the training competencies for different personnel working on RACHP systems at different stages of the product lifecycle


ICS 27.200
CCS J 73

GB

中华人民共和国国家标准

GB/T 47402—2026

制冷系统和热泵　人员能力

Refrigerating systems and heat pumps—Competence of personnel

(ISO 22712:2023,MOD)

2026-03-31 发布　　2026-10-01 实施

国家市场监督管理总局
国家标准化管理委员会　发布

Training and certification in China

Credential	Purpose	Provider / authority
Special-operation certificate	Legal access to the listed operation	Competent authority under the relevant regulatory system
Occupational skill level certificate	Recognition of occupational proficiency	Filed employers or social evaluation organisations
Specialist training certificate	Evidence of training for a refrigerant or equipment type	Training institutes, associations or manufacturers

Special-operation scope: June 2026

- **Refrigeration category:** The new catalogue lists operation and maintenance of ammonia refrigeration equipment in the specified sectors.
- **Other RAC activities:** Electrical work and work at height remain subject to their applicable categories and scope.
- **Existing certificates:** Valid certificates for the former RAC operation or installation/repair categories convert to the ammonia category. Expiry dates stay unchanged.

Mandatory certification: current rules

Stage	MEM Order No. 19, effective June 2026
First certification	Theory and practical examinations, followed by qualification review
Validity	Six years, valid nationwide. Electronic and physical certificates have equal effect.
Renewal	Theory training and examination within the last six months. Apply within the last 60 days.

The former three-year review no longer applies. These rules concern operations within the MEM system.

Thanks

wangbl@tsinghua.edu.cn

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RAC SECTOR CERTIFICATION SYSTEMS IN AFRICA

State of play - Challenges - Opportunities

BASILE SEBURIKOKO

SECRETARY FOR COMMUNICATION & EXTERNAL RELATIONS, U-3ARC
TECHNICAL DIRECTOR, ACES RWANDA
PRESIDENT, RSHVACR (RWANDA)

1- WHY CERTIFICATION IS BECOMING A STRATEGIC ISSUE

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THE TECHNOLOGY TRANSITION

R290 • R32 • CO_2 • NH_3
More demanding safety and service competencies.

THE MARKET IS CHANGING

Cooling demand is increasing while equipment becomes more sophisticated

THE WORKFORCE IS DIVERSE

Formal TVET graduates and informally trained technicians work side by side.

1- WHY CERTIFICATION IS BECOMING A STRATEGIC ISSUE

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CERTIFICATION IS NOT ONLY A DOCUMENT

It is a mechanism to demonstrate competence, improve safety and build market trust.





2- THE STATE OF CERTIFICATION IN AFRICA

AFRICA DOES NOT HAVE ONE CERTIFICATION SYSTEM — BUT SYSTEMS ARE EMERGING





- Some certification center are emerging :
- Tunisia
- Burkina Faso
- Morocco
- National approaches at different stages for more countries:

  Ghana, Benin, Nigeria, Egypt, Tunisia, Etc

3- A FRAGMENTED LANDSCAPE — WITH A COMMON DIRECTION

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DIFFERENT MODELS • DIFFERENT LEGAL BASES • DIFFERENT LEVELS



WHAT IS ALREADY THERE

National certification / licensing schemes

WHAT IS MISSING

Comparable competency requirements

WHAT IS POSSIBLE

Regional recognition based on equivalence

The objective should not be uniformity — it should be TRUSTED COMPETENCE.

4- THE MAIN CHALLENGES



01 Fragmentation

Different schemes, certificates and assessment methods

02 Informal workforce

Practical experience is often not formally recognised.

03 Assessment capacity

Few practical centres, tools and qualified assessors.

04 Sustainability

Certification systems need durable financing and governance

4- THE MAIN CHALLENGES



05 New refrigerants

Flammability, toxicity and high-pressure systems raise

06 Recognition

Certificates need credibility with authorities and employers.

5- WHAT SHOULD AN AFRICAN CERTIFICATION SYSTEM MEASURE?

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LEVEL 1 — FOUNDATION

COMPETENCY

Principles • tools
• measurements
• refrigerant handling

LEVEL 2 — SERVICE

COMPETENCY

Leak detection • recovery
• evacuation • charging
• commissioning

LEVEL 3 — ALTERNATIVES

COMPETENCY

R290 / R32 • CO_2
• NH_3 • safety procedures

LEVEL 4 — ADVANCED

COMPETENCY

Diagnostics • controls
• energy performance
• supervision

FROM "ATTENDING A COURSE" → TO "DEMONSTRATING COMPETENCE"

6- THE OPPORTUNITY: FROM NATIONAL SYSTEMS TO REGIONAL RECOGNITION

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7- U-3ARC: A BRIDGE BETWEEN AFRICA AND INTERNATIONAL PARTNERS

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PAN-AFRICAN NETWORK	CAPACITY BUILDING	REGIONAL DIALOGUE	LEVEL 4 — ADVANCED
Connect national RAC associations, training actors and international	Support training, knowledge exchange and competency development	Help translate international good practice into African realities.	Diagnostics • controls • energy performance • supervision

AFRICA ↔ EUROPE ↔ GLOBAL HVAC&R COMMUNITY

U-3ARC can facilitate dialogue and knowledge transfer — while national authorities retain responsibility for regulation and certification.

8- RECOMMENDATIONS: A COORDINATED STRATEGY FOR AFRICA

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MAP	Document existing national certification, licensing and TVET systems.
ALIGN	Develop a common African RAC competency reference.
BUILD	Invest in assessors, practical centers and train-the-trainer programs.
DIGITISE	Create verifiable digital credentials and technician registries.
RECOGNISE	Pilot mutual recognition between willing countries and regional blocs.

CONCLUSION

The objective should not be uniformity — it should be TRUSTED COMPETENCE.

SAFETY	QUALITY	MOBILITY
Competent handling of new technologies	Better installation and maintenance	Skills that can be recognised across borders

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THANK YOU

BASILE SEBURIKOKO

SECRETARY FOR COMMUNICATION & EXTERNAL RELATIONS, U-3ARC
TECHNICAL DIRECTOR, ACES RWANDA
PRESIDENT, RSHVACR (RWANDA)

Kigali, Rwanda - 5 November 2026

MOPIA

MANITOBA



LEADERS IN CLIMATE PROTECTION

Certification and Training Across Continents: Progress and Future Scenarios on the 10th Anniversary of the Kigali Amendment

MANITOBA OZONE PROTECTION INDUSTRY ASSOCIATION

MOPIA.CA

THE SKY'S OUR LIMIT!

LEADERS IN CLIMATE PROTECTION

Montreal Protocol











MOPIA has participated at MOPs with side events, booths & on the HTOC since 1994.

Manitoba (Canada) Pop:1.2 million /(40 m Canada) Larger than France / 100,000 lakes / Polar Bears



Over 36 Years of Progress

- **1990 Manitoba ODS Act**
  - Enabling legislation to meet commitments under Montreal Protocol
- **1992 Manitoba ODS Regulation enacted**
- **1994 New ODS Regulation (MR 103/94)**
  - Manitoba a national leader in stratospheric ozone layer protection
  - MOPIA appointed to provide atmospheric protection information and technical service resources
  - MOPIA retains fees to administer and manage Manitoba's program
- **1995 Amending ODS Regulation (M.R. 128/95)**
- **1999 Manitoba ODS Act amended**
  - Enabling legislation to allow for the regulation of "replacement products" [i.e. HFCs (GHGs)]
- **2005 Amendments to the ODS Regulation (M.R. 178/05)**
  - Amendments consistent with Canada's NAP to phase-out CFCs and halons
  - Regulation name change to "Ozone Depleting Substances and Other Halocarbons Regulation"
- **2027? Amendments – MB / FHR ODS Regulation / Montreal Protocol**

  - under consideration based on stakeholder recommendations, EC, MP

Mandatory Certification Training began in Manitoba back in 1994!

- Environmental Awareness
- Ozone and Climate Change
- On-line, correspondence self-study and in-classroom
- 19,000 people trained & certified to date
- Regulatory Awareness
- Proper recovery and record keeping



CLOSING THE LOOP:
ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF-LIFE ODS AND HF











Training Sessions held across Manitoba at workplaces, colleges and schools. Online & by correspondence.

CLOSING THE LOOP:
ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF-LIFE ODS AND HFC





CLOSING THE LOOP:
ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF-LIFE ODS AND HFC





CLOSING THE LOOP: ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF-LIFE ODS AND HFC



MOPIA is working with remote Indigenous communities to recover refrigerant from abandoned and non working appliances and cars

CLOSING THE LOOP: ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF-LIFE ODS AND HFC



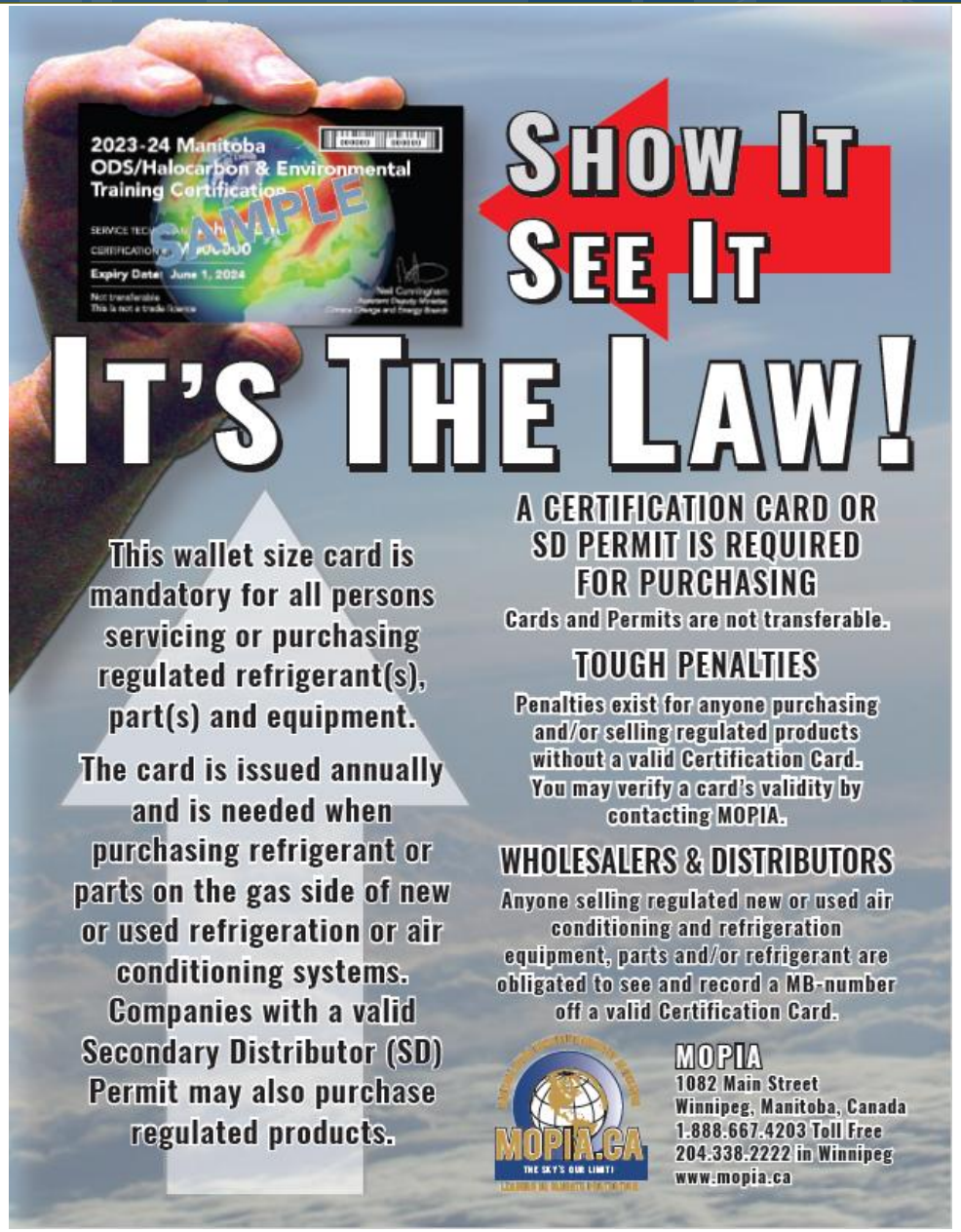






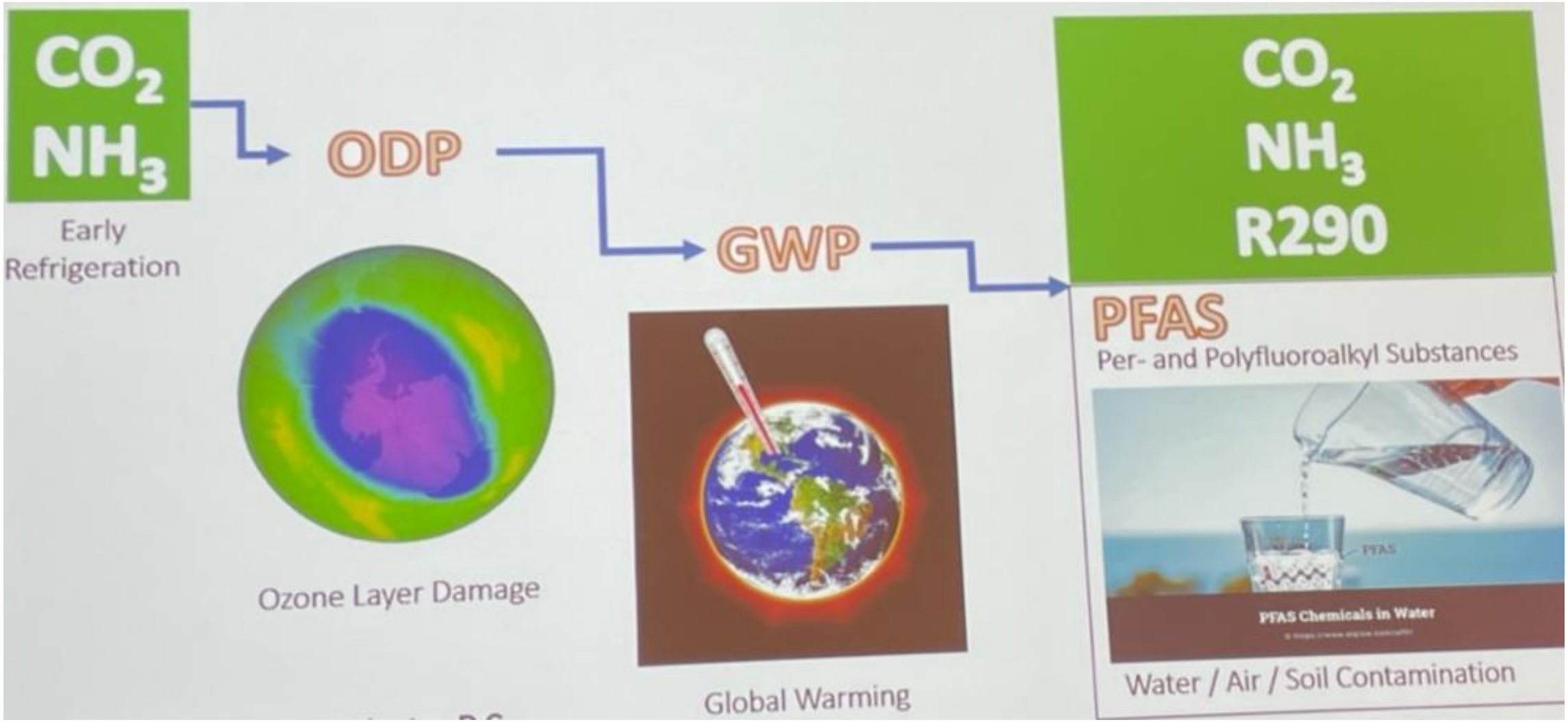
Personal/Individual certification cards are issues to each person each year.

CLOSING THE LOOP: ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF-LIFE ODS AND HFC





CLOSING THE LOOP: ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF-LIFE ODS AND HFC



Real Alternatives Refrigerants Training

- MOPIA has an emerging partnership with Centro Studi Galileo, Milan, Italy and UK Institute of Refrigeration
- Hydrocarbons, carbon dioxide, ammonia and others.

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CLOSING THE LOOP: ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF-LIFE ODS AND HFC



real alternatives europe **Real alternatives**
Blended learning for alternative refrigerants

About us | News | Get training | Educational material | Login | en

Get training

If you would like to take a REAL Alternatives Assessment and gain a Certificate please contact one of the following **Official Training Providers** to find out more about the courses.

Training Providers from around the world register to become "**Official Training Providers**" of the REAL Alternatives programme – once registered they can run courses in alternatives refrigerants based on the materials (including gaining teacher access rights to the elearning), conduct assessments and issue certificates to those who successfully pass the assessment. If you are a training provider and wish to join our database, contact the **National Lead** organisation.

Armenia	Educational Fund of Shirakatsy Lyceum, shirakatsy.am/en/
Belgium	UC Leuven-Limburg www.ucll.be
Canada	MOPIA – Manitoba Ozone Protection Industry Association, www.mopia.ca

Penalties for non compliance!

Enforcement: Environment Canada & Manitoba Environment Environment Officers

Persons:

- **1st Offence – up to $50k/38k USD and/or up to 6 months imprisonment**
- 2nd Offence – up to $100k/70k USD and/or up to 1 yr imprisonment
- **Up to $1k per day**
- **Pay restitution and/or compensation etc….**

Thank you for joining us today!

Contact information:

www.mopia.ca
Email: mm@mopia.ca
Mark Miller, Executive Director





Certification and Training Australia

Presented by: Kylie Farrelley

November 2026

MOP 38 Kigali





Certification and Training

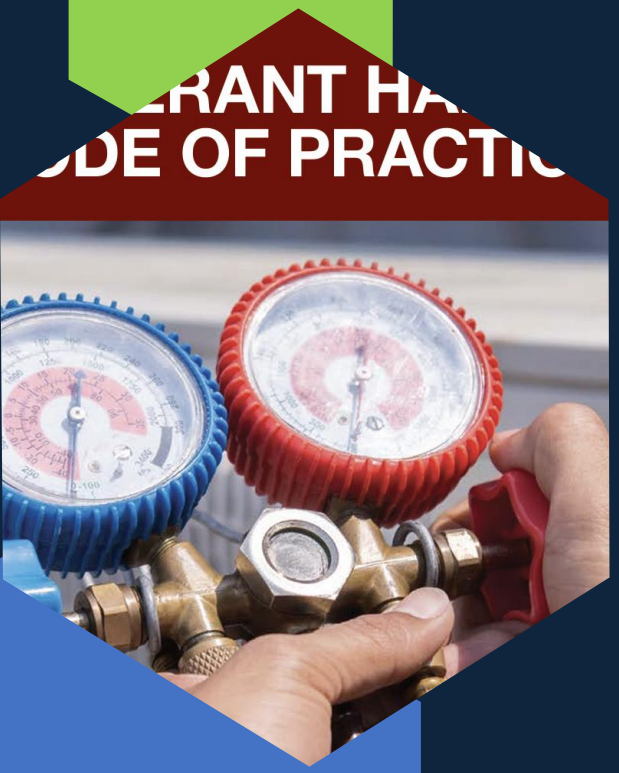
Certification and Training is an important element in Australia's refrigerant management framework which consists of

- Import Licensing - administered by Government
- Permit system – administered by Industry based Australia Refrigeration Council
- Product Stewardship Scheme - RRA



Permit Scheme

- The permit scheme licenses business and technicians
- Provides a mechanism to limit emissions and support refrigerant recovery
- Trilogy that underpins the permit scheme
  - Qualifications
  - License (Permit)
  - Codes of Practice



The Trilogy

Qualifications / License / Codes of Practice

- Qualifications based on National training framework ensure skilled workforce
- License requires right equipment and behavior
- Codes of Practice provides best practice guidelines



Permits

- Permits are only granted to suitably qualified people
- The sale of refrigerant is limited to permit holders (businesses and technicians)
- Permit holders must have equipment that support refrigerant recovery
    - Recovery cylinders
    - Scales
    - Leak detectors
    - Recovery units
    - Vacuum pumps
- Must keep records refrigerant purchases and recovery



Benefits of the Permit Scheme

- Skilled workforce
- Higher quality installs & suitably sized equipment
- Lower leakage rates
- Improved energy efficiency – reduced energy consumption
- Better informed Industry
- Smoother transition to Low GWPs
- Improved national environmental performance
- Improved national economic outcome

Certification and Training Across Continents: Progress And Future Scenarios on the 10th Anniversary Of The Kigali Amendment

Q&A and Open Discussion

Closing Remarks

Certification and Training Across Continents: Progress And Future Scenarios on the 10th Anniversary Of The Kigali Amendment



Thank you very much fo your attention!

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