[Side Event at OEWG48]

Preparing the Servicing Sector for HFC Alternatives to Support Kigali Implementation

Co-organisers: Natural Resources Defense Council (NRDC) and Climate and Clean Air Coalition (CCAC)

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Date & time: Wednesday, 15 July 2026, 18:00 - 20:00 local time

Venue: MR-A, United Nations Conference Centre (UNCC), ESCAP, United Nations Building, Rajadamnern Nok Avenue, Bangkok, Thailand

About the event**:** The transition to low-GWP refrigerants under the Kigali Amendment is increasing the use of refrigerants that may be flammable and/or toxic, making workforce readiness a critical component of successful implementation. However, technician training and certification systems remain fragmented and insufficient in many A5 Parties, particularly with respect to the safe handling of HFC alternatives. This side event will showcase experiences and best practices from both A5 and non-A5 Parties in developing and implementing service technician training and certification programmes. It will highlight effective approaches for building a skilled and certified servicing workforce capable of safely handling HFC alternatives, including flammable refrigerants. The discussion will focus on key lessons, enabling policies, institutional arrangements, and capacity-building models that can help Parties strengthen servicing-sector readiness and support Kigali Amendment implementation. Servicing-sector strengthening and capacity building are increasingly aligned with broader discussions under the Montreal Protocol on life-cycle refrigerant management, energy efficiency, and regional centres of excellence. Insights on technician training, certification, and licensing will be particularly valuable for A5 Parties seeking to build stronger servicing ecosystems and scale certified servicing programmes to support the transition.

Objectives:

- Share country experiences and best practices in technician training and certification for HFC alternatives
- Identify opportunities to strengthen servicing ecosystems in A5 Parties through certification, capacity building, and regional approaches

Agenda:

18:00 - 18:30	Networking over refreshments
18:30 - 18:35	Welcome and opening remarks by Ms. Denise San Valentin, CCAC
18:35 - 18:40	Context setting by Mr. Akash Goenka, NRDC India
18:40 - 19:40	Roundtable discussion moderated by Mr. Natarajan Rajendran, Co-Chair, Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee and Life-Cycle Refrigerant Management Task Force
19:40 – 20:00	Q&A and audience discussion

Roundtable discussants

1. Ms. Miruza Mohamed, Deputy Director General & National Ozone Officer, Maldives
2. Mr. Marco Buoni, Past President (International Affairs), European Association of Refrigeration, Air Conditioning and Heat Pump Contractors (AREA)
3. Mr. Pipat Poopeerasupong, Regional Coordinator, United Nations Environment Programme (UNEP), Thailand
4. Mr. Bassam Elassaad, Senior Expert Member, Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee (RTOC) and Life-Cycle Refrigerant Management (LRM) Task Force
5. Mr. Roberto Peixoto, Co-Chair, Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee (RTOC); former Co-Chair, Life Cycle Refrigerant Management (LRM) Task Force
6. Ms. Mairin Herm, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
7. Ms. Miki Yamanaka, Senior Manager, CSR & Global Environment Center, Daikin, Japan
8. Mr. Marco Durán Herrera, Head of Policy and Global Partnerships, International Institute of Refrigeration (IIR)
9. Mr. Stephen Andersen, Director of Research, Institute for Governance & Sustainable Development (IGSD)
10. Ms. Clare Suzanne Perry, Climate Campaign Leader, Environmental Investigation Agency (EIA), United Kingdom
11. Ms. Bettina Schreck, Independent Expert, Member, Medical and Chemical Technical Options Committee (MCTOC)
12. Ms. Kylie Farrelley, General Manager, Refrigerant Reclaim Australia

Key highlights from the roundtable discussion

Preparing the servicing workforce

- A skilled and competent servicing workforce is essential for successful implementation of the Kigali Amendment. As countries transition to low-GWP refrigerants, technicians will play a central role in the safe installation, servicing, maintenance, refrigerant recovery, and end-of-life management of refrigeration and air-conditioning equipment.
- Technician training alone is not enough. Building a strong servicing workforce also requires qualified trainers, practical training facilities, modern servicing and recovery equipment, competency assessment, and better coordination among government agencies, industry, manufacturers, vocational institutions, and certification bodies.
- Building and maintaining a skilled servicing workforce requires long-term investment rather than one-off training projects. National training and certification systems should be regularly updated to keep pace with new refrigerants, technologies, safety requirements, and servicing practices.
- Practical skills should become the focus of technician training. Hands-on learning, competency-based assessment, and continuous professional development provide a stronger measure of technician capability than completing training courses alone.
- Countries can build on existing training materials, competency frameworks, and successful national experiences rather than developing entirely new systems. Sharing knowledge and adapting proven approaches to national circumstances can accelerate implementation while avoiding duplication.

Certification, licensing, and competency

- Certification should assess what technicians can do at the workbench rather than simply confirming that they have completed a training programme. Practical assessment of refrigerant recovery, leak detection, pressure testing, evacuation, charging, safe handling, and energy-efficient servicing can improve service quality and build confidence in certified technicians.
- Certification should not be a one-time exercise. Regular refresher training and periodic review of training programmes can help technicians keep pace with new refrigerants, technologies, safety requirements, and servicing practices without requiring them to repeat entire qualification programmes.

- Recognition of prior learning provides a practical way to bring experienced informal technicians into formal certification systems. Assessing existing skills and addressing competency gaps can expand the certified workforce while recognising the experience many technicians already have.
- Technician certification should be complemented by accreditation of servicing companies and workshops. Access to appropriate tools, recovery equipment, quality management systems, and safe working practices is essential for technicians to apply their skills effectively in the field.
- Certification systems are more likely to succeed when they create clear benefits for technicians. Better employment opportunities, professional recognition, consumer confidence, and industry demand for certified technicians can encourage greater participation in training and certification programmes.
- Certification and licensing systems should reflect national circumstances. Countries can apply common principles while adapting certification requirements, institutional arrangements, and implementation approaches to local labour markets, regulatory systems, and workforce needs.

Country and regional perspectives

India

- India's rapidly growing cooling sector highlights the need to better connect government programmes, manufacturers, vocational institutions, industry associations, and development partners so that training, certification, and career pathways form part of a coordinated national system.
- Different technicians require different levels of training and certification. Competency pathways should reflect the type of work technicians perform rather than applying the same requirements across the entire servicing workforce.
- Seasonal servicing demand, limited professional recognition, and low consumer awareness continue to affect technician retention, participation in training, and demand for quality servicing.

Japan and Southeast Asia

- Refrigerant recovery depends not only on technician skills but also on practical issues such as recovery time, access to equipment, transporting recovery cylinders, financing, and supporting infrastructure. These factors should be considered when designing recovery and LRM programmes.
- Experiences from Japan, Vietnam, and Malaysia highlighted the importance of developing technician training alongside supporting infrastructure, financing, regulatory frameworks, and market awareness rather than addressing these elements separately.

Maldives

- Technicians often need to travel by boat between islands to attend training or transport recovery cylinders, making participation costly and time-consuming. Decentralised training can bring training closer to technicians.
- Consumer awareness should complement technician training. Many consumers still believe air conditioners need regular gas refilling. Helping consumers understand that refrigerant should only be replaced after leaks have been identified and repaired can strengthen demand for good servicing practices.

Asia-Pacific

- Informal technicians remain a significant part of the servicing workforce across many Article 5 Parties. Recognition of prior learning and competency-based certification provide practical ways to strengthen skills while bringing experienced technicians into formal systems.
- Building effective certification systems requires coordination beyond environment ministries. Skills development, labour, industry, commerce, occupational safety, customs, and business registration authorities all have important roles in supporting workforce development.

Latin America

- Long-term investment in technician training and qualification systems has helped maintain workforce competency through successive refrigerant transitions, demonstrating the value of sustained institutional capacity rather than project-based

interventions.
- Encouraging more women to enter the servicing sector can help address future workforce shortages while improving diversity and strengthening the long-term resilience of the sector.

Europe
- Certification systems can recognise different competency levels for different refrigerants, technologies, and servicing activities, allowing technicians to develop specialised skills while maintaining high safety standards.
- Accrediting or classifying servicing workshops alongside individual technicians can encourage investment in technician training, appropriate tools, and recovery equipment while improving service quality.
- Greater alignment of competency standards can support workforce mobility and knowledge sharing while allowing countries to maintain their own certification systems.

Australia
- Regularly updating training modules and recognising additional competencies allows technicians to develop new skills as technologies evolve without repeating entire licensing programmes.
- Mobile training pods can take training to technicians in remote areas instead of requiring technicians to travel long distances to training centres, reducing costs and improving access to practical training.

Ghana
- Integrating technician training into national qualification, certification, and registration systems helps make workforce development part of long-term skills policy rather than a stand-alone refrigerant transition activity.
- Modular qualification frameworks and recognition of existing practical experience provide flexible pathways for technicians to enter and progress through formal certification systems.

Cross-cutting messages
- Building a skilled servicing workforce requires more than technician training. Effective systems combine practical training, competency assessment, certification, qualified trainers, modern servicing equipment, supportive policies, and coordination across the institutions responsible for skills development and refrigerant management.
- Certification systems are most effective when they reflect national circumstances while maintaining clear competency standards. Countries can learn from each other's experiences, but training, certification, and licensing systems should be adapted to local workforce needs, institutional arrangements, and regulatory frameworks.
- Refrigerant recovery and life-cycle refrigerant management depend on more than technician skills. Recovery equipment, servicing tools, transport, financing, and supporting infrastructure all need to be in place to make recovery systems work in practice.
- Building and maintaining the servicing workforce requires sustained investment. Long-term funding should support trainer development, training facilities, servicing equipment, competency assessment, certification systems, and institutional capacity so that workforce development continues beyond individual projects.
- A well-trained, competent, and recognised servicing workforce will be essential for the successful transition to low-GWP refrigerants. Continued investment in technician skills, certification, and enabling systems will support safer servicing practices, better refrigerant management, improved energy efficiency, and the long-term objectives of the Kigali Amendment.

Roundtable pictures

OWEG48 Side Event on

Preparing the Servicing Sector for HFC Alternatives to Support Kigali Implementation

15 July 2026

Why Servicing Sector Readiness Matters

- **Safety:** Transitioning to HFC alternatives may increase the use of flammable and/or toxic refrigerants, making technician competency important
- **Capacity Gaps:** Many A5 Parties (and non-A5s too!), continue to face gaps in technician training & certification
- **Implementation:** A skilled and certified servicing workforce is essential for the safe and successful implementation of the Kigali Amendment
- **Broader Linkagages:** Strengthening the servicing sector is linked to broader Montreal Protocol priorities, including replenishment, LRM, energy efficiency, and regional CoEs

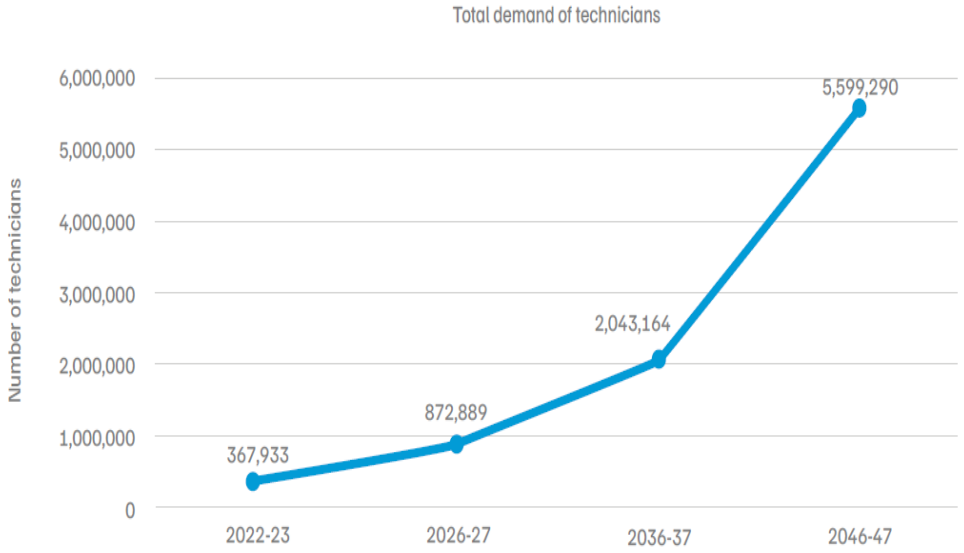
Current Landscape in India

Growing demand

- ~0.3 million technicians today
- ~2 million technicians needed by 2037

Strong foundation

- Multiple training pathways across government, vocational institutions, OEMs, etc.
- Existing programmes provide a strong platform to prepare technicians for next-generation refrigerants.



Source: CEEW. 2025. *Formalising India's AC Technician Training and Certification for Climate-resilient Servicing*.

Potential to Strengthen Technician Readiness

1. **Update training:** Practical, hands-on training for safe refrigerant handling of HFC alternatives, leak detection, recovery, diagnostics, and emerging technologies.

2. **Competency-based certification:** Differentiated certification based on technician skill levels.

3. **Create stronger incentives and recognition:** Better career progression, higher earnings, market recognition, and consumer trust.

4. **Improve ecosystem coordination:** Align governments, OEMs, training providers, and certification bodies to support technician readiness.

THANK YOU