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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-ninth Meeting
Montreal, 7–11 December 2026
Item 9(d) of the provisional agenda[1]

# PROJECT PROPOSAL: SAUDI ARABIA

This document consists of the comments and recommendation of the Secretariat on the following project proposal:

Phase-out

| | | |
|---|---|---|
| • HCFC phase-out management plan (stage II, second tranche) | UNIDO and UNEP | Individual consideration |

[1] UNEP/OzL.Pro/ExCom/99/1

Pre-session documents of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol are without prejudice to any decision that the Executive Committee might take following issuance of the document.

## PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

### Saudi Arabia

| PROJECT TITLE | AGENCY | MEETING APPROVED | CONTROL MEASURE |
|---|---|---|---|
| HCFC phase-out plan (stage II) | UNIDO (lead), UNEP | 94th | 100% phase-out by 2030 |

| ARTICLE 7 DATA (Annex C, Group I) | Year: 2025 | 414.77 ODP tonnes |
|---|---|---|

| COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes) | | | | | | | Year: 2025 |
|---|---|---|---|---|---|---|---|
| Substance | Aerosol | Foam | Firefighting | Refrigeration | | Solvent | Total sector consumption |
| | | | | Manufacturing | Servicing | | |
| HCFC-22 | | | | | 414.77 | | 414.77 |

| CONSUMPTION DATA (ODP tonnes) | | | |
|---|---|---|---|
| 2009–2010 baseline: | 1,468.70 | Starting point for sustained aggregate reductions: | 1,468.69 |
| **CONSUMPTION ELIGIBLE FOR FUNDING** | | | |
| Already approved: | 1,468.69 | Remaining: | 0.00 |

| ENDORSED BUSINESS PLAN | | 2026 | 2027 | 2028 | Total |
|---|---|---|---|---|---|
| UNIDO | ODS phase-out (ODP tonnes) | 165.08 | 0.00 | 115.39 | 280.47 |
| | Funding (US $) | 3,843,800 | 0 | 2,686,766 | 6,530,566 |
| UNEP | ODS phase-out (ODP tonnes) | 84.48 | 0.00 | 46.62 | 131.10 |
| | Funding (US $) | 2,044,327 | 0 | 1,128,078 | 3,172,405 |

| PROJECT DATA | | | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Consumption (ODP tonnes) | Montreal Protocol limits | | 954.66 | 477.33 | 477.33 | 477.33 | 477.33 | 477.33 | 0.00 | n/a |
| | Maximum allowable | | 881.22 | 477.33 | 477.33 | 400.00 | 400.00 | 400.00 | 0.00 | n/a |
| Amounts approved in principle (US $) | UNIDO | Project costs | 4,357,084 | 0 | 3,592,336 | 0 | 2,510,996 | 0 | 1,076,816 | 11,537,233 |
| | | Support costs | 304,995 | 0 | 251,464 | 0 | 175,770 | 0 | 75,377 | 807,606 |
| | UNEP | Project costs | 1,613,265 | 0 | 1,838,501 | 0 | 1,014,501 | 0 | 652,589 | 5,118,855 |
| | | Support costs | 180,611 | 0 | 205,826 | 0 | 113,577 | 0 | 73,060 | 573,074 |
| Funds approved by ExCom (US $) | | Project costs | 5,970,349 | | | | | | | 5,970,349 |
| | | Support costs | 485,606 | | | | | | | 485,606 |
| Total funds recommended for approval at this meeting (US $) | | Project costs | | | 5,430,837 | | | | | 5,430,837 |
| | | Support costs | | | 457,290 | | | | | 457,290 |

| Secretariat's recommendation: | Individual consideration |
|---|---|

## PROJECT DESCRIPTION

1. On behalf of the Government of Saudi Arabia, UNIDO as the lead implementing agency has submitted a request for funding for the second tranche of stage II of the HCFC phase-out management plan (HPMP), at a total cost of US $5,888,127, consisting of US $3,592,336, plus agency support costs of US $251,464, for UNIDO and US $1,838,501, plus agency support costs of US $205,826, for UNEP.[2] The submission includes a progress report on the implementation of the first tranche, the verification report on HCFC consumption for 2020 to 2025, and the tranche implementation plan for January 2027 to December 2028. The verification report on HCFC consumption for 2016 to 2019 submitted by UNEP in May 2024 was also reviewed as part of the submission.[3]

Report on HCFC consumption

2. The Government of Saudi Arabia reported a consumption of 414.77 ODP tonnes of HCFCs in 2025, which is 72 per cent below the country's HCFC baseline for compliance. The 2020–2025 HCFC consumption is shown in table 1.

**Table 1. HCFC consumption in 2020–2025 in Saudi Arabia (Article 7 data)**

| HCFC-22 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Baseline* |
|---|---|---|---|---|---|---|---|
| Metric tonnes (mt) | 16,009.09 | 15,998.01 | 15,927.28 | 12,683.61 | 10,155.26 | 7,541.33 | 18,393.50 |
| ODP tonnes | 880.50 | 879.89 | 876.00 | 697.60 | 558.54 | 414.77 | 1,011.64 |

* The country's baseline for compliance of 1,468.7 ODP tonnes also includes 0.19 ODP tonnes of HCFC-123, 341.00 ODP tonnes of HCFC-141b, and 115.86 ODP tonnes of HCFC-142b. Those substances were last consumed in 2016, 2017 and 2013, respectively.

3. Since 2020, HCFC-22 has been the only HCFC consumed in Saudi Arabia. During the period under review, HCFC-22 was consumed in the servicing sector and, until 2025, in the manufacture of residential and commercial air-conditioning (AC) equipment. HCFC consumption remained stable at approximately 880 ODP tonnes from 2020 to 2022, before declining to 414.77 ODP tonnes in 2025 as HCFC-22 import quotas were progressively reduced. Consumption in AC manufacturing decreased from 5,569.62 metric tonnes (mt) in 2020 to zero in 2025 as manufacturers shifted to producing non-HCFC-based equipment in advance of the ban on the manufacture of HCFC-based RAC equipment which entered into force on 1 January 2025.[4] Servicing consumption remained at approximately 10,400–10,650 mt from 2020 to 2023, reflecting continued servicing demand for older HCFC-22-based equipment and the limited use of recovery and recycling equipment. As HCFC-22-based equipment has been gradually replaced, servicing consumption has decreased from 10,401.79 mt in 2023 to 7,541.33 mt in 2025. Technician training and certification under stage I also contributed to the decline by improving servicing practices.

*Country programme implementation report*

4. The HCFC consumption data provided by the Government of Saudi Arabia in its CP implementation report for 2025 is consistent with the data reported under Article 7 of the Montreal Protocol.

[2] As per the letter of 18 September 2026 from the National Center for Environmental Compliance of Saudi Arabia to UNIDO.

[3] At the 94th meeting, the Secretariat indicated that it would review the verification report on HCFC consumption for 2016–2019 as part of its review of the request for the second tranche of stage II of the HPMP for Saudi Arabia (paragraph 21 of document UNEP/OzL.Pro/ExCom/94/51).

[4] At the 94th meeting, UNIDO indicated that the two enterprises that implemented demonstration projects in air-conditioning manufacturing were manufacturing equipment based on high-GWP HFCs (UNEP/OzL.Pro/ExCom/94/51).

*Verification report*

5. The verification reports confirmed that the Government was implementing a licensing and quota system for HCFC imports and exports and that the total consumption of HCFCs reported under Article 7 of the Montreal Protocol for 2016 to 2025 was correct (as shown in table 1 above for 2020 to 2025). The verifications concluded that Saudi Arabia's HCFC consumption was below the Montreal Protocol limits throughout the period and below the maximum allowable consumption established in its Agreements with the Executive Committee. The verifications included several recommendations which are discussed along with the Secretariat's comments in paragraphs 17 to 19 below.

Progress report on the implementation of the first tranche of stage II of the HCFC phase-out management plan

*Legal framework*

6. Saudi Arabia has an operational licensing and quota system for HCFC imports and exports under the Executive Regulation for Ozone-Depleting Substances and Hydrofluorocarbons, issued under the Environment Law on 25 June 2021.[5] The National Center for Environmental Compliance (NCEC) issues import licences and allocates quotas through its e-licensing system, which was updated under the first tranche and integrated with NCEC's online permit platform. The system, which covers all controlled substances, including HFCs, provides a centralized platform for permit applications, approvals, tracking, monitoring and reporting; staff of the National Ozone Unit (NOU) were trained on the system, and a user guide and tutorial video were developed.

7. The ban on the manufacture of HCFC-based refrigeration and air-conditioning (RAC) equipment entered into force on 1 January 2025. The NCEC and the Saudi Standards, Metrology and Quality Organization (SASO) enforce the ban on imports of HCFC-based equipment and products through SASO certificates of conformity, which identify the refrigerant used in imported RAC equipment.[6]

8. Under the first tranche, an analytical study was undertaken with UNEP OzonAction to assess the existing regulatory and institutional framework for ODS, identify implementation gaps and recommend measures to strengthen the national regulatory framework in support of the sustainable phase-out of HCFCs. A consultation on proposed updates to ozone protection policies and regulations, held in Riyadh in May 2026, was attended by more than 20 representatives from ministries and national authorities.

9. Following the transfer of responsibility for licensing RAC servicing workshops from the Ministry of Municipalities and Housing to NCEC in early 2025, NCEC updated its licensing and permitting system to include small RAC workshops, to ensure their compliance and facilitate the training and certification of their technicians, and, with the NOU, adapted its online permit platform to enable workshop registration and monitoring. Enforcement of certification and licensing requirements for RAC technicians is being strengthened through the Professional Accreditation Guide for Engineering Categories issued by the Saudi Council of Engineers (SCE). A proposed national framework for the training, certification and professional licensing of RAC technicians, developed with UNEP, was reviewed at a national consultation in May 2026 with the Technical and Vocational Training Corporation (TVTC), the Ministry of Human Resources and

[5] Published in the official gazette Umm al-Qura on 15/11/1442 H (25 June 2021); issued under the Environment Law promulgated by Royal Decree No. M/165 of 19/11/1441 H.

[6] As confirmed by e-mail of 30 September 2026, the mechanism was established through a SASO circular dated 1 May 2019 requiring certificates of conformity for AC and refrigeration equipment to identify the refrigerant used. SASO Circular 247 added the NCEC list of permitted and prohibited refrigerants. HCFC-22 and other HCFCs are on the list of prohibited refrigerants. According to the NOU, the circular applies to all appliances, equipment, products and substances.

Social Development, the SCE and the College of Excellence. The NOU provided the SCE with criteria for updating its assessment and certification system in line with the Montreal Protocol and its Kigali Amendment.

10. The study on reclamation policy and standards, completed under the first tranche, assessed the life-cycle management of HCFC refrigerants in Saudi Arabia and proposed technical standards and two regulatory annexes covering recovery, recycling, reclamation, quality control of reclaimed refrigerant and the management of recovered refrigerant classified as waste. One annex would fall under the Executive Regulation for Ozone-Depleting Substances and Hydrofluorocarbons, within NCEC's mandate, and the other under the Executive Regulation of the Waste Management Law, within the mandate of the National Center for Waste Management (MWAN). The study also sets out a road map for the review, consultation and formal approval of the proposed standards and annexes.

*Customs and enforcement training*

11. Two workshops on the Montreal Protocol and the Kigali Amendment, HCFC controls, risk-profiling and inspection were held in Jeddah in October 2025 for five customs trainers and nine customs officers, and in Khobar in June 2026 for eight customs officers. Three workshops held in Riyadh, Jeddah and the Eastern Region in 2025 and 2026 trained 61 NCEC enforcement officers, including 11 women, in inspection practices and the prevention of illegal trade in ODS and HFCs. An online session held in July 2026 trained 216 customs agents and importers in the use of the NCEC e-licensing system to submit environmental clearance applications. A contract for nine refrigerant identifiers was signed in June 2026.

*Refrigeration servicing sector*

12. The following activities were implemented in the refrigeration servicing sector under the first tranche:

(a) *Development of standards:* The review of IEC 60335-2-40 was completed, and ISO 5149 has been adopted by SASO and is being published. Standard Operating Procedures (SOPs) for servicing RAC equipment using flammable and hazardous refrigerants were developed;

(b) *Technician training and certification*: Two workshops on good servicing practices and the safe handling of flammable refrigerants were held in Riyadh in May 2025 for 14 trainers and in Jeddah in October 2025 for 23 master trainers. Under an agreement between NCEC and the College of Excellence, workshops held at TVTC training centres in Riyadh, Jeddah and Dammam had trained 1,030 RAC technicians by 8 September 2026, all of whom were certified by NCEC. The NOU, in coordination with the training centres, developed an online registration system for the training programme to record technician information and verify attendance and results. A workshop on the use of low-GWP alternatives was held for 15 participants (including two women);

(c) *Provision of tools and equipment:* A contract for the supply of tools and equipment for certified technicians was issued in September 2026. Tools and equipment for 1,800 servicing workshops were procured and have cleared customs, and distribution arrangements are being finalized. Technical specifications for training equipment for vocational training and assessment institutions were prepared and cleared by the NOU;

(d) *Recovery, recycling and reclamation (RRR):* Draft guidelines for reclamation facilities were prepared with MWAN and NCEC, covering recovery, identification, recycling, reclamation, transport, storage, chain of custody and quality control. A second reclamation centre was established by Environmental Industrial Solutions (EIS) in Riyadh in August 2026.[7]

[7] The first RRR centre was established in Dammam under stage I of the HPMP.

Procurement of the centre's equipment and of service kits, including recovery units and cylinders, for 40 servicing workshops was completed, with delivery pending. Two workshops held in Jeddah on 8–9 October 2025 trained 23 environmental inspectors and 21 RAC technicians (44 participants, including six women) on refrigerant recovery, recycling and reclamation and good servicing practices; and

(e) *Awareness-raising*: Awareness activities included 15 public information materials, media outreach and digital content on ozone protection, climate change mitigation and sustainable cooling. Materials for a World Refrigeration Day campaign were also developed.

*Project implementation and monitoring*

13. The NOU and implementing agencies have been monitoring activities, reporting on progress, and working with stakeholders to phase out HCFCs. UNIDO has provided financial and technical oversight, including procurement support, implementation monitoring and reporting, while UNEP has coordinated implementation of its policy, training, customs capacity-building, and awareness components in close cooperation with the NOU. A national consultant was recruited to support day-to-day coordination and implementation of project activities on the ground, working closely with the NOU, UNIDO, UNEP and relevant national stakeholders to facilitate implementation, follow up on procurement and technical activities, support coordination with beneficiary institutions and counterparts, and monitor progress against the approved work plan.

14. Of the US $121,016 approved for UNIDO, and the US $ 40,339 approved for UNEP for project implementation and monitoring activities under the first tranche, UNIDO disbursed its full allocation for consultants (US $94,206), the verification of HCFC consumption (US $20,800), travel (US $5,274) and other expenses (US $736), and UNEP disbursed US $16,899 of its allocation for consultants (US $13,174) and travel (US $3,725).

Level of fund disbursement

15. As of September 2026, of the US $5,970,349 approved so far (US $4,357,084 for UNIDO and US $1,613,265 for UNEP), US $2,382,037 (39.9 per cent) had been disbursed (US $1,402,495 for UNIDO and US $979,542 for UNEP). The balance of US $3,588,312 is expected to be fully disbursed by December 2028.

Implementation plan for the second tranche of stage II of the HCFC phase-out management plan

16. The following activities will be implemented between January 2027 and December 2028:[8]

(a) *Policy and enforcement:* Review five existing policies and regulations (the executive regulations on ODS and HFCs, waste management and chemical substances management, the HFC quota allocation system and technician licensing guidelines) and identify potential new policies to support and sustain the HCFC phase-out, including regulations for the servicing tail and bans; hold one stakeholder consultation workshop on the assessment and development of these policies and regulations; complete the upgrade of the e-licensing system; complete the development and implementation of qualification requirements for RAC servicing technicians; and complete the development and implementation of the e-registration system for servicing workshops (UNEP) (US $184,412, plus funds from the previous tranche);

[8] Annex I of document UNEP/OzL.Pro/ExCom/94/51 details the types of tools and equipment to be provided to training institutions, servicing workshops, certified technicians and the reclamation centre.

(b) *Customs capacity-building:* Conduct one workshop to train five trainers for the customs department, and four workshops to train 35 customs officers on HCFC control, including risk profiling; conduct one border dialogue with neighbouring countries on combating illegal ODS trade; conduct three workshops to train 60 enforcement officers on ODS regulations to support enforcement beyond customs checkpoints; conduct one workshop to train 50 customs agents and importers of HCFCs, refrigerants and RAC equipment on new regulatory measures; and technical assistance to strengthen risk profiling for the control of HCFC imports and exports (UNEP) (US $141,750, plus funds from the previous tranche); and procure and deliver nine flammable refrigerant identifiers and gas chromatography-mass spectrometry (GC-MS) instruments to be received and operated in SASO laboratories at the port of entry (UNIDO) (US $49,500, plus funds from the previous tranche);

(c) *Development of standards:* Finalize the SOPs for servicing workshops for handling flammable and hazardous refrigerants, including guidance on their implementation (UNEP) (US $10,000, plus funds from the previous tranche);

*(d) Capacity-building of technicians:*

(i) Training of trainers: Conduct five workshops to train 25 master trainers, accounting for geographical distribution; conduct eight workshops to train 96 teachers on the good servicing practices training curriculum; and one workshop for owners of HCFC-123-based chillers to follow up on replacement plans and update the inventory of chillers in operation (UNEP) (US $210,000, plus funds from the previous tranche);

(ii) Training and certification of technicians: Train 1,960 technicians on good servicing practices in collaboration with local institutes; and certify 1,950 already qualified RAC technicians through a recognition of prior learning (RPL) campaign (at a cost of US $100 per candidate for a one-day assessment); conduct two awareness-raising sessions for the establishment of a RAC association, encouraging women's participation (UNEP) (US $1,102,000, plus funds from the previous tranche); and provide tools and equipment to 1,950 certified technicians (UNIDO) (US $521,820, plus funds from the previous tranche);

(iii) Equipment and tools: Provide training equipment to 20 training schools and qualification assessment institutes and to the remaining six vocational training institutions in major cities; and tools and equipment for 1,800 servicing workshops (UNIDO) (US $2,700,000, plus funds from the previous tranche);

(e) *RRR activities:* Establish a third RRR centre,[9] including reclamation and laboratory equipment, consumables, transportation, installation and training; and provide RRR tools and equipment to 20 servicing workshops to strengthen the collection network of the two existing reclamation centres (UNIDO) (US $200,000, plus funds from the previous tranche); and two awareness workshops for RAC technicians on recovery and recycling; and the development of certification procedures for reclamation centres and the RAC servicing workshop network (UNEP) (US $50,000);

(f) *Awareness-raising activities:* Continue the campaign on the HCFC phase-out and low-GWP alternatives through printed materials and mass media in the local language; organize four events to promote ozone- and climate-friendly technologies (two Ozone2Climate roadshows

[9] US $150,000 of second tranche funding will be used to establish a third RRR centre, with the location to be determined.

and roundtables and two World Refrigeration Day celebrations); and hold an awareness workshop on the launch of the RPL programme (UNEP) (US $100,000); and

(g) *Project implementation and monitoring:* Continue the work of the project management unit (PMU), including consultants, travel, consumption verification, meetings, workshops and operating expenses (UNIDO) (US $121,016); and support for the PMU (UNEP) (US $40,339, plus funds from previous tranche).

## SECRETARIAT'S COMMENTS AND RECOMMENDATION

### COMMENTS

Report on HCFC consumption and verification

17. The 2016–2019 verification was conducted remotely and relied solely on data provided by the NOU. The verifier identified discrepancies between the annual import totals and the detailed shipment records for four importers during 2016–2018. In response to the Secretariat's query, UNIDO explained that the discrepancies concerned company-level records and did not affect the national HCFC consumption reported under Article 7, which the verification confirmed. UNIDO also clarified that the HCFC-141b import figures presented in the report for 2016 and 2017 covered only the importers listed and were therefore lower than the national totals reported for those years. The 2020–2025 verification was conducted remotely. In response to the Secretariat's query on whether the NOU data had been cross-checked against customs data and importers' records, UNIDO indicated that the verifier had reviewed official import and export statistics, compared quotas issued with actual imports and examined a sample of importers' records.

18. The 2016–2019 verification report made 17 recommendations, six of which were reiterated in the 2020–2025 report. UNIDO reported that 14 of the 17 recommendations had been implemented. The NOU reviews quota allocations annually, and the electronic licensing system prevents importers from entering quantities above their allocated quotas. Other measures included inspections of HCFC container labels at ports of entry, training of customs officers and RAC technicians, and regular calibration of testing equipment. UNIDO also reported that procedures were in place to manage records, obtain feedback from importers and address their complaints.

19. The three outstanding recommendations were all reiterated in the 2020–2025 report. They concerned the reporting of HCFC-related incidents during transport, storage and operation, the assessment of HCFC hazards and risks, and the recording of nonconformities, their causes and the corrective action taken. UNIDO indicated that work on these recommendations was ongoing and that they would be addressed under stage II of the HPMP, with completion expected in 2027.

Progress report on the implementation of the first tranche of stage II of the HCFC phase-out management plan

*Legal framework*

20. The Government of Saudi Arabia has issued HCFC import quotas for 2026 and 2027 at 408.87 and 367.98 ODP tonnes, respectively, which are lower than the Montreal Protocol control targets and the maximum allowable consumption under the Agreement.

21. In response to the Secretariat enquiry about the exemption of supplied equipment from import taxes, UNIDO confirmed that the equipment for 1,800 servicing workshops, which cleared customs under a release certificate issued by the Ministry of Foreign Affairs, was exempted from taxes, in line with decision 94/31(c)(ii).

22. UNIDO also clarified that the border dialogue with neighbouring countries has yet to take place owing to the situation in the region, and that delivery of the nine refrigerant identifiers is tentatively expected before the end of December 2026, subject to regional shipping conditions.

23. Regarding the supply of GC-MS instruments approved under the first tranche, UNIDO clarified that the tender was cancelled owing to insufficient transparency in the bidder's pricing, and the associated US $270,000 remains unspent. UNIDO will launch a new tender with updated specifications. UNIDO reported that SASO had confirmed that the instruments would be received and operated in its laboratories at the port of entry to verify imported refrigerants and support customs enforcement, as originally intended. The funds will therefore be used under the second tranche for their original purpose.

*Refrigeration servicing sector*

24. The Secretariat requested an update on meeting the training and certification targets included in the first tranche. UNIDO confirmed that 23 master trainers were trained in one workshop, against five workshops of five participants each planned, and 14 teachers in one of eight planned workshops. By September 2026, 1,030 technicians had been trained and certified, compared with first tranche targets of at least 2,000 technicians trained and 1,500 certified. UNIDO clarified that technicians targeted under the HPMP already hold SCE professional accreditation, while NCEC certification covers good servicing practices and safe refrigerant handling. Arrangements to integrate NCEC certification into the SCE accreditation requirements are expected to be finalized by the first quarter of 2027, after which the workshop on establishing an RAC association will be held. The legal or administrative instrument through which the requirement will be introduced, and its effective date has yet to be specified.

25. As planned under the first tranche, toolkits for 1,500 certified technicians and 40 service kits to strengthen the recovery and collection network (out of 80 planned for stage II) were procured. The cost of the service kits exceeded the budget owing to higher prices for tools, delivery and insurance resulting from the situation in the region. Regional shipping disruptions have delayed delivery, with the technician toolkits tentatively expected before the end of December 2026 and the service kits in 2027. UNIDO and the NOU will monitor procurement and shipping schedules, and the agencies will assess alternative delivery arrangements. If delays affect training or distribution, the agencies will consider adjusting the sequencing of activities and proceeding with preparatory work, stakeholder coordination and other activities that can be implemented without the equipment. UNIDO and the NOU decided to postpone bidding for equipment for training and assessment institutions until the second tranche is received.

*Recovery, recycling and reclamation*

26. One of the conditions for submission of the third tranche of stage II of the HPMP is the reclamation of at least 20 mt of controlled substances, in accordance with decision 94/31(d)(iii). The Secretariat therefore sought clarification on the quantities reclaimed at the first reclamation centre. UNIDO indicated that the HCFC-22 quantities reported as recovered represented both recovered and reclaimed HCFC-22, tested to the AHRI-700 standard. UNIDO also indicated that the centre recovers, recycles and reclaims HCFC-22 and HFC-134a; that it can reclaim CFCs, HCFCs and HFCs, including R-400 series blends, and halons, but not blends containing dimethyl ether; and that no recovered or reclaimed refrigerant is imported from or exported to neighbouring countries.

27. The quantities of recycled and recovered refrigerants were not supported by detailed reporting about exact quantities and required additional review. For HCFC-22, 39.15 mt was reported to be recovered between 2019–2025, and 131.71 mt was reported to have been recycled between 2018–2026 (cumulative). For HFC-134a, 14.22 mt was reported as recovered between over the same reporting period, and 15.72 mt reported to have been recycled. The exact amount of reclaimed refrigerant, out of the recovered or recycled, was not reported. The Secretariat proposed that UNIDO provide detailed reporting about annual quantities

recovered, recycled and reclaimed by the centre when requesting the third tranche, including quantities from the second centre once operational.

28. The second centre will become operational once the equipment has been delivered, installed and commissioned and staff have been trained; delivery depends on the supplier and the security situation in the region. During the second tranche, the two regulatory annexes proposed in the study will undergo technical and legal review and public consultation, while the draft technical guideline on the management of recovered refrigerants will undergo institutional review and stakeholder consultation, with formal adoption to be pursued.

*Alternative technologies*

29. AC manufacturers completed the transition to non-HCFC-based equipment by 2025. At the 94th meeting, UNIDO reported that the two enterprises that had implemented low-GWP demonstration projects approved by the Executive Committee were manufacturing equipment using high-GWP HFCs, and the Secretariat noted that the industry planned to convert to R-410A and R-407C. UNIDO also reported that new chillers use low-GWP alternatives. The first tranche market study used HFC Outlook[10] to assess future refrigerant demand and technology options, but the extent of uptake of low-GWP alternatives in the servicing sector was not quantified. The ongoing work will contribute to better assess alternatives to HCFCs and HFCs in support of the ongoing stage of HPMP and preparation of KIP.

Implementation plan for the second tranche of stage II of the HCFC phase-out management plan

30. In response to the Secretariat's enquiry about the planned review of the Executive Regulation on ODS and HFCs, UNIDO clarified that it will address refrigerant life-cycle management, including for the post-2030 servicing tail, in line with the regulatory and policy framework for 2030–2040 that the Government is required to submit with the request for the final tranche, in accordance with decision 94/31(g).

31. The Secretariat sought clarification about the planned technician certification targets; UNIDO clarified that the RPL campaign will assess 1,950 already-qualified technicians. The 1,960 technicians to be trained under the second tranche will be qualified to undergo assessment, but the arrangements and budget for their certification have not been specified. UNIDO confirmed that each of the 1,950 certified technicians will receive a complete toolkit at an estimated cost of US $267.60, the same unit cost as the 1,500 toolkits procured under the first tranche within the budget of US $401,400. Any remaining first tranche balance will be confirmed following financial reconciliation. No contributions from other sources are envisaged; if a funding shortfall arises, UNIDO will consult the NOU and the Secretariat. UNIDO reported no overlap to date among the beneficiaries identified for technician toolkits, equipment for 1,800 servicing workshops and RRR equipment for 20 workshops.

32. With regard to certification of reclaimed refrigerant to the AHRI-700 standard, as agreed during the review of stage II (document UNEP/OzL.Pro/ExCom/94/51), UNIDO indicated that EIS has the necessary testing capacity in Dammam, where the first centre was established under stage I, and that UNIDO would provide testing equipment to the second centre, established at EIS in Riyadh under the first tranche of stage II.

Gender policy implementation

33. In line with decisions 84/92(d) and 90/48(c), UNEP and UNIDO reported encouraging women's participation in project management, monitoring, consultancy, training and consultations under stage II of the HPMP. Under the first tranche, women accounted for 11 of 61 enforcement officers trained, six of 44 participants in RRR workshops, and two of approximately 15 participants in the low-GWP alternatives

[10] HFC Outlook is a modelling platform to assess greenhouse gas (GHG) emissions related to the use of energy and refrigerants in refrigeration, air-conditioning and heat pump equipment and GHG emissions from other applications of HFCs.

workshop. UNIDO attributed women's limited participation in practical RAC training to their low representation in installation and maintenance, noting that all available trainers in this specialization were men. Under the second tranche, the NOU and implementing agencies will encourage participation by qualified women in customs, enforcement and technical training and in awareness sessions on establishing an RAC association. Based on first tranche participation, UNEP proposed an indicative target of at least 10 per cent participation by women in enforcement officer training and stakeholder workshops under the second tranche.

Sustainability of the HCFC phase-out and assessment of risks

34. The bans on the manufacture and import of HCFC-based equipment and the licensing and quota system, operated through NCEC's e-licensing system, support the sustainability of the phase-out in AC manufacturing and limit future demand for HCFC-22, which has been consumed only for servicing since 2025. To address continued servicing demand, the existing regulatory framework requires the recovery of refrigerants and prohibits their release into the atmosphere, and NCEC has communicated the 2030 phase-out commitment to stakeholders. Training of customs and enforcement officers, together with the planned provision of refrigerant identification and testing equipment, will strengthen controls against illegal imports.

35. Training through national vocational institutions and NCEC certification, under which 1,030 technicians have been trained and certified, provide a basis for continuing technician training after completion of stage II of the HPMP. NCEC certification is to be integrated into SCE professional accreditation requirements. To create sustained demand for certification, the agencies identified the enforcement of regulations requiring certification as a prerequisite for practice permits, a green procurement policy requiring that only certified technicians service RAC equipment under government contracts, and e-registration systems for certified technicians and servicing workshops. Collaboration with educational institutions and industry associations is intended to keep the programme self-sustaining and aligned with evolving standards. Long-term financing for training and assessment remains to be established. Under the second tranche, the NOU and the agencies will explore arrangements for gradually increasing contributions from employers, servicing workshops and technicians, and will monitor participation and certification rates.

36. Recovery and reclamation can help meet servicing demand as import quotas decline, but the quantities of refrigerant recovered remain small, the second centre has yet to be commissioned, and the draft regulatory annexes and technical guidelines remain to be adopted. The viability of the centres will also depend on the supply of recovered refrigerant from participating workshops and on financing for collection, testing and operation. Delivery of the equipment for the second centre and of the service kits for the collection network has been delayed by regional shipping disruptions; the agencies will monitor shipments and adjust the sequencing of activities where necessary. The agencies will monitor progress through reported recovery and recycling quantities, equipment distribution records and the operational performance of the reclamation centres.

37. The Secretariat considers the risk of a return to HCFC use in AC manufacturing to be low, given the equipment bans and the cessation of HCFC-22 use in manufacturing in 2025. The principal remaining risks concern the capacity to service existing equipment as quotas decline, delays in adopting the reclamation regulations and commissioning the second centre, and possible delays in supply of equipment and tools owing to shipping disruptions in the region, may affect timely implementation of related activities, which is mitigated through close monitoring of the situation by the NOU and agencies and their readiness with alternate plans. The planned support for technician certification, refrigerant recovery and reclamation, and customs enforcement will help mitigate these risks. The Secretariat considers the overall risks to the sustainability of the HCFC phase-out to be low, provided that the remaining regulatory, training and reclamation activities are completed as planned.

Conclusion

38. The verification reports confirmed that Saudi Arabia's HCFC consumption from 2016 to 2025 was in compliance with the Montreal Protocol control limits and the maximum allowable consumption under its Agreements with the Executive Committee. As of September 2026, 39.9 per cent of the funds approved for the first tranche had been disbursed, exceeding the 20 per cent threshold. Significant progress was achieved under the first tranche, including the upgrade of the e-licensing system, the adoption of ISO 5149 by SASO, the completion of the review of IEC 60335-2-40 and the procurement of tools and equipment for 1,800 servicing workshops. The conditions for submission of the second tranche set out in decision 94/31(d)(ii) were met: the bans on the import and manufacture of HCFC-based equipment were in place, the study on reclamation policy and standards was completed, a second reclamation centre was established and 1,030 RAC technicians had been trained and certified, exceeding the required minimum of 1,000. However, the equipment for servicing workshops has yet to be distributed, regional shipping disruptions have delayed the delivery of other equipment procured under the first tranche, the second reclamation centre has yet to be commissioned, and the reclamation guidelines and regulatory annexes remain to be adopted. Three verification recommendations remain outstanding, and the recommendation below provides for UNIDO to report on their implementation as part of the progress report on the second tranche.

**RECOMMENDATION**

39. The Executive Committee may wish to consider:

(a) Noting the progress report on the implementation of the first tranche of stage II of the HCFC phase-out management plan (HPMP) for Saudi Arabia;

(b) Requesting UNIDO to include detailed reporting about types and amounts of refrigerants being recovered, recycled, and reclaimed by the supported centres when submitting the request for the third tranche of stage II of the HPMP and in line with decision 94/31 (d)(iii); and

(c) Approving the second tranche of stage II of the HPMP for Saudi Arabia, and the corresponding 2027–2028 tranche implementation plan, in the amount of US $5,888,127, consisting of US $3,592,336, plus agency support costs of US $251,464, for UNIDO and US $1,838,501, plus agency support costs of US $205,826, for UNEP, on the understanding that UNIDO will include, as part of the progress report on the implementation of the second tranche of the HPMP, an update on progress in implementing the outstanding recommendations contained in the verification report for 2020 to 2025.