

**United Nations  
Environment  
Programme**Distr.  
GENERALUNEP/OzL.Pro/ExCom/97/36  
17 November 2025

ORIGINAL: ENGLISH



EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Ninety-seventh Meeting  
Montreal, 1–5 December 2025  
Item 9(d) of the provisional agenda<sup>1</sup>

**PROJECT PROPOSALS: ARGENTINA**

This document consists of the comments and recommendation of the Secretariat on the following project proposals, noting that stage III of the HCFC phase-out plan for the country will be presented in an addendum:

Phase-out

- |   |                                                                                                                                |                 |                          |
|---|--------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------|
| • | HCFC phase-out management plan (stage II, fourth tranche)                                                                      | UNIDO and Italy | Individual consideration |
| • | Control of emissions of HFC-23 generated in the production of HCFC-22 at Frío Industrias Argentinas (second and third tranche) | UNIDO           | Individual consideration |

<sup>1</sup> UNEP/OzL.Pro/ExCom/97/1

## PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

## Argentina

| (I) PROJECT TITLE              | AGENCY              | MEETING APPROVED                              | CONTROL MEASURE       |
|--------------------------------|---------------------|-----------------------------------------------|-----------------------|
| HCFC phase-out plan (stage II) | UNIDO (lead), Italy | 79 <sup>th</sup> / 92 <sup>nd</sup> (updated) | 50% phase-out by 2024 |

| (II) LATEST ARTICLE 7 DATA (Annex C, Group I) | Year: 2024 | 158.45 ODP tonnes |
|-----------------------------------------------|------------|-------------------|
|-----------------------------------------------|------------|-------------------|

| (III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes) |         |       |               |               |           |         |               | Year: 2024 |
|-----------------------------------------------------------|---------|-------|---------------|---------------|-----------|---------|---------------|------------|
| Chemical                                                  | Aerosol | Foam  | Fire-fighting | Refrigeration |           | Solvent | Process agent | Total use* |
|                                                           |         |       |               | Manufacturing | Servicing |         |               |            |
| HCFC-22                                                   | 0.10    |       |               | 2.20          | 59.60     |         |               | 61.90      |
| HCFC-123                                                  |         |       | 0.66          |               | 0.16      |         |               | 0.81       |
| HCFC-141b                                                 | 1.78    | 32.61 |               |               | 6.66      |         |               | 41.05      |
| HCFC-141b in imported pre-blended polyols                 |         | 4.17  |               |               |           |         |               | 4.17       |
| HCFC-142b                                                 |         |       |               |               | 0.20      |         |               | 0.20       |

\*Actual use by sector may differ from reported consumption (production and imports minus exports) due to stocks management

| (IV) CONSUMPTION DATA (ODP tonnes) |  |        |                                                    |
|------------------------------------|--|--------|----------------------------------------------------|
| 2009–2010 baseline:                |  | 400.70 | Starting point for sustained aggregate reductions: |
|                                    |  |        | 377.51                                             |
| CONSUMPTION ELIGIBLE FOR FUNDING   |  |        |                                                    |
| Already approved:                  |  | 198.72 | Remaining:                                         |
|                                    |  |        | 178.79                                             |

| (V) ENDORSED BUSINESS PLAN |                            | 2025    | 2026 | 2027 | Total   |
|----------------------------|----------------------------|---------|------|------|---------|
| UNIDO                      | ODS phase-out (ODP tonnes) | 11.23   | 0.0  | 0.0  | 11.23   |
|                            | Funding (US \$)            | 983,463 | 0    | 0    | 983,463 |
| Italy                      | ODS phase-out (ODP tonnes) | 0.0     | 0.0  | 0.0  | 0.0     |
|                            | Funding (US \$)            | 0       | 0    | 0    | 0       |

| (VI) PROJECT DATA                                            |       |               | 2017*     | 2018   | 2019      | 2020<br>2021 | 2022   | 2023**    | 2024*** | Total     |
|--------------------------------------------------------------|-------|---------------|-----------|--------|-----------|--------------|--------|-----------|---------|-----------|
| Montreal Protocol consumption limits (ODP tonnes)            |       |               | 360.63    | 360.63 | 360.63    | 260.45       | 260.45 | 260.45    | 260.45  | n/a       |
| Maximum allowable consumption (ODP tonnes)                   |       |               | 330.58    | 330.58 | 330.58    | 260.45       | 200.35 | 200.35    | 200.35  | n/a       |
| Funding agreed in principle (US \$)                          | UNIDO | Project costs | 1,553,271 | 0      | 3,280,793 | 0            | 0      | 3,888,050 | 969,124 | 9,691,238 |
|                                                              |       | Support costs | 108,729   | 0      | 229,656   | 0            | 0      | 272,164   | 67,839  | 678,387   |
|                                                              | Italy | Project costs | 250,000   | 0      | 0         | 0            | 0      | 0         | 0       | 250,000   |
|                                                              |       | Support costs | 32,500    | 0      | 0         | 0            | 0      | 0         | 0       | 32,500    |
| Funds approved by ExCom (US \$)                              |       | Project costs | 1,803,271 | 0      | 3,280,793 | 0            | 0      | 3,888,050 |         | 8,972,114 |
|                                                              |       | Support costs | 141,229   | 0      | 229,656   | 0            | 0      | 272,164   |         | 643,049   |
| Total funds recommended for approval at this meeting (US \$) |       | Project costs |           |        |           |              |        |           | 919,124 | 919,124   |
|                                                              |       | Support costs |           |        |           |              |        |           | 64,339  | 64,339    |

\* At the 80<sup>th</sup> meeting, the World Bank stopped being the cooperating implementing agency for stage II (decision 80/31).

\*\* Funding released to UNIDO at the 92<sup>nd</sup> meeting amounted to US \$3,863,050, plus agency support costs of US \$270,414, reflecting the reduction to be applied to the third tranche in line with decision 92/31(b)(i).

\*\*\* The 2024 tranche was delayed to 2025. Funding to be released to UNIDO at the 97<sup>th</sup> meeting amounts to US \$919,124, plus agency support costs of US \$64,339, reflecting the reduction to be applied to the fourth tranche in line with decision 92/31(b)(ii).

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

## PROJECT DESCRIPTION

1. On behalf of the Government of Argentina, UNIDO as the lead implementing agency has submitted a request for funding for the fourth and final tranche of stage II of the HCFC phase-out management plan (HPMP), in the amount of US \$919,124, plus agency support costs of US \$64,339, for UNIDO only.<sup>2</sup> The submission includes a progress report on the implementation of the third tranche, the verification report on HCFC consumption for 2023 and 2024, and the tranche implementation plan for 2026 to 2027.

### Report on HCFC consumption

2. The Government of Argentina reported a consumption of 158.45 ODP tonnes of HCFCs in 2024, which is 60 per cent below the HCFC baseline for compliance and 21 per cent below the allowable maximum established for that year in the Agreement between the Government of Argentina and the Executive Committee. The 2020–2024 HCFC consumption is shown in table 1.

**Table 1. HCFC consumption in Argentina (2020–2024 Article 7 data)**

|                                      | 2020            | 2021            | 2022            | 2023            | 2024            | Baseline       |
|--------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| <b>Metric tonnes (mt)</b>            |                 |                 |                 |                 |                 |                |
| HCFC-22                              | 1,668.67        | 1,459.72        | 2,508.29        | *2,230.00       | 2,168.46        | 4,859.5        |
| HCFC-123                             | 34.82           | 77.01           | 74.15           | 32.69           | 12.99           | 74.7           |
| HCFC-141b                            | 295.65          | 740.20          | 763.93          | 360.87          | 346.66          | 1,031.1        |
| HCFC-142b                            | 17.91           | 15.09           | 0.62            | 6.05            | 12.17           | 268.1          |
| <b>Total (mt)</b>                    | <b>2,017.05</b> | <b>2,292.02</b> | <b>3,346.99</b> | <b>2,629.61</b> | <b>2,540.28</b> | <b>6,281.3</b> |
| <b>ODP tonnes</b>                    |                 |                 |                 |                 |                 |                |
| HCFC-22                              | 91.78           | 80.28           | 137.96          | *122.65         | 119.27          | 267.3          |
| HCFC-123                             | 0.70            | 1.54            | 1.48            | 0.65            | 0.26            | 1.5            |
| HCFC-141b                            | 32.52           | 81.42           | 84.03           | 39.70           | 38.13           | 113.4          |
| HCFC-142b                            | 1.16            | 0.98            | 0.04            | 0.39            | 0.79            | 17.5           |
| <b>Total (ODP tonnes)</b>            | <b>126.16</b>   | <b>164.23</b>   | <b>223.51</b>   | <b>163.39</b>   | <b>158.45</b>   | <b>400.7</b>   |
| <b>Maximum allowable consumption</b> | 260.45          | 260.45          | 200.35          | 200.35          | 200.35          | n/a            |

\*HCFC-22 consumption figure submitted to the Ozone Secretariat and the Fund Secretariat will be corrected to reflect an increase of 30 mt (1.65 ODP tonnes).

3. Consumption of HCFC-22 has significantly decreased in manufacturing sectors but remains high in servicing, even as legacy equipment is being retired, retrofitted, or replaced. In supermarkets, its share fell from about 65 per cent in 2017 to 40 per cent in 2024, while options with low global-warming potential (GWP), such as carbon dioxide (CO<sub>2</sub>), are slowly becoming more popular, and HFC blends such as R-404A dominate in new direct-expansion cooling systems. The use of HCFC-141b has been steadily decreasing due to foam sector conversions and regulatory measures, with residual consumption mainly in foams and minor use in aerosols and servicing. HCFC-142b has been phased out in the extruded polystyrene (XPS) foam sector, with only small and declining quantities left in servicing. HCFC-123 continues to be used in fire extinguishers and some chillers, but its consumption has also slowly decreased as HFC and hydrofluoroolefin (HFO) alternatives gain prominence.

### *Country programme implementation report*

4. The Government of Argentina reported HCFC sector consumption data under the 2024 country programme (CP) implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol.

<sup>2</sup> As per the letter of 29 September 2025 from the Ministry of Foreign Affairs, International Commerce and Worship of Argentina to UNIDO.

### Verification report

5. The verification report 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 2023 to 2024 was below the Montreal Protocol control targets and the maximum allowable established in the Agreement between the Government and the Executive Committee. The verification corroborated the data reported regarding the production, import, and export of HCFCs in Argentina in 2023 and 2024, and confirmed that the Enforcement Authority carried out adequate control and followed up on every transaction related to those activities.

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

### Legal framework

6. At the 92<sup>nd</sup> meeting, the Government of Argentina presented a plan of action to prevent potential future non-compliance with the Agreement, including carrying out biannual surveys on the delayed shipments of controlled substances; strict, continuous control on the delivery of extraordinary quotas to new and existing importers; the monitoring and recording of shipments; continuous (monthly) monitoring and recording of production volumes at the only local producer of HCFCs, Frío Industrias Argentinas, S.A. (FIASA); and monthly monitoring of HCFC exports.<sup>3</sup> The rigorous implementation of those measures, which remain in force, has helped maintain the country's HCFC consumption below the target level.

7. Import quotas for 2024 and 2025 were allocated at levels below the maximum allowable consumption specified in the Agreement between the Government and the Executive Committee. The quotas were registered in real time in the customs database, which can be accessed by the national ozone unit, Oficina Programa Ozono (OPROZ).

8. The Government of Argentina had committed to banning, by 1 January 2022, the import and use of HCFC-141b for flushing refrigeration circuits during servicing and in the manufacturing of polyurethane (PU) foam; and the import and use of HCFC-22 and HCFC-142b for the manufacturing of XPS foam. The Government had previously postponed the enforcement of those bans due to delays in project implementation and low availability of affordable alternatives. However, as of 2025, import quotas have not been allocated either for HCFC-141b in the PU foam sector or for HCFC-22 and HCFC-142b in the XPS foam sector, and the bans are expected to come into effect by December 2027. Limited HCFC-141b quotas for flushing are still being granted.

### Manufacturing sector

9. The status of conversion of projects in the PU and XPS foam sectors is summarized in table 2.

**Table 2. Status of progress of conversion projects in the PU and XPS foam sectors in Argentina**

| Project /<br>enterprise              | HCFC<br>consumption |       | Funds<br>approved<br>(US \$) | Status                                                                                |
|--------------------------------------|---------------------|-------|------------------------------|---------------------------------------------------------------------------------------|
|                                      | mt                  | ODP t |                              |                                                                                       |
| PU foam sector – individual projects |                     |       |                              |                                                                                       |
| Argenpur                             | 21.61               | 2.38  | 211,524                      | Box foam manufacturing conversion from HCFC-141b to pentane completed.                |
| Friostar                             | 38.92               | 4.28  | 336,050                      | Continuous foam panel manufacturing conversion from HCFC-141b to n-pentane completed. |
| Subtotal                             | 60.53               | 6.66  | 547,574                      |                                                                                       |

<sup>3</sup> Document UNEP/OzL.Pro/ExCom/92/21 and decision 92/31(a)(v)

| Project /<br>enterprise                                     | HCFC<br>consumption |       | Funds<br>approved<br>(US \$) | Status                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------|---------------------|-------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             | mt                  | ODP t |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| PU foam sector – systems houses and downstream users (DSUs) |                     |       |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Alkanos (16)                                                | 96.02               | 10.56 | 999,647                      | The project has faced significant delays due to the high cost, low availability, and long delivery times of HFOs. Of the 7 systems houses initially included in the sector plan, 4 continue to participate (Alkanos, BASF, Poliresinas San Luis and Quimica del Caucho). Dow and Huntsman exited Argentina’s PU market and Ecopur ceased operations; their DSUs are now served by the remaining systems houses. Two systems houses procured thermal conductivity testers, and selected DSUs conducted initial trials with HFO-based formulations, confirming their technical feasibility and acceptable foam performance. Details of the status of availability of alternative technologies are presented in paragraphs 10 to 15. |
| BASF (20)*                                                  | 107.98              | 11.88 | 914,955                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Dow (8)*                                                    | 45.35               | 4.99  | 446,140                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Ecopur (38)                                                 | 46.59               | 5.13  | 510,763                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Huntsman (28)*                                              | 92.55               | 10.18 | 962,540                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Poliresinas San Luis (12)                                   | 22.03               | 2.42  | 241,438                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Quimica del Caucho (17)                                     | 56.50               | 6.21  | 588,344                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Subtotal                                                    | 467.02              | 51.37 | 4,663,827                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Total PU                                                    | 527.55              | 58.03 | 5,211,401                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| XPS foam sector                                             |                     |       |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Celpack                                                     | 57.30               | 3.42  | 348,767                      | XPS foam manufacturing conversion from HCFC-22 to butane completed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Perfiles Revestidos                                         |                     |       |                              | XPS foam manufacturing conversion from HCFC-22 to CO2/ethanol completed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Total XPS                                                   | 57.30               | 3.42  | 348,767                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

\* Systems houses ineligible due to non-Article 5 ownership; funding is provided only for DSUs.

### *Temporary use of technology with high global-warming potential for polyurethane foam (decision 96/8)*

10. In approving the third tranche of stage II of the HPMP at its 92<sup>nd</sup> meeting, the Executive Committee noted that the lack of supply of low-GWP alternatives to HCFC-141b had delayed the implementation of activities in the PU foam sector that would have otherwise allowed the country to phase out 85.92 ODP tonnes of HCFCs; that high-GWP alternatives could be used on a transitional basis if alternatives remained locally unavailable; and that the Government would report to each meeting on progress made in ensuring that selected technologies and associated components would become available on a commercial basis in the country, on the understanding that incremental operating costs (IOCs) of related investment projects would not be funded until transition to the agreed alternatives was complete (decision 92/31).

11. UNIDO has reported on the matter at each Executive Committee meeting since.<sup>4</sup> The report submitted to the 96<sup>th</sup> meeting included confirmation from one supplier regarding the capacity to immediately supply affordable HFOs in returnable one-tonne cylinders and the possibility of reducing delivery times, which allowed most systems houses to place their first purchase orders. As no licenses for HCFC-141b imports had been granted in 2025, systems houses continued to use the existing stocks of HCFC-141b as well as HFCs on a transitional basis. In line with decision 92/31(c)(ii), the Executive Committee requested that the Government of Argentina and UNIDO provide relevant updates to the following meeting (decision 96/8).

12. The report submitted by UNIDO to the present meeting indicates that by August 2025, three systems houses had received HFOs and started putting out new formulations onto the local market. The delivery was delayed by two months due to the complex logistics of importing HFO in returnable cylinders which must be shipped back within a very short timeframe. While the supplier and systems houses are

<sup>4</sup> Documents UNEP/OzL.Pro/ExCom/93/20 (paragraphs 2-9), UNEP/OzL.Pro/ExCom/94/9 (paragraphs 5-14), UNEP/OzL.Pro/ExCom/95/20 (paragraphs 16-28) and UNEP/OzL.Pro/ExCom/96/11 (paragraphs 5-18)

working to improve this process and HFO has become more available overall, uncertainty persists regarding the supply chain, with only one supplier having begun deliveries so far.

13. In the absence of affordable HFO supplies, some systems houses are still using HFCs as a transitional alternative to maintain operational continuity. With the arrival of HFOs in mid-2025 and their integration into the market, systems houses have expressed commitment to fully transitioning to HFOs, provided however that the cost and logistical barriers continue being addressed.

14. Following exchanges between the Government of Argentina and other countries in the region, an addendum to the report was submitted to provide a broader perspective on the challenges and progress observed in transitioning to low-GWP blowing agents for PU foam, indicating that adoption of HFOs has not advanced evenly across the region. While technical trials and early market introduction have taken place in several countries, the process remains constrained by structural issues that extend beyond national contexts. The main challenges include:

- (a) Supply chain fragility and delays: Delivery has been affected by long lead times and logistical bottlenecks, particularly related to the management of returnable cylinders, involving complex import–export procedures and short return deadlines;
- (b) Limited supplier base: With only one supplier currently operating in the Latin American market, establishing stable supply contracts has not been possible, exposing systems houses to uncertainty regarding both prices and continuity of deliveries;
- (c) High and unstable costs: Even with recent price reductions, the cost of HFOs remains substantially higher than that of HCFC-141b or hydrocarbons (HCs), deterring small and medium-sized enterprises (SMEs) from rapidly adopting new technologies, while price fluctuations linked to international logistics and currency rates add to overall unpredictability;
- (d) Technical and formulation adjustments: Systems houses in the region continue to report technical challenges in stabilizing HFO-based formulations to maintain the same shelf life and mechanical performance as those previously obtained with HCFC-141b. While progress has been made—extending product stability to around five months in some cases—further adaptation of catalysts, surfactants, and additive packages are required; and
- (e) Regulatory and market uncertainty: Ongoing regulatory changes in high-income markets, such as restrictions on certain HFOs due to concerns about the generation of per- and polyfluoroalkyl substances (PFAS), are creating uncertainty for developing countries. Systems houses are cautious about investing in large-scale reformulation processes until long-term regulatory outlook becomes clearer.

15. The addendum concludes that the transition to HFOs as blowing agents, while technically feasible, is not yet fully sustainable. Persistent supply constraints, high and volatile prices, and limited technical assistance from producers continue to slow down large-scale adoption. An extension of the duration of stage II of the HPMP to December 2027 would allow for the completion of all SME conversions.

#### *Refrigeration servicing sector*

16. Under the third tranche, 805 refrigeration and air-conditioning (RAC) servicing technicians across the country received training on good practices in the handling of flammable refrigerants (for a cumulative 1,200 trained under the stage); 356 technicians were certified (552 certified under the stage); and 375 tool kits were distributed to certified technicians (including three women) (560 toolkits distributed under the

stage).<sup>5</sup> OPROZ has also provided technicians with manuals and awareness materials on good maintenance practices, energy efficiency, updates regarding the Kigali Amendment, and the use of HCs as refrigerants. The remaining technicians will receive training, certification and toolkits in 2026 and 2027.

17. The upgraded refrigerant reclaiming centre continues to operate, and 12 servicing workshops participated in a project to demonstrate the use of HFO as an alternative to HCFC-141b for cleaning refrigeration circuits, receiving training, flushing equipment and HFO-based solvents for testing. The results were positive, but the adoption of the alternative has so far been limited due to its high cost.

18. OPROZ continues to promote Montreal Protocol objectives and available assistance through participation in national trade events and specialized meetings and outreach to stakeholders.

### *Project implementation and monitoring*

19. The project implementation and monitoring unit (PMU) in Argentina has two components: one for the servicing sector and one for the foam sector. Out of the US \$262,799 approved for the PMU under the third tranche, US \$82,588 has been disbursed, including US \$16,988 for national consultants and US \$65,600 for local supervision, coordination, travel, and monitoring. The remaining funding will be disbursed in 2026-2027.

20. Since 2022, the monitoring of HCFC-22 production at FIASA has been financed by and reported under the HFC-23 project.

### Level of fund disbursement

21. As of October 2025, of the US \$8,947,114 approved so far, US \$3,921,619 had been disbursed (US \$3,711,612 for UNIDO and US \$210,007 for the Government of Italy), as shown in table 3. The balance of US \$5,025,495 will be disbursed in 2025-2027.

**Table 3. Financial report of stage II of the HPMP for Argentina (US \$)**

| Tranche |           | UNIDO      | Italy   | Total      | Disbursement rate (%) |
|---------|-----------|------------|---------|------------|-----------------------|
| First   | Approved  | 1,553,271  | 250,000 | 1,803,271  | 82                    |
|         | Disbursed | 1,269,829  | 210,007 | 1,479,836  |                       |
| Second  | Approved  | 3,280,793  | 0       | 3,280,793  | 50                    |
|         | Disbursed | 1,649,571  | 0       | 1,649,571  |                       |
| Third   | Approved  | *3,863,050 | 0       | *3,863,050 | 21                    |
|         | Disbursed | 792,212    | 0       | 792,212    |                       |
| Total   | Approved  | *8,697,114 | 250,000 | *8,947,114 | 44                    |
|         | Disbursed | 3,711,612  | 210,007 | 3,921,619  |                       |
|         | Balance   | 4,985,502  | 39,993  | 5,025,495  |                       |

\*Including the reduction of US \$25,000 applied to the third tranche for UNIDO

### Implementation plan for the fourth and final tranche of stage II of the HCFC phase-out management plan

22. The following activities will be implemented between January 2026 and December 2027:

- (a) *Systems house umbrella project in the PU foam manufacturing sector*: Complete all conversions to HFO; hold meetings with systems houses to discuss and agree the way forward; procure and deliver materials to downstream users; monitor project implementation and prepare final report (US \$504,013);

<sup>5</sup> Including *inter alia* piercing pliers with spare needle, tool chest, wireless vacuum gauge, charging and vacuuming set for HCs, compact clamp meter fieldpiece SC260, and leak detector for combustible gas D540 T-Line.

- (b) *Refrigeration servicing sector*: Complete the training of 4,000 technicians and the certification of 1,000 technicians in good practices in the handling of flammable refrigerants; complete the distribution of 1,000 tool kits to certified technicians; regularly review training content and methodologies in line with international safety standards; monitor the implementation of the technician certification programme, including theoretical and practical examinations, issuance of certificates, and liaising with the certification body; purchase and install equipment<sup>6</sup> and start operating a new refrigerant reclaiming centre; continue implementation of awareness activities including provision of materials and guidance on HCFC phase-out progress and alternative refrigerants; participate in industry meetings, forums, national exhibitions and other events to present HPMP achievements, discuss compliance requirements and benefits of low-GWP refrigerants; and distribute communication materials, brochures, and multimedia content to technicians, enterprises, and the public, highlighting success stories and best practices from ongoing HPMP activities (US \$271,286); and
- (c) *Project implementation and monitoring*: Annually update the HCFC quota system; monitor and enforce, in collaboration with customs and enforcement authorities, the import ban on HCFC-based domestic air conditioners; and continue to monitor activities in the refrigeration servicing sector (US \$90,000 for staff and consultants, US \$40,000 for travel to monitor HPMP activities, and US \$13,825 for meetings) (total of US \$143,825).

## SECRETARIAT'S COMMENTS AND RECOMMENDATION

### COMMENTS

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

##### *Legal framework*

23. The Government of Argentina has issued HCFC import quotas for 2025 at 57.24 ODP tonnes, which, combined with the allowed production of 72.98 ODP tonnes, is in line with the Montreal Protocol control target for the year. The Secretariat notes with appreciation that the Government of Argentina continues to rigorously implement measures established to prevent potential non-compliance with the Agreement, including regular monitoring of imports, production and exports, as described in the verification report.

24. In approving the third tranche of stage II, the Executive Committee requested UNIDO to submit with the fourth tranche request the revised dates for the commitment by the Government of Argentina to issue a ban on the import and use of HCFC-141b pure or contained in pre-blended polyols for the manufacture of PU foam; a ban on the import and use of HCFC-22 and HCFC-142b for the manufacture of XPS foam; and a ban on the import and use of HCFC-141b for flushing refrigeration circuits during servicing.<sup>7</sup> UNIDO reported that since 1 January 2025, no import quotas have been allocated for either of those uses (except flushing), and that relevant Ministries were working on the regulatory processes for the requested bans, expected to be finalized prior to project closure in December 2027. Regarding the use of HCFC-141b for flushing, limited quotas are still being granted, as suitable alternatives previously not available in the country are only now being tested, but the ban is also planned for 2027.

25. The Secretariat acknowledges that the discontinuation of import quotas for HCFCs used in the XPS and PU foam sectors has contributed to the sustainability of conversions in the XPS foam sector and assisted

<sup>6</sup> Including *inter alia* reclaiming unit, recovery units, vacuum pumps, storage tanks and cylinders, refrigerant identifiers, scales, refilling/transfer stations, leak detectors, printer for cylinder labelling, adapters, valves, and safety equipment.

<sup>7</sup> Decision 92/31(d)(iii)

in the transition of the PU foam sector, noting that the adoption of alternative technologies for PU foam formulations and for circuit flushing is still ongoing. If the Executive Committee approves the extension of stage II of the HPMP (discussed below in paragraphs 35-38), the Secretariat recommends that the Government of Argentina and UNIDO include an update on the status of these regulatory measures and final dates for the introduction of the three bans in its next progress report on the implementation of stage II of the HPMP to be submitted to 99<sup>th</sup> meeting.

#### *Polyurethane foam sector*

26. The Secretariat notes that all conversions of individual enterprises to low-GWP alternatives in the PU foam and XPS foam sectors were completed, including the XPS foam enterprise Celpack, which has successfully resolved its financial viability issues.

27. On the status of the PU foam sector group project implemented with systems houses, UNIDO informed the Secretariat that initial trials with HFO-based formulations confirmed their technical feasibility and acceptable foam performance. However, the new formulations require additional, costlier additives and iterative adjustments to optimize efficiency. The issues of HFC supply, delivery times and prices will continue to be addressed and monitored by the Government of Argentina.

28. UNIDO informed the Secretariat that out of the seven systems houses participating in the project, three had ceased operations in the country (including two owned by non-Article 5 capital and one Article 5 owned). Their downstream users are now being served by the remaining systems houses. Unused funds associated with eligible enterprises that do not to participate in the project are to be returned to the Fund at the end of the project unless another eligible enterprise is identified during implementation, in which case, the replacement would be presented for the Executive Committee's consideration.

29. In line with decision 92/31(d)(i),<sup>8</sup> UNIDO submitted a preliminary list of eligible enterprises participating in the project. This list is expected to be updated and completed as enterprise eligibility is validated and assistance provided. If the extension of stage II of the HPMP is approved, UNIDO will be requested to continue submitting as part of the annual progress report on the implementation of the fourth tranche, the complete list of enterprises being assisted by the Multilateral Fund under stage II. This system has proven effective in monitoring projects involving systems houses and numerous SMEs. At the end of the project, any unused funds associated with eligible enterprises that did not participate or were considered ineligible upon verification, are to be returned to the Fund.

30. UNIDO initially informed the Secretariat about a possible plan to reallocate IOCs to incremental capital costs to provide equipment to the downstream foam enterprises. While the cost guidelines allow such flexibility, the idea was dismissed during the project review process as no equipment is incremental for HFO use. UNIDO will therefore facilitate procurement of raw materials and chemicals associated with IOC funding as planned.

#### *Temporary use of technology with high global-warming potential for polyurethane foam (decision 96/8)*

31. In reference to the report summarized in paragraphs 10 to 15 above, UNIDO estimated that, following HFO deliveries and optimized formulations to be deployed over 2025–2026, temporary use of HFCs by some enterprises in the PU foam sector would be discontinued, highlighting the local systems houses' willingness to adopt HFOs as an alternative once the price and supply barriers were overcome.

32. Despite significant progress, issues regarding the availability and pricing of low-GWP alternatives, supply chain stability and limited supplier base are not fully resolved, and high-GWP substances continue

---

<sup>8</sup> UNIDO was requested to submit the updated list of downstream PU foam enterprises being assisted by the Multilateral Fund under stage II, including their HCFC-141b consumption phased out, the subsector concerned, the baseline equipment and the technology adopted.

to be used on a transitional basis. Therefore, in line with decision 92/31(c)(ii), the Secretariat recommends that the Government of Argentina continue reporting to the Executive Committee on the matter.

*Refrigeration servicing sector*

33. The Secretariat notes that activities in the refrigeration servicing sector are progressing as planned, and with the requested extension, the Government will complete them. UNIDO reported that the reclamation centre was operational, currently holding about 1.7 mt of HCFC-22, HFC-134a, R-404A, and R-410A for reclaiming. Under its business model, clients deliver used refrigerant and receive 50 per cent of the reclaimed product, while the centre retains the remainder for certified resale. Improvements needed include an ongoing review of cost recovery for labour, energy, and packaging, and increasing recovery volumes through incentives and outreach. The fourth tranche will support a second reclamation centre in Greater Buenos Aires to expand coverage, reduce transport distances, and increase reclaiming volumes, along with further development of the business model to ensure long-term sustainability.

*Level of fund disbursement*

34. Despite extensive implementation—training of 805 and certification of 356 technicians, delivering 375 tool kits, and conducting numerous awareness activities—disbursement remains relatively low. UNIDO explained that delays stem from invoicing, administrative procedures, and cost-sharing arrangements with training partners. Payments for completed activities are expected soon, alongside procurement of additional tool kits, dependent on warehouse capacity and delivery timelines. Funds are being used as planned to support expanded training, further certification, tool kit and recovery equipment procurement, and enhanced outreach efforts.

Completion of stage II of the HCFC phase-out management plan

35. At the 92<sup>nd</sup> meeting, the Executive Committee approved, on an exceptional basis, the extension of stage II of the HPMP for Argentina to 31 December 2024, given the implementation delays caused by the COVID-19 pandemic, and agreed to review the situation at the time of submission of the fourth tranche in light of the availability of the selected technology for the PU foam sector (decision 92/31(e)(i)).

36. Considering the continuing issues regarding availability of alternative technologies, described in detail above, the Government of Argentina is requesting an extension to the date of completion of stage II to 31 December 2027 to allow for the completion of ongoing activities in the PU foam and the refrigeration servicing sector.

37. The Secretariat considers the two-year extension justified, given the complexity of transitioning numerous SMEs in the PU foam sector to HFOs, including formulation optimization and market deployment. The extension will provide time needed to resolve the logistical and pricing challenges and secure a stable HFO supply and to avoid a shift to HFCs. In the refrigeration servicing sector, it will enable completion of activities slowed down due to economic conditions, such as the training and certification of 4,000 and 1,000 technicians, respectively, distributing tool kits with alternative flushing agents, and strengthening the refrigerant reclaiming network through establishing of the second reclaiming center.

38. Accordingly, the Executive Committee may wish to approve, on an exceptional basis, the extension of the duration of stage II of the HPMP for Argentina to 31 December 2027, on the understanding that no further extension will be requested. If the extension is approved, the Government of Argentina and UNIDO will be requested to submit on a yearly basis, progress reports on the implementation of the work programme associated with the final tranche through completion of the project, and a project completion report to the first meeting of the Executive Committee in 2028.

### Updated Agreement

39. Since the extension is requested only to complete the final tranche of stage II of the HPMP, with no further tranches to reschedule, and stage III (including a draft Agreement with consumption targets starting in 2025) is under consideration at this meeting, the Agreement for stage II will not be updated.

### Gender policy implementation

40. In line with decisions 84/92(d) and 90/48(c), UNIDO has been applying the Multilateral Fund gender policy throughout the implementation of stage II of the HPMP by collecting disaggregated data, ensuring that both women and men access and participate in project activities, sensitizing project staff and stakeholders to the participation of women, carrying out balanced recruitment of project personnel and ensuring a balanced representation in project boards and steering committees.

### Sustainability of the HCFC phase-out and assessment of risks

41. A strong institutional backing supports the sustainability of the project ensuring continuity of actions and facilitating coordination across sectors.<sup>9</sup> OPROZ is strengthening the regulatory framework for substances controlled under the Montreal Protocol by building alliances with customs, training centers, and end users. Key sustainability measures include enforcing policies that promote non-HCFC, low-GWP refrigerants; ongoing technician training in safe practices; reinforcing the refrigerant reclaiming network; and raising public awareness of Argentina's commitments under the Protocol. The Government of Argentina will issue bans on the import and use of HCFC-141b pure or contained in pre-blended polyols for the manufacture of PU foam, on the import and use of HCFC-22 and HCFC-142b for the manufacture of XPS foam, and on the import and use of HCFC-141b for flushing refrigeration circuits during servicing. In the meantime, no quotas are being issued for imports of HCFCs to be used either in XPS or PU foam manufacturing.

42. Identified risks to HPMP implementation include the limited availability and high cost of low-GWP alternatives, the need for continuous technical updates to be provided to RAC technicians, sustaining stakeholder engagement post-project, and enterprises' financial capacity for conversions. To address these, Argentina has strengthened institutions, engaged training bodies and the private sector, and promoted gradual adoption of low-GWP alternatives in its market.

43. To mitigate risks resulting from the exchange rate volatility, UNIDO is directly procuring materials and tools rather than transferring funds. Additionally, strict financial procedures are applied: payments occur only after activities are completed and deliverables verified under contractual terms. This approach minimizes currency depreciation exposure while ensuring accountability and timely use of project funds.

### Conclusion

44. In 2023 and 2024, Argentina remained in compliance with the Montreal Protocol control targets and the maximum allowable consumption levels established under its Agreement with the Executive Committee. All individual enterprise-level conversions to low-GWP alternatives in the PU and XPS foam sectors have been completed and activities in the refrigeration servicing sector are ongoing, including the training and certification of RAC technicians, distribution of tool kits, strengthening of the refrigerant reclaiming network, and awareness-raising initiatives. However, implementation of the project to phase out HCFC-141b in foam enterprises, with support from systems houses, continues to face delays due to challenges related to the availability and cost of the selected alternative. The first shipment of the alternative was received in mid-2025, enabling the start of the transition. To date, 21 per cent of funds from the

---

<sup>9</sup> The Ministry of Foreign Affairs, International Commerce and Worship; Secretariat of the Interior, Undersecretariat of Environmental Affairs; and the Secretary of Industry and Productive Development of the Ministry of Economy are involved in the implementation of the Montreal Protocol.

previously approved tranche have been disbursed. The Government of Argentina is requesting an extension of the stage II completion date to 31 December 2027 to finalize the PU foam project and complete ongoing activities in the refrigeration servicing sector.

## RECOMMENDATION

45. The Executive Committee may wish to consider:

(a) Noting:

- (i) The progress report on the implementation of the third tranche of stage II of the HCFC phase-out management plan (HPMP) for Argentina;
- (ii) The report on the update on the status of availability of low-global-warming-potential (GWP) alternatives to HCFC-141b in the foam sector and on the transitional use of high-GWP alternatives in the context of stage II of the HPMP for Argentina;

(b) Requesting the Government of Argentina and UNIDO to submit:

- (i) In line with decision 92/31(c)(ii), to provide an update at the 98<sup>th</sup> meeting on the local market availability of low-GWP alternatives to HCFC-141b in the foam sector and on the transitional use of high-GWP alternatives;
- (ii) On a yearly basis, progress reports on the implementation of the work programme associated with the final tranche through completion of the project, and a project completion report to the first meeting of the Executive Committee in 2028;
- (iii) In the next progress report referred to in subparagraph (b)(ii):
  - a) The updated list of downstream polyurethane (PU) foam enterprises being assisted by the Multilateral Fund under stage II, including their HCFC-141b consumption phased out, the subsector concerned, the baseline equipment and the technology adopted;
  - b) Revised dates for the commitment by the Government of Argentina to issue a ban on the import and use of HCFC-141b pure or contained in pre-blended polyols for the manufacture of PU foam; a ban on the import and use of HCFC-22 and HCFC-142b for the manufacture of extruded polystyrene foam; and a ban on the import and use of HCFC-141b for flushing refrigeration circuits during servicing;

(c) Approving:

- (i) On an exceptional basis, the extension of the duration of stage II of the HPMP for Argentina to 31 December 2027, on the understanding that no further extension will be requested; and
- (ii) The fourth and final tranche of stage II of the HPMP for Argentina, and the corresponding 2026-2027 tranche implementation plan, in the amount of US \$919,124, plus agency support costs of US \$64,339.

## PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

## Argentina

| (I) PROJECT TITLE                                                                                   | AGENCY       | MEETING APPROVED | CONTROL MEASURE                                          |
|-----------------------------------------------------------------------------------------------------|--------------|------------------|----------------------------------------------------------|
| Control of emissions of HFC-23 generated in the production of HCFC-22 at Frío Industrias Argentinas | UNIDO (lead) | 87 <sup>th</sup> | 0.1 kg of HFC-23 per 100 kg of HCFC-22 produced by 2022* |

\* The project was approved on the understanding that the Government of Argentina would inter alia ensure that, by 1 January 2022 and thereafter, emissions of HFC-23 by-product from the HCFC-22 production line were destroyed in compliance with the Montreal Protocol and that emissions from the line were at or below 0.1 kg of HFC-23 emissions per 100 kg of HCFC-22 produced.

|                                               |            |                   |
|-----------------------------------------------|------------|-------------------|
| (II) LATEST ARTICLE 7 DATA (Annex C, Group I) | Year: 2024 | 158.45 ODP tonnes |
|-----------------------------------------------|------------|-------------------|

| (III) VERIFIED PRODUCTION DATA (mt) | Year: 2024 |
|-------------------------------------|------------|
| Chemical                            | Total      |
| HCFC-22 production                  | 1,818.76   |
| HFC-23 generation                   | 58.55      |
| HFC-23 emissions                    | 0.00       |

| (V) ENDORSED BUSINESS PLAN | 2025   | 2026    | 2027    | Total   |
|----------------------------|--------|---------|---------|---------|
| UNIDO Funding (US \$)      | 13,650 | 120,650 | 108,983 | 243,283 |

| (VI) PROJECT DATA                                                                                                   |       |               | 2021      | 2022-2023 | 2024*     | 2025*   | 2026    | 2027    | 2028    | 2029    | 2030    | Total     |
|---------------------------------------------------------------------------------------------------------------------|-------|---------------|-----------|-----------|-----------|---------|---------|---------|---------|---------|---------|-----------|
| Maximum allowable emissions of Annex F, Group II substances per 100 kg of Annex C, Group I substances produced (kg) |       |               | n/a       | 0.10      | 0.10      | 0.10    | 0.10    | 0.10    | 0.10    | 0.10    | 0.10    | n/a       |
| Funding agreed in principle (US \$)                                                                                 | UNIDO | Project costs | 1,527,851 | -         | **112,757 | 112,757 | 101,853 | 101,853 | 101,853 | 101,853 | 101,853 | 2,262,630 |
|                                                                                                                     |       | Support costs | 106,950   | -         | **7,893   | 7,893   | 7,130   | 7,130   | 7,130   | 7,129   | 7,129   | 158,384   |
| Funds approved by ExCom (US \$)                                                                                     |       | Project costs | 1,527,851 | -         |           |         |         |         |         |         |         | 1,527,851 |
|                                                                                                                     |       | Support costs | 106,950   | -         |           |         |         |         |         |         |         | 106,950   |
| Total funds recommended for approval at this meeting (US \$)                                                        |       | Project costs |           |           |           | 125,514 |         |         |         |         |         | 125,514   |
|                                                                                                                     |       | Support costs |           |           |           | 8,786   |         |         |         |         |         | 8,786     |

\* Recommended for approval at the present meeting

\*\* A reduction of US \$100,000, plus agency support costs of US \$7,000, will be applied to the second tranche (decision 92/31(b)(iii))

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

## PROJECT DESCRIPTION

46. On behalf of the Government of Argentina, UNIDO as the designated implementing agency has submitted a request for funding for the second and third tranches of the project for the control of emissions of HFC-23 generated in the production of HCFC-22 at Frio Industrias Argentinas (FIASA) in the amount of US \$125,514, plus agency support costs of US \$8,786.<sup>10</sup> The submission includes a progress report on the implementation of the first tranche, the verification report on HCFC-22 production and HFC-23 by-product emissions for 2023 and 2024, and the tranche implementation plan for 2025 to 2026.

### Report on HCFC-22 production and HFC-23 by-product generated and emitted

47. As confirmed by the verification report, the Government of Argentina reported a total of 1,818.76 metric tonnes (mt) of HCFC-22 produced in 2024, with 58.55 mt of HFC-23 by-product generated and 0.00 mt of HFC-23 by-product emitted. The 2022-2024 and preliminary 2025 production data is shown in table 1.

**Table 1. HCFC-22 production and HFC-23 generated, destroyed, and emitted at FIASA (mt)\***

| Component                               | 2022     | 2023     | 2024     | 1 January 2025 to 28 September 2025 |
|-----------------------------------------|----------|----------|----------|-------------------------------------|
| HCFC-22 produced                        | 1,311.09 | 1,699.81 | 1,818.76 | 541.81                              |
| HFC-23 generated                        | 42.05    | 54.44    | 58.55    | 17.36                               |
| By-product generation rate $w^{**}$ (%) | 3.21     | 3.20     | 3.22     | 3.20                                |
| HFC-23 destroyed                        | 0.00     | 58.27    | 69.45    | 27.37                               |
| HFC-23 emitted                          | 17.31    | 0.00     | 0.00     | 0.00                                |

\* Data sources: Article 7 (2022), verification report (2023 and 2024), and preliminary data (1 January 2025 to 28 September 2025).

\*\* By-product generation rate  $w$  = HFC-23 generated/HCFC-22 produced.

48. Gas chromatography (GC) analyses of the vented gases showed concentrations consistently below the detection limit of the GC (1.14 parts per million (ppm)), indicating negligible emissions. The average annual HFC-23 to HCFC-22 ratio for 2022 to 2024 was below the historic average HFC-23 by-product generation rate of 3.24 per cent (3.21 per cent for 2022, 3.20 per cent for 2023, and 3.22 per cent for 2024).

49. As of May 2022, all HFC-23 produced has been stored in the cryogenic tank, and no HFC-23 by-product has been emitted to the atmosphere beyond those in line with the destruction and removal efficiency (DRE) of the incinerator (99.99 per cent), which results in concentrations below the GC detection limit. Data is not collected on possible fugitive emissions. From 2022 to 2024, FIASA did not sell any HFC-23, either pure or in a blend.

### *Verification report*

50. The Government of Argentina reported HCFC production data under the 2024 country programme (CP) implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol and that in the verification report. For 2023, Argentina reported producing 1,669.81 mt of HCFC-22 under both its CP and Article 7 reports, while the verified production for that year was 1,699.80 mt (i.e., a difference of 29.99 mt); the country will submit corrected CP and Article 7 reports for that year. The verification report otherwise confirmed that the reported figures for 2023 and 2024, shown in table 1 above, are a reliable and accurate representation of the total HCFC-22 production and HFC-23 by-product generation and destruction that occurred at FIASA in 2023 and 2024.

<sup>10</sup> As per the letter of 24 October 2025 from the Ministry of Foreign Affairs, International Trade and Worship of Argentina to UNIDO. The requested funding is for the combined second and third tranches after deducting the US \$100,000 penalty specified in decision 92/31(b)(iii).

51. The verification report also included detailed weekly information on HCFC-22 production, HFC-23 by-product generated, destroyed, and stored. In 2023, the by-product generation rate ranged from 3.08 to 3.42 per cent, and in 2024, from 2.79 to 3.64 per cent except for a six-day period where the recorded value was 11.75 per cent as discussed in paragraph 60 below. The verification concluded that the enterprise was in compliance with the commitments established under Argentina's obligations and the Executive Committee guidelines for the Montreal Protocol regarding HCFC-22 production monitoring for 2023 and 2024.

#### Progress report on the implementation of the first tranche

52. As reported to the 90<sup>th</sup> to 93<sup>rd</sup> meetings, FIASA experienced delays in the refurbishment of the incinerator and temporarily vented HFC-23 to the atmosphere in early 2022, followed by a temporary stop in HCFC-22 production; HCFC-22 production became intermittent and then increased from November to January 2023, aligning with the Argentine summer and increased demand; and all HFC-23 produced since May 2022 had been stored in the cryogenic tank.<sup>11</sup> During the 93<sup>rd</sup> meeting, UNIDO reported that the refurbishment of the incinerator had been completed but regular maintenance was still under way and the incinerator, which did not operate continuously, was expected to be operational within a week.<sup>12</sup>

53. The incinerator resumed operation in December 2023 and continued to destroy HFC-23 by-product through 2024. From May 2022 to December 2024, all HFC-23 by-product emissions were stored or destroyed, and none were vented to the atmosphere. As of 31 December 2024, a total of 10.01 mt of HFC-23 by-product was stored in the cryogenic storage tank. FIASA further reported destroying a total of 27.37 mt of HFC-23 by-product between 1 January 2025 and 28 September 2025, which included all HFC-23 by-product stored as of 31 December 2024 and all the HFC-23 by-product generated between 1 January and 28 September 2025.

54. FIASA staff regularly monitored the performance of the incinerator and completed maintenance and adjustments as needed, with emissions monitoring carried out weekly. Controlled shutdowns of the incinerator occurred during holidays, power outages, maintenance, and sampling, and from February to May 2024, minor adjustments were made to the incinerator such as valve cleanings and flowmeter and controller calibrations.

#### *Project implementation and monitoring*

55. Of the US \$80,000 allocated to monitoring, reporting and verification in 2022 and 2023, none has yet been disbursed. A payment of US \$45,086 is committed for the 2023-2024 verification report.

#### Level of fund disbursement

56. As of September 2025, of the US \$1,527,851 approved under the first tranche, US \$1,316,348 (86 per cent) had been disbursed for the refurbishment of the incinerator. The balance of US \$211,503 is expected to be disbursed in 2025 and 2026.

#### Implementation plan for the second and third tranche

57. The following activities will be implemented between December 2025 and December 2026:

- (a) Destruction of HFC-23 by-product from the production of HCFC-22 at FIASA in 2024 and 2025 (incremental operating costs (IOCs)); destruction of HFC-23 by-product is anticipated to be 42.13 mt in 2025 and in 2026 (US \$178,808);

<sup>11</sup> Documents UNEP/OzL.Pro/ExCom/90/9 (paragraphs 129-142), UNEP/OzL.Pro/ExCom/91/18 (paragraphs 91-99), UNEP/OzL.Pro/ExCom/92/9 (paragraphs 191-198) and UNEP/OzL.Pro/ExCom/93/21 (paragraphs 37-48)

<sup>12</sup> Paragraphs 99-101 of document UNEP/OzL.Pro/ExCom/93/105.

- (b) Monitoring, assessment, and training (US \$20,000); and
- (c) Verification of destruction, including an independent verification report (US \$26,706).

## SECRETARIAT'S COMMENTS AND RECOMMENDATION

### COMMENTS

#### Report on HCFC-22 production and HFC-23 by-product generated and emitted

##### *Verification report*

58. The verification report did not compare the verified data with that reported under Article 7 and in the country's CP data reports. UNIDO will include that comparison in the terms of reference for future verification reports.

59. The Secretariat observed from the verification report that FIASA's plant did not operate continuously. Regular shutdowns occur during the two main maintenance periods (January and June) and due to frequent partial operations instead of 24-hour production. These interruptions lead to inefficiencies and fluctuations in the consumption of the raw materials used, anhydrous hydrofluoric acid and chloroform. In some cases, these variations can reach 10 to 15 per cent compared to the annual average. UNIDO confirmed that successive plant startups and shutdowns resulted in variability in the raw material consumption and use ratios for HCFC-22 production since the plant must reach steady-state conditions. While this variability is expected, efforts are underway to increase the efficiency of this process.

60. FIASA managed its production of HCFC-22 in such a manner as to ensure the average by-product generation rate remained below the historic average HFC-23 by-product generation rate of 3.24 per cent; however, the by-product generation rate varied considerably, and even included a period from 28 October to 3 November 2024 when the by-product generation rate was 11.75 per cent. UNIDO explained that variability in the by-product generation rate was inherent to FIASA's HCFC-22 production process and a result of variations in process conditions such as temperature and pressure,<sup>13</sup> and noted that if reductions on this variability were to be pursued, it could require significant and costly upgrades to temperature and pressure control devices and might not meaningfully decrease the HFC-23 generation rate. The reason the by-product generation rate appeared unusually high (11.75 per cent) for approximately a one-week period was because the cryogenic tank's measuring instrument had been under-calibrated for the previous three weeks (during which time the calculated by-product generation rate would erroneously be close to zero), causing the entire amount generated during this four-week period to be reported only in this final week.

#### Progress report on the implementation of the first tranche

61. The Secretariat notes with appreciation that since the HFC-23 by-product emissions reported to the 90<sup>th</sup> meeting, FIASA has continued to store HFC-23 by-product in its cryogenic tank and to destroy it, thereby ensuring that the Government meets its commitments reflected in decision 87/52 in the approval of the project as well as reflecting that the Government had taken action in line with decision 90/24(b) to do its utmost to prevent the venting of HFC-23 by-product.

62. Regarding possible fugitive emissions of HFC-23, UNIDO explained that the enterprise did not assess any such possible emissions nor would it be possible to estimate such emissions by measuring the

<sup>13</sup> At the 94<sup>th</sup> meeting, in the context of the project to control and phase-out of HFC-23 emissions in production of HCFC-22 at Quimobásicos, UNIDO explained that process variations were an inevitable aspect of chemical manufacturing, and might include changes in raw material quality, adjustments in production rates to meet demand, small variations in process conditions such as temperature and pressure, and the lifespan and conditioning of the catalyst (UNEP/OzL.Pro/ExCom/94/44).

flowrate and composition of the product stream exiting the reactor and undertaking a mass balance calculation based on the quantity of HFC-23 by-product destroyed. UNIDO clarified that FIASA did not perform direct measurements of either the flow rate or the composition at the reactor outlet due to complexity and cost associated with making such measurements. Moreover, such measurements would be based on sample that represents a snapshot of the composition of the product stream at the time the sample was taken. In contrast, the composition measured in the cryogenic tank is an accumulated value that reflects the average of several days of operation.

63. FIASA ensures destruction of HFC-23 by-product by measuring the composition of the exhaust gas from the incinerator, which was always below the GC detection limit of 1.14 ppm. The Secretariat noted that modern GC instruments were commercially available that have a detection limit orders of magnitude below this detection limit. UNIDO indicated that it was unclear whether such an upgrade would be technically and financially feasible given FIASA's current planning and financial capacity, noting that such instruments cost approximately US \$100,000 and that the current GC was sufficient to allow the country to meet the emission limits specified in its Agreement with the Executive Committee.

64. The incinerator at FIASA can destroy HFC-23 as well as other controlled substances. The Secretariat is aware that incinerators at some HCFC-22 production facilities in other countries have been used to destroy HFC-23 and other controlled substances, including from external sources (i.e., such destruction is provided as a service and generates revenue). Given that FIASA's HCFC-22 production line does not operate continuously, and that the incinerator does not need to operate continuously, particularly given that the onsite cryogenic tank can store HFC-23 by-product, the Secretariat enquired whether FIASA had considered offering such a service (for a fee), which could help ensure the sustainable operation of the incinerator. UNIDO clarified that national and provincial hazardous waste regulations would restrict the transport of such waste controlled substances between provinces and that the costs and requirements needed to offer such a destruction service would be prohibitive.

65. No funding had been disbursed for the training of personnel to operate the incinerator or for monitoring at FIASA.<sup>14</sup> UNIDO explained that, as FIASA's HCFC-22 production line did not operate continuously, the enterprise had decided to maintain a permanent team of trained personnel to operate the incinerator, and to co-finance the training of that personnel. This allowed the country to use the funding allocated for training and monitoring exclusively to implement a reinforced monitoring system, including monthly reporting and review, semi-annual onsite inspection, and for UNIDO to undertake an independent verification.

66. UNIDO confirmed that, in line with decision 87/52(b)(vi), no additional funding from other sources, including HFC-23 credits or offsets, for the control of HFC-23 by-product emissions from FIASA had been either requested or received.

#### Implementation plan for the second and third tranches

##### *Funding requested*

67. As originally submitted, UNIDO requested funding of US \$125,514, plus agency support costs, for the combined second and third tranches, which includes US \$112,757 per tranche and a reduction of US \$100,000 as specified in decision 92/31(b)(iii).<sup>15</sup> However, as funding in any given year would be further reduced according to the table in paragraph 6 of the Agreement, noting the HCFC-22 production

<sup>14</sup> Annex II of document UNEP/OzL.Pro/ExCom/87/53.

<sup>15</sup> To apply a reduction of US \$175,000, plus agency support costs of US \$12,250, for UNIDO, in line with Appendix 7-A of the updated Agreement between the Government of Argentina and the Executive Committee for stage II of the HPMP, as follows: [...] (iii) To the second tranche of the Agreement between the Government of Argentina and the Executive Committee for the control of emissions of HFC-23 generated in the production of HCFC-22 at FIASA, in the amount of US \$100,000, plus agency support costs of US \$7,000, for UNIDO.

and HFC-23 by-product generation, destruction, and emission data for 2022 to 2024, the maximum quantity of HFC-23 by-product eligible for IOCs (for destruction) in those years would be reduced, resulting in a combined tranche of US \$41,809, plus agency support costs.

68. The Secretariat noted, however, that in line with paragraph 8 of the Agreement, and based on HCFC-22 production levels at the enterprise, the country could request funding above that specified in Appendix 1-A for a subsequent year to destroy HFC-23 by-product generated from production of HCFC-22 in line with decision 87/52(b)(iii), on the understanding that any such requests would be for individual consideration by the Executive Committee, and as long as the conditions specified in paragraph 8<sup>16</sup> are met, subject to the circumstances described in paragraph 7 of the Agreement. The conditions specified in subparagraphs 8(a) and (b) are met, and the Secretariat will continue monitoring that the conditions in subparagraph 8(c) continue to be met through the end of the project. Activities and funding for the second and third tranches were therefore agreed at US \$125,514 as submitted.

69. After accounting for the 17.31 mt of HFC-23 by-product vented to the atmosphere in 2022, and the 127.72 mt of HFC-23 by-product destroyed in the 2022-2024 period, the remaining HFC-23 by-product for which funding can be requested at future meetings for destruction through the completion of the Agreement is 215,348 kg.

#### Gender policy implementation

70. In line with national policies, the implementation of the project promotes equal opportunities for all personnel, ensuring a safe and inclusive work environment. FIASA complies with national labour and non-discrimination legislation, which supports equal rights and treatment for all workers. At the institutional level, Argentina applies an inclusive approach to the implementation of activities under the Multilateral Fund, ensuring that all social groups have the same opportunities to participate and contribute to project objectives.

#### Sustainability of the HCFC phase-out and assessment of risks

71. The sustainability of HFC-23 emission controls will be sustained, and the risk of HFC-23 emissions reduced, through the continued commitment of the Government and FIASA to regularly monitor production and destruction activities and maintain the performance of equipment, including the cryogenic storage tank and incinerator.

#### Conclusion

72. Following the delays in the refurbishment of the incinerator and temporary venting of HFC-23 to the atmosphere in early 2022, reported to the 90<sup>th</sup> meeting, FIASA stored all captured HFC-23 by-product in its cryogenic tank and completed refurbishment of the incinerator. The Government and FIASA took action to comply with its project and reporting commitments, and no further emissions of HFC-23 by-product were emitted to the atmosphere beyond those in line with the DRE of the incinerator, ensuring that emissions of HFC-23 by-product from the HCFC-22 production line were destroyed in compliance with the Montreal Protocol and that emissions from the line were at or below 0.1 kg of HFC-23 emissions per 100 kg of HCFC-22 produced.

73. FIASA has continued to manage its production and maintain its incinerator in such a manner as to ensure the average annual by-product generation rate from 2022 to 2024 remained below the historic average HFC-23 by-product generation rate of 3.24 per cent. Monitoring of gases vented from the incinerator showed negligible HFC-23 by-product emissions (less than 1.14 ppm). Verifications confirmed

---

<sup>16</sup> (a) The request is prior to the date of completion of the Agreement; (b) The by-product generation rate in that year is less than or equal to 3.24 per cent; and (c) The total quantity of HFC-23 by-product for which funding is requested for destruction during the project is equal to or less than 360,378 kg.

the amount of HCFC-22 produced and HFC-23 generated, destroyed, and emitted at FIASA for 2023 and 2024. Disbursements under the first tranche are at 86 per cent.

## RECOMMENDATION

74. The Executive Committee may wish to consider:

- (a) Noting the progress report on the implementation of the first tranche of the project for the control of emissions of HFC-23 generated in the production of HCFC-22 at Frío Industrias Argentinas (FIASA); and
  - (b) Approving the second and third tranches of the project for the control of emissions of HFC-23 generated in the production of HCFC-22 at FIASA, in the amount of US \$125,514, plus agency support costs of US \$8,786, for UNIDO, on the understanding that, in line with subparagraph 8(c) of the Agreement between the Government of Argentina and the Executive Committee, the remaining HFC-23 by-product for which funding could be requested at future meetings for destruction through the completion of the Agreement is 215,348 kg.
-