



**United Nations
Environment
Programme**

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/96/53

5 May 2025

ORIGINAL: ENGLISH



EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-sixth Meeting
Montreal, 26-30 May 2025
Item 9(d) of the provisional agenda¹

PROJECT PROPOSAL: SRI LANKA

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

Phase-down

- | | | |
|---|---------------|--------------------------|
| <ul style="list-style-type: none">• Kigali HFC implementation plan (stage I, first tranche) | UNDP and UNEP | Individual consideration |
|---|---------------|--------------------------|

¹ UNEP/OzL.Pro/ExCom/96/1

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Sri Lanka

PROJECT TITLE	AGENCY
Kigali HFC implementation plan (stage I)	UNDP (lead), UNEP

LATEST ARTICLE 7 DATA (Annex F)	Year: 2023	690.73 mt	1,156,405 CO ₂ -eq tonnes
--	-------------------	-----------	--------------------------------------

SECTORAL HFC CONSUMPTION DATA (CO ₂ -eq tonnes) AND ACTIVITIES									
	Aerosol	Foam	Fire-fighting	Air-conditioning and refrigeration				Solvent	Other
				Manufacturing			Servicing		
				Refrigeration	AC	Other			
Latest CP report (2024)				44,926	9,997		971,613		75,524
KIP stage I activities as agreed (Y/N)				Y	Y		Y		

AVERAGE 2020–2022 HFC CONSUMPTION IN SERVICING	440.09 mt	845,467 CO ₂ -eq tonnes
---	-----------	------------------------------------

BASELINE CONSUMPTION DATA (CO ₂ -eq tonnes)	2020	2021	2022	Average 2020-2022
HFC annual consumption	683,132	947,951	1,085,024	905,369
HCFC baseline (65%)				264,865
HFC baseline				1,170,234

HFC CONSUMPTION ELIGIBLE FOR FUNDING	
Starting point for sustained aggregate reductions	TBD
Previously approved HFC phase-down investment projects	No
Aggregate reductions from previously approved projects (CO ₂ -eq tonnes)	n/a

PROJECT DATA AS AGREED		2025*	2026	2027	2028	2029	Total
Consumption (CO ₂ -eq tonnes)	Montreal Protocol limits	1,170,234	1,170,234	1,170,234	1,170,234	1,053,211	n/a
	Maximum allowable	1,170,234	1,170,234	1,170,234	1,170,234	1,053,211	n/a
	Reduction from baseline (%)	0	0	0	0	10	n/a
Amounts recommended in principle (US \$)	UNDP	Project costs	201,211	0	102,814	0	304,025
		Support costs	14,085	0	7,197	0	21,282
	UNEP	Project costs	46,000	0	69,372	0	115,372
		Support costs	5,980	0	9,018	0	14,998
	Total project costs		247,211	0	172,186	0	419,397
	Total support costs		20,065	0	16,215	0	36,280
	Total funds		267,276	0	188,401	0	455,677

* Recommended for approval at the present meeting

Reduction from remaining consumption eligible for funding in stage I (CO ₂ -eq tonnes)	117,023
---	---------

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

PROJECT DESCRIPTION

1. The present document contains the following sections:
 - I. Summary of the proposal as submitted
 - II. Background: Status of implementation of the HCFC phase-out management plan and previous HFC-related activities
 - III. HFC consumption overview: HFC consumption levels, trends, and consumption by sector
 - IV. Stage I of the Kigali HFC implementation plan, as submitted: Regulatory framework, phase-down strategy, total stage cost, and implementation plan for the first tranche
 - V. Secretariat's comments, including the agreed cost of activities
 - VI. Recommendation

I. Summary of the proposal as submitted

2. On behalf of the Government of Sri Lanka, UNDP as the lead implementing agency has submitted a request for stage I of the Kigali HFC implementation plan (KIP), at a total cost of US \$709,340, consisting of US \$510,387, plus agency support costs of US \$35,727 for UNDP and US \$144,448, plus agency support costs of US \$18,778 for UNEP, as originally submitted.²

3. The implementation of stage I of the KIP will assist the Government of Sri Lanka in meeting the target of 10 per cent reduction from its HFC baseline consumption by 1 January 2029.

4. The first tranche of stage I of the KIP being requested at this meeting amounts to US \$483,095, consisting of US \$359,887, plus agency support costs of US \$25,192 for UNDP and US \$86,740, plus agency support costs of US \$11,276 for UNEP, as originally submitted, for the period of June 2025 to June 2028.

II. Background

Status of implementation of the HCFC phase-out management plan

5. Table 1 presents information on the HCFC phase-out management plan (HPMP) in Sri Lanka as of April 2025.

Table 1. HPMP implementation status for Sri Lanka

	Stage I	Stage II
Meeting when HPMP was approved/updated	62 nd /70 th	86 th /94 th
Reduction from baseline	35% by 2020	100% by 2030
Total project cost (US \$)	647,866	1,160,000
Date of completion (actual/planned)	31 December 2021	31 December 2031

² As per the letter of 29 January 2025 from the Ministry of Environment of Sri Lanka to UNDP. Stage I of the KIP was previously submitted to the 94th meeting but was subsequently withdrawn.

Status of implementation of previous HFC-related activities

6. Table 2 presents an overview of activities implemented in Sri Lanka in the context of the Kigali Amendment that have been funded by the Multilateral Fund.

Table 2. Previously approved HFC-related activities in Sri Lanka

Approval meeting	Project title	Implementing agency	Cost (US \$)	Date of completion
74 th	Survey of ODS alternatives	UNEP	35,000	August 2017
81 st	Enabling activities for HFC phase-down	UNEP	150,000	June 2022
94 th	Pilot project to maintain and/or enhance the energy efficiency of replacement technologies and equipment in the context of HFC phase-down (non-investment activities)	UNDP	245,700	May 2027

III. HFC consumption overviewHFC consumption levels

7. Sri Lanka only imports HFCs for use in the air-conditioning (AC), refrigeration, health and industrial manufacturing and refrigeration and air-conditioning (RAC) servicing sectors. The most consumed substances in 2023 were HFC-134a (43.7 per cent of total HFC consumption in CO₂-equivalent (CO₂-eq) tonnes), R-410A (25.6 per cent), R-404A (18.6 per cent), HFC-32 (5.6 per cent), R-507A (3.8 per cent) and other HFCs (2.6 per cent). Table 3 presents the country's HFC consumption as reported to the Ozone Secretariat under Article 7 of the Montreal Protocol and the country's HFC baseline.

Table 3. HFC consumption (2020–2024 Article 7 data) and baseline in Sri Lanka

HFC	GWP	2020	2021	2022	2023	2024*
Metric tonnes (mt)						
HFC-134a	1,430	265.62	279.74	216.08	353.67	404.13
HFC-152a	124	8.76	17.52	17.52	17.52	17.04
HFC-23	14,800	0.00	0.01	0.01	0.01	0.02
HFC-32	675	14.52	27.31	24.02	96.45	66.77
HFC-41	92	0.00	0.01	0.00	0.00	0.00
R-404A	3,922	34.00	73.57	69.44	54.92	50.43
R-407A	2,107	0.00	5.65	0.00	1.72	0.00
R-407C	1,774	10.82	14.95	20.15	13.24	10.25
R-407F	1,825	0.00	0.00	0.57	0.00	0.56
R-410A	2,088	55.38	77.46	110.67	141.95	105.73
R-417A	2,346	0.00	0.00	0.10	0.23	0.49
R-449A	1,396	0.00	0.00	0.00	0.00	0.02
R-507A	3,985	6.10	9.66	54.50	11.02	9.49
R-508B	6,808	0.00	0.01	0.00	0.00	0.00
R-513A	629	0.00	0.00	0.00	0.00	0.01
Total (mt)		395.18	505.89	513.05	690.73	664.94
CO₂-eq tonnes						
HFC-134a	1,430	379,835	400,028	308,999	505,744	577,911
HFC-152a	124	1,086	2,172	2,172	2,172	2,113
HFC-23	14,800	0	133	133	133	266
HFC-32	675	9,798	18,435	16,211	65,104	45,068
HFC-41	92	0	1	0	0	0
R-404A	3,922	133,334	288,496	272,306	215,374	197,784
R-407A	2,107	0	11,905	0	3,632	0
R-407C	1,774	19,191	26,519	35,734	23,488	18,190
R-407F	1,825	0	0	1,040	0	1,024

HFC	GWP	2020	2021	2022	2023	2024*
R-410A	2,088	115,595	161,698	231,020	296,321	220,709
R-417A	2,346	0	0	239	530	1,150
R-449A	1,396	0	0	0	0	32
R-507A	3,985	24,293	38,495	217,169	43,907	37,826
R-508B	6,808	0	68	0	0	0
R-513A	629	0	0	0	0	9
Total (CO₂-eq tonnes)		683,132	947,951	1,085,024	1,156,405	1,102,082
HFC baseline calculation (CO₂-eq tonnes)						
HFC average consumption in 2020–2022			905,369			
HCFC baseline (65%)			264,865			
HFC baseline			1,170,234			

* Country programme data

Country programme implementation report

8. The sectoral HFC consumption data provided by the Government of Sri Lanka in its country programme (CP) implementation report for 2023 is consistent with the data reported under Article 7 of the Montreal Protocol.

HFC consumption trends

9. Consumption of HFCs increased from 2020 to 2023 due to higher servicing needs of RAC equipment in various residential and commercial applications. This rise is attributed to the aging of equipment, leading to higher leakage rates and more frequent breakdowns. The growth in HFC-32 use is mainly due its adoption as a replacement for R-410A. Additionally, very small quantities of HFC-23 are used in testing aerospace equipment. Increased on-site charging of different equipment also contributed to the rise in HFC consumption.³

HFC consumption by sector

10. HFCs are mainly consumed for servicing in different RAC applications (85.3 per cent in mt and 90.9 per cent in CO₂-eq tonnes); the remaining quantities are consumed in manufacturing applications (14.7 per cent in mt and 9.1 per cent in CO₂-eq tonnes).

11. The main manufacturing sectors are residential and commercial air-conditioning (5.3 per cent in mt and 2.2 per cent in CO₂-eq tonnes) using HFC-32 and R-410A, followed by aerosol and metered-dose inhalers (MDIs) (4.9 per in mt and 4.1 per cent in CO₂-eq tonnes) using HFC-134a, as shown in tables 4 and 5.

12. The RAC servicing sector mainly consumes HFC-134a, R-410A, HFC-32, R-404A. Overall, HFCs are mainly consumed for servicing in the residential and commercial AC (38.9 per cent in mt and 37.7 per cent in CO₂-eq tonnes), followed by mobile air-conditioning (MAC) (33.7 per cent in mt and 28.8 per cent in CO₂-eq tonnes), commercial, industrial and transport refrigeration (12.1 per cent in mt and 23.8 per cent in CO₂-eq tonnes), and other subsectors, as shown in tables 4 and 5.

³ If equipment is imported charged, the servicing consumption needs are diluted over the years when equipment requires maintenance.

Table 4. HFC consumption in Sri Lanka by sector in mt (2023)

Sector	HFC-134a	HFC-152a	HFC-32	HFC-23	R-404A	R-407A	R-407C	R-410A	R-417A	R-507A	Total	Share of total (%)
Manufacturing												
Commercial refrigeration	10.41	0.00	0.00	0.00	1.08	0.00	0.00	0.00	0.00	0.52	12.01	1.7
Industrial refrigeration	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	2.00	0.3
Residential AC	0.00	0.00	36.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.03	5.2
Commercial AC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.52	0.1
Aerosol/MDI	33.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.56	4.9
Others (specialized testing application)	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.0
Others (glass)	0.00	17.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.52	2.5
Subtotal for manufacturing	43.97	17.52	36.03	0.01	3.08	0.00	0.00	0.52	0.00	0.52	101.65	14.7
Refrigeration and AC servicing												
Refrigeration subsectors												
Domestic	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.50	0.7
Commercial	5.29	0.00	0.00	0.00	19.29	0.00	0.00	0.00	0.23	0.00	24.80	3.6
Industrial	15.74	0.00	0.00	0.00	24.83	0.00	0.00	0.00	0.00	10.50	51.07	7.4
Transport	0.00	0.00	0.00	0.00	7.72	0.00	0.00	0.00	0.00	0.00	7.72	1.1
Air-conditioning subsectors												
Residential	8.56	0.00	60.42	0.00	0.00	0.00	0.00	79.40	0.00	0.00	148.38	21.5
Mobile	232.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	232.72	33.7
Commercial	42.89	0.00	0.00	0.00	0.00	1.72	13.24	62.04	0.00	0.00	119.89	17.4
Subtotal for servicing	309.69	0.00	60.42	0.00	51.84	1.72	13.24	141.44	0.23	10.50	589.08	85.3
Total	353.66	17.52	96.45	0.01	54.92	1.72	13.24	141.96	0.23	11.02	690.73	100

Table 5. HFC consumption in Sri Lanka by sector in CO₂-eq tonnes (2023)

Sector	HFC-134a	HFC-152a	HFC-32	HFC-23	R-404A	R-407A	R-407C	R-410A	R-417A	R-507A	Total	Share of total (%)
Manufacturing												
Commercial refrigeration	14,886	0	0	0	4,235	0	0	0	0	2,072	21,194	1.8
Industrial refrigeration	0	0	0	0	7,843	0	0	0	0	0	7,843	0.7
Residential AC	0	0	24,320	0	0	0	0	0	0	0	24,320	2.1
Commercial AC	0	0	0	0	0	0	0	1,086	0	0	1,086	0.1
Aerosol/MDI	47,991	0	0	0	0	0	0	0	0	0	47,991	4.1
Others (specialized testing application)	0	0	0	148	0	0	0	0	0	0	148	0.0
Others (glass)	0	2,172	0	0	0	0	0	0	0	0	2,172	0.2
Subtotal for manufacturing	62,877	2,172	24,320	148	12,079	0	0	1,086	0	2,072	104,754	9.1
Refrigeration and AC servicing												
Refrigeration subsectors												
Domestic	6,435	0	0	0	0	0	0	0	0	0	6,435	0.6
Commercial	7,560	0	0	0	75,640	0	0	0	530	0	83,730	7.2

Sector	HFC-134a	HFC-152a	HFC-32	HFC-23	R-404A	R-407A	R-407C	R-410A	R-417A	R-507A	Total	Share of total (%)
Industrial	22,501	0	0	0	97,385	0	0	0	0	41,843	161,729	14.0
Transport	0	0	0	0	30,275	0	0	0	0	0	30,275	2.6
Air-conditioning subsectors												
Residential	12,241	0	40,784	0	0	0	0	165,741	0	0	218,766	18.9
Mobile	332,790	0	0	0	0	0	0	0	0	0	332,790	28.8
Commercial	61,333	0	0	0	0	3,624	23,488	129,504	0	0	217,949	18.8
Subtotal for servicing	442,860	0	40,784	0	203,300	3,624	23,488	295,246	530	41,843	1,051,673	90.9
Total	505,737	2,172	65,104	148	215,378	3,624	23,488	296,331	530	43,915	1,156,427	100

Manufacturing sectors

Domestic refrigeration manufacturing

13. There are three local domestic refrigerator manufacturers which converted, with their own resources, to HC-600a. Hence, since 2022, there is no manufacturing of domestic refrigerators based on HFCs. The local market may also be supplied by imported domestic refrigerators and domestic freezers (high-end models) which usually use HC-600a.

Commercial, industrial and transport refrigeration manufacturing and assembling

14. There are at least 13 enterprises manufacturing and/or assembling commercial and industrial refrigeration HFC-based equipment and one enterprise manufacturing refrigerated vans and light-duty trucks, large trucks, and containers units. The main HFCs used are R-404A and HFC-134a. Small quantities of R-507A are also used in commercial refrigeration.

15. Sri Lanka exports stand-alone types of beverage coolers to India. Some manufacturers are transitioning from HFCs to R-290 refrigerants to meet export market requirements. Although HFC-134a remains the predominant refrigerant in the commercial refrigeration industry, the sector's growth was disrupted by the post-COVID pandemic crisis and the economic recession in 2020 and 2021. However, HFC-134a consumption saw a significant growth in 2022 and 2023 due to the industry's rebound during these years.

Manufacturing of metered-dosed inhalers

16. One local manufacturer uses HFC-134a as a propellant for MDIs. Established in 2019, the enterprise manufactured limited quantities of MDIs from 2020 to 2022. However, in 2023, it started full-scale manufacturing operations, consuming 33.56 mt of HFC-134a. Future consumption is expected to grow due to increasing local demand and expanding markets in regions such as Central Asia and Africa.

Manufacturing of glasses

17. One indigenous enterprise, with shareholders being Sri Lanka and India, uses HFC-152a in the production of soda-lime glasses, as an etching chemical treatment to improve the glass' mechanical and optical properties, prevent erosion, and treat openings to avoid leaks and contamination. In 2023, the enterprise used 17.52 mt (2,172 CO₂-eq tonnes) for this manufacturing process.

Special use of HFC-23

18. Sri Lanka reported the use of approximately 10 kg of HFC-23 by one local enterprise, Hitec Sensor Pvt., specializing in manufacturing and testing aero-spatial (sensitive) equipment. This enterprise operates

11 highly sensitive testing chambers that require ultra-low temperatures (-80° Celsius) and must adhere to specifications provided by the equipment supplier. The demand for these chambers is expected to grow in line with the increasing demand for the equipment.

Mobile air-conditioning manufacturing

19. One locally owned enterprise, Abans Manufacturing Pvt., established in early 2020, assembles private cars and charge their AC system with HFC-134a under the license of Hyundai. Sri Lanka also assembles buses locally. However, due to the economic crisis following the prohibition of car imports, the assembly line remained idle until December 2023, with no HFC-134a consumption reported in this sector. The consumption of HFC-134a is expected to resume in 2024.

Manufacturing of commercial and residential room air-conditioning equipment

20. All the demand for AC was met by imports of AC units up to 2022. However, in 2023, with the lifting of fiscal and financial restrictions over components, two new local manufacturers established manufacturing lines for room AC equipment using HFC-32.

21. The HFC survey identified two medium-sized manufacturers of room split air conditioners as follows:

- (a) AB Manufacturing Private Limited, part of the Abans Group, has been manufacturing residential AC equipment since 2022. The equipment, licensed by LG Electronics, has a capacity of up to 24,000 BTU/hour and uses HFC-32. In 2023, the enterprise manufactured 20,200 split air conditioners, consuming 28 mt of HFC-32. However, the enterprise continues to manufacture R-410A-based light commercial air conditioners with a capacity of 36,000 BTU/hour on demand.
- (b) Telesonic Lanka Private Limited (“Telesonic”), a fully domestically owned enterprise, has been manufacturing residential air conditioners since 2015. The enterprise’s business also includes importing finished light commercial and commercial AC units, including variable refrigerant flow (VRF) and small chillers. Since 2021, the local manufacturing line has adapted to manufacture residential AC units with a capacity of up to 24,000 BTU/hour under the license of Midea. While most of the air conditioners manufactured by this enterprise use HFC-32 as a refrigerant, a limited quantity of R-410A-based units is manufactured to meet local demand. In 2023, the enterprise consumed 8.03 mt of HFC-32 and 0.52 mt of R-410A.

Refrigeration and air-conditioning servicing sector

22. There are approximately 11,700 technicians and 3,043 workshops consuming HFCs in Sri Lanka. Approximately 8,500 technicians and 85 per cent of workshops service stationary RAC equipment, while some 3,200 technicians and 20 per cent of workshops service MAC units. There is also an estimate of 1,500 technicians operating independently (which include informal, seasonal and technicians that may provide services both to stationery and MAC units). From the UNEP survey of 50 servicing workshops, all the enterprises are involved in the repair and maintenance of different RAC equipment.

23. During the survey, it was noted that a few large-scale RAC servicing establishments had extended their business for installation and servicing of commercial/industrial refrigeration as well as servicing of transport refrigeration systems. Detailed estimates of consumption of HFCs in these applications are not available.

Domestic refrigeration servicing

24. Sri Lanka has approximately 5.1 million households and the domestic refrigeration penetration is estimated at 60 per cent (3.06 million refrigerators) according to the Department of Census and Statistics Data (2022). However, the introduction of HC-600a-based units that started in 2014 allowed the rapid adoption of new units either replacing older CFC-12-based units or being the preferred option for buyers acquiring their first refrigerator.

25. It is estimated that installed stocks of HFC-134a-based units represent about 44 per cent of the total refrigerators in use. Given that there are no new HFC-134a-based units being introduced, the demand for HFCs for this servicing application is expected to grow at a negligible rate.

Commercial, industrial and transport refrigeration servicing and installation

26. Commercial, industrial and transport refrigeration equipment are imported and to a limited extent, locally manufactured. Commercial refrigeration applications include equipment used in convenience/food/grocery stores, supermarkets, factories and small industries, non-food retail, education, office building, hospitals, and hotels. R-404A is the dominant refrigerant, followed by HFC-134a. The demand for R-404A-based equipment is expected to grow faster than that for HFC-134a-based equipment.

27. This sector is also witnessing the limited introduction of HC-290 and HC-600a in applications where charges can be kept below 250 grams per unit (such as reach-in freezers, bottle coolers, standalone displays, vending machines and chest freezers). However, condensing units and larger applications are still based on non-flammable refrigerants.

28. Industrial refrigeration applications include equipment for cold rooms (such as large condensing units or central racks), blast freezers, milk coolers and process chillers, fisheries storage rooms, and ice plants. The refrigerants used are HCFC-22, HFC-134a, R-404A, R-507A and, to a lesser extent and in areas where zoning and safety allows, R-717 (ammonia). The survey report also indicates that the use of HFC-based equipment would experience a rapid growth given their ease of use and lower costs.

29. According to the records of the Department of Fisheries and Aquatic Resources, there are approximately 36 freezer vessels operated under four enterprises for harvesting fish. All these freezer vessels have cold rooms and/or blast freezers, and the majority operate on HCFC-22 and R-404A.

30. Cold chain transportation includes refrigerated vans, trucks, and containers (reefers) equipped with refrigeration units. According to sector information, it is estimated that over 1,500 freezer trucks are in operation in Sri Lanka. Approximately 10 per cent of these trucks still use HCFC-22, while the rest operate with either HFC-134a or R-404A.

Residential and commercial air-conditioning servicing

31. Air-conditioning systems are used in residential and commercial comfort cooling, as well as in food stores/groceries, supermarkets, industrial facilities, non-food retail shops, office buildings, and various other facilities. The residential room AC sector includes window and split-type equipment. Survey data revealed that window air conditioners make up only about 10 per cent of the market and are based on HCFC-22, while split-type AC units use HFCs.

32. Due to awareness activities during the implementation of the HPMP on improved energy efficiency performance of this equipment, and the awareness of manufacturers, importers, and distributors regarding non-ODS-based energy-efficient air conditioners, the split AC market has quickly shifted to use R-410A as the preferred refrigerant. However, with the conversion of major international suppliers to HFC-32, a rapid uptake of HFC-32-based units imported into the country has been observed. Market surveys indicate that

the adoption of flammable refrigerant-based air conditioners would depend upon the implementation of capacity-building programmes to support this transition safely.

33. Split air conditioners with large capacities containing R-410A dominate the sector, followed by units containing HFC-32 and R-407C. VRF systems exclusively operate with R-410A.

34. Most large chillers operate with HFC-134a. Large chillers using HCFC-22 and HCFC-123 are also found in hotels and the industrial sector. Given the high level of specialization required for the operation and servicing of chillers, the relatively new installed base (i.e., less than seven years in most cases) and tightness controls, the level of leakage of HFC-based chillers is low.

Mobile air-conditioning servicing

35. The MAC servicing sector using HFC-134a is one of the country's largest HFC-consuming sectors. It is important to note that many used cars may be imported for local sale without charge; hence, the demand for HFC-134a in the servicing sector also includes the "initial charge" of imported used cars.

36. According to the Ministry of Transport and Highways, Sri Lanka has 1.85 million of passenger cars, buses and trucks, some of which have AC. A large majority of motor vehicles (99.7 per cent) are fitted with MAC systems operating with HFC-134a. With the improvement of the country's economic conditions, the import of new and used cars is expected to resume, leading to growth in the stocks of air-conditioned cars and, consequently, a high demand for HFC-134a in this application.

37. It is estimated that there may be 300 to 400 cars operating with HFO-1234yf, but data is not readily available.

Local installation and assembly subsector

38. Sri Lanka experienced an expansion of local assembly and installation in various RAC applications in 2021 and 2022 due to import restrictions on finished/charged RAC equipment. Additionally, in 2023, the demand for HFCs continued to increase due to the greater need for servicing of RAC equipment, an increase in the import and sales of cooling equipment (including refrigerant charging for imported equipment with leaked refrigerants, such as cars with MAC units), and growth in the manufacturing of MDIs and HFC-32-based air conditioners.

IV. Stage I of the Kigali HFC implementation plan as submitted

Institutional, policy and regulatory framework

39. Sri Lanka established a licensing system for the import of HFCs in 2020. The quota system was developed and approved by the Cabinet and is under enforcement since 2024.

40. The national ozone unit (NOU) has the overall responsibility for the management and implementation of the Montreal Protocol activities and the fulfilment of the country's obligations under its Agreement with the Executive Committee with respect to all activities undertaken.

41. For the KIP, the project steering committee is expanded to include the Ministry of Health, the Ministry of Labour, the Ministry of Power, the Ministry of Defence, and the Climate Change Secretariat. The committee is chaired by the Secretary of the Ministry of Environment. The current institutional arrangements are the key main agencies that will play an essential role in the implementation of the Montreal Protocol activities.

Phase-down strategy for stage I of the Kigali HFC implementation plan

Overarching strategy

42. The phase-down strategy for stage I is multi-faceted, consisting of an approach of portfolios of interventions that, integrated, can provide the tools for Sri Lanka to sustain the 2024 freeze and achieve the 2029 10 per cent reduction targets.

43. The consumption of HFCs in various applications is expected to increase due to the country's economic recovery. Controlling this growth in HFC use will largely depend on the rate of adoption of lower-/low-GWP alternative technologies in different RAC applications, particularly residential AC, commercial refrigeration, and MAC. In view of this, stage I of the KIP aims at supporting the conversion of manufacturing enterprises that use HFCs; strengthening the national regulatory frameworks, including the quota system, to improve HFC control and sustain phase-down; improving capacities of training centres that deliver training to MAC and room AC technicians to capacitate them on HFC leakage containment and test and deploy alternative technologies to HFCs; improving capacities of technicians by delivering new MAC trainings (after years of lacking assistance in this sector) and widening the outreach of the AC sector by providing training to technicians not covered under stages I and II of the HPMP; implementing a pilot project targeting the dairy sector to demonstrate safe operations of low-GWP alternative technologies and avoid R-404A-based equipment in those applications; and delivering awareness and outreach activities to sensitize the sector, identify barriers to the adoption of low-/lower-GWP refrigerant based technologies and disseminate information on low-GWP alternative technologies.

Proposed reductions

44. Based on inputs received from the industry during the KIP survey, including the growth in consumption due to local charging of different equipment, HFC consumption for 2024 to 2029 is estimated to grow at 6.5 per cent per annum. At this growth rate, HFC consumption from 2026 would exceed the Montreal Protocol targets in the absence of any intervention. Stage I of the KIP is proposed to control the growth of HFC consumption to achieve 2029 Montreal Protocol control limits. This will result in a reduction of HFC consumption by 117,023 CO₂-eq tonnes from the freeze levels. Table 6 presents the Montreal Protocol limits, consumption forecast and the proposed HFC consumption reductions for 2025 to 2029.

Table 6. HFC consumption forecast under the unconstrained scenario, Montreal Protocol limits, and proposed HFC reductions under stage I (CO₂-eq tonnes)

	2025	2026	2027	2028	2029
HFC consumption forecast at an annual growth rate of 6.5%*	1,156,405	1,231,571	1,311,623	1,396,878	1,487,675
Montreal Protocol HFC consumption limits	1,170,234	1,170,234	1,170,234	1,170,234	1,053,211
HFC consumption levels proposed under the KIP	1,170,234	1,170,234	1,170,234	1,170,234	1,053,211
Proposed reductions from the HFC consumption baseline (%)	0	0	0	0	10

* Calculated based on the maximum annual Gross Domestic Product growth estimated between 2015 and 2020.

Proposed activities

Manufacturing sector

45. The manufacturing sector plan will eliminate the consumption of R-410A in the manufacturing of AC equipment and HFCs in self-contained commercial refrigeration equipment. The plan includes the following:

- (a) Phase-out of consumption of 0.52 mt (1,086 CO₂-eq tonnes) of R-410A in AC manufacturing in Telesonic. The funding request is mainly related to upgrading safety infrastructure (e.g., industrial leak detectors, explosion proof vacuum pump) for manufacturing HFC-32-based air conditioners in the country. The funding requested for the conversion project as submitted is US \$9,318; and
- (b) Phase-out of consumption of 3.64 mt (8,389 CO₂-eq tonnes) of HFC-134a, R-404A and R-507A in manufacturing self-contained commercial refrigeration equipment. Through a group project, the plan will assist seven micro-, small- and medium-sized enterprises (one of which has ownership in the United Arab Emirates), which produce stand-alone commercial refrigerators (such as standalone displays, reach-in freezers, chest freezers and small condensing units) which can be safely converted to R-290 refrigerants within the relevant charge limit of 250 grams per unit. The funding requested for commercial refrigeration manufacturing conversion as submitted is US \$150,150.

46. This plan, with a total requested funding of US \$159,468, aims to allow end users to access low-GWP alternative technologies and reduce the demand for servicing using HFCs. The entire funding is requested under the first tranche of stage I of the KIP.

Servicing sector

47. Activities in the servicing sector proposed for implementation under stage I and the first tranche and their cost breakdown are presented in table 7.

Table 7. Servicing sector activities and their costs in stage I and the first tranche of the KIP for Sri Lanka as submitted

Activity	Agency	Cost (US \$)	
		Stage	First tranche
<i>Strengthening of the policy, institutional and strategic frameworks:</i> Ban the import, local manufacturing and new installation of HFC-134a-based domestic refrigerators; assessment of the room AC sector supply chain to prepare the country to issue a ban on the import of R-410A-based room air conditioners; market assessment on alternatives and growth trends for the MAC sector to understand the sector's needs and future actions required under the KIP	UNDP	30,000	6,000
<i>Policy, regulations, and enforcement:</i> Conduct a desk study for developing a comprehensive recording and reporting system for importers, distributors, and service providers to identify and address gaps in existing regulations relating to HFCs; develop an integrated module for online reporting and data management covering the HFC supply chain and regulatory agencies, for importers, distributors, and RAC/MAC service providers; provide training to identified NOU staff on operational and maintenance requirements of the new system and processes relating to HFCs to the proper recording and managing of data	UNEP	54,098	37,500
<i>Procurement of equipment:</i> Procurement of six trainer units (one MAC (HFO-1234yf), one HC-600a-based domestic refrigeration, and two HFC-32-based and two R-290-based room AC units) for training technicians on the safe use of flammable refrigerants and good service practices	UNDP	91,000	74,000
<i>Capacity building for the room AC servicing sector:</i> Training of 250 servicing sector technicians to improve maintenance and servicing practices and reduce leakages; training of six master trainers in the safe handling of A2L room air conditioners	UNDP	65,000	40,000

Activity	Agency	Cost (US \$)	
		Stage	First tranche
<i>Capacity building for the MAC servicing sector:</i> Develop knowledge materials (handbooks, guidelines, code of practices, infographics, posters) to include specific technologies and alternative refrigerants and codes of good servicing practices, including safety guidelines; training programmes for about 40 MAC technicians, including training of trainers with international experts	UNEP	38,000	22,000
<i>Technical assistance for the introduction of HFC alternatives:</i> Introduce one (HFC-23-free) high-altitude HC/HFO-based test chamber; introduce HFC alternatives through pilot demonstration projects on the use of R-290-based milk chillers for the small-scale dairy sector to demonstrate the benefits of using this technology, including savings in energy consumption, operational aspects relating to installation and maintenance costs; publish and share the results and outcomes of the pilot projects with the targeted sector's stakeholders	UNDP	35,669	20,669
<i>Awareness and outreach:</i> Annual social media campaigns, including development of materials (infographics, videos, apps, posters), targeting the general public to raise awareness on available low-GWP and energy-efficient equipment to promote ozone and climate friendly choices; at least two Ozone2Climate events to raise awareness among building managers, refrigeration engineers, and architects, in collaboration with the Refrigerant and Air-conditioning Engineers' Chapter of the Institute of Engineers, the Energy Managers Association, and the Sri Lankan Chapter of the American Society of Heating, Refrigerating and Air-conditioning Engineers	UNEP	52,350	27,240
Project coordination and monitoring	UNDP	129,250	59,750
Subtotal for UNDP		350,919	200,419
Subtotal for UNEP		144,448	86,740
Total		495,367	287,159

Project implementation, coordination and monitoring

48. The NOU, as an implementing partner (IP), will be responsible for planning, implementing, and monitoring all approved activities under stage I of the KIP, in close coordination with UNDP. UNDP will manage and coordinate activities to ensure proper reporting lines and the deployment of joint activities. A project steering committee (project board) will be created to review performance based on established monitoring and evaluation metrics and resolve high-level implementation issues to ensure quality delivery of results. The budget of US \$129,250 includes project staff (US \$96,250), operational costs (US \$3,000), implementation and monitoring (US \$14,000), and ODS verification (US \$16,000).

Total cost of stage I of the Kigali HFC implementation plan

49. The budget for stage I has been proposed at US \$654,835. The costs of activities in the refrigeration servicing sector have been proposed in line with decision 92/37.

50. The proposed activities and cost of stage I of the KIP are summarized in table 8.

Table 8. Proposed cost of activities to be implemented in stage I of the KIP for Sri Lanka (US \$)

Activity	Cost (US \$)					
	Stage			First tranche		
	UNDP	UNEP	Total	UNDP	UNEP	Total
Manufacturing sector	159,468	0	159,468	159,468	0	159,468
Servicing sector	221,669	144,448	366,117	140,669	86,740	227,409
Project management and monitoring	129,250	0	129,250	59,750	0	59,750
Total	510,387	144,448	654,835	359,887	86,740	446,627

Implementation plan for the first tranche

51. The first funding tranche of stage I of the KIP was submitted at a total amount of US \$446,627, as shown in table 8 above, to be implemented between June 2025 and June 2028. Detailed information on the activities to be implemented under the first tranche, including adjustments and level of funds agreed are presented in paragraph 70.

SECRETARIAT'S COMMENTS AND RECOMMENDATION**V. Comments**Overarching strategy

52. UNDP explained that the consumption in 2022 and 2023 was not reflective of realistic consumption levels due to economic growth challenges that resulted in import controls. The growth in HFC consumption from 2024 would have been higher, driven by economic recovery, if there had been no control measures in place.

Institutional, policy and regulatory framework*HFC licensing and quota system*

53. In line with decision 87/50(g), UNDP has confirmed that Sri Lanka has an established and enforceable system of licensing and quotas for monitoring HFC imports/exports in place. The country has issued HFC import quotas for 2025 at 1,105,181 CO₂-eq tonnes, which is lower than the Montreal Protocol control targets.

54. The Secretariat requested additional clarifications on whether prohibitions on the manufacturing, import and sale of HFC-based equipment in domestic and commercial refrigeration and high-GWP HFC-based air conditioners could be implemented during stage I of the KIP, as this will result in the adoption of sustainable technologies and would support the proposed conversion in the commercial refrigeration sector. Following consultations and considering technical and economic trends, it was agreed that the Government of Sri Lanka would prohibit the import, sale and use of HFC-based domestic refrigerators by 1 January 2028. For commercial refrigeration equipment, the Government will continue to assess risks related to the adoption of flammable refrigerants, particularly their use by different end users, and will promote safe adoption of these equipment.

55. Based on the risk assessment and socio-economic impacts of adopting low-GWP technologies in residential AC, the Government will consider imposing specific regulations for prohibiting the import and sale of R-410A-based equipment in stage II of the KIP. UNDP also explained that the country would stop manufacturing R-410A-based air conditioners by 1 January 2028, aligning with the proposed phase-out of R-410A in manufacturing air conditioners.

56. The Government will continuously monitor the availability of alternatives, as well as the social and economic implications of adopting those alternatives and, in stage II of the KIP, define specific regulations for prohibiting the import and sale of R-410A-based equipment. UNDP will report on the status of development and implementation of these regulations when submitting the second tranche request.

Technical and cost-related issues

57. Regarding the conversion project in commercial refrigeration, UNDP explained that all enterprises manufacturing equipment with an HFC charge size of less than 500 grams per unit would be covered under the umbrella project. In line with decision 95/86(e), there would be no future funding requests for converting this equipment. UNDP also clarified that for equipment with an HFC charge size greater than 500 grams per unit, projects for eligible enterprises may be submitted in the future.

58. The Secretariat requested additional information on specific steps proposed for the safe adoption of flammable refrigerants in various applications. UNDP explained that the Government would continue its efforts to build the capacity of service technicians in the safe installation, maintenance, and servicing of equipment using flammable refrigerants. It would also undertake risk assessments to address specific risks and concerns of end users and, based on these assessments, promote the adoption of low-GWP refrigerant-based equipment in different RAC applications. The pilot project for energy efficiency implemented under decision 91/65 on energy-efficient low-GWP refrigerant-based technologies in commercial refrigeration and residential AC along with the demonstration project for using HC-based chillers in the dairy sector, would complement the country's efforts to adopt low-GWP refrigerants.

Certification of service technicians

59. Regarding the certification of service technicians, UNDP explained that the Technical and Vocational Education Training (TVET) institutes face limitations in the number of technicians they can train. Due to the economic crisis, many trained technicians have emigrated from Sri Lanka to other countries. Support under stage I of the KIP would be provided to TVET institutes with updated trainer kits and relevant equipment to reach certification levels 3 and 4 of the National Vocational Qualification, as feasible. Such upgrades based on requirements identified at different stages of the KIP would be made available to TVET institutes in line with Executive Committee guidelines. UNDP also confirmed that no mandatory certification of technicians is planned before January 2029.

Agreed costs and HFC consumption reduction

60. After extensive consultations, UNDP confirmed that the Government of Sri Lanka would follow a strategy to achieve a 10 per cent reduction from its HFC baseline consumption by 2029. Given the current industry structure and technology adoption trends in the next four years, the Government cannot commit to additional consumption reductions, though it recognizes that this target is marginally higher than the HFC component of the baseline. Through various policy and capacity-building interventions, the Government would continue to promote the adoption of low-GWP technologies in different applications.

61. The Secretariat discussed with UNDP the costs for the phase-out of consumption in AC manufacturing and agreed to revise the funding to US \$7,072 for addressing the phase-out of 0.52 mt of R-410A, applying the cost guidelines of US \$13.6/kg for this sector.

62. The Secretariat also discussed the costs for commercial refrigeration manufacturing considering the conditions specified for umbrella projects for small- and medium-sized enterprises in decision 95/86(e). It was agreed that the Government of Sri Lanka would submit the conversion project for seven enterprises manufacturing small self-contained commercial refrigeration equipment with an HFC charge size of less than 0.5 kg per unit. These enterprises would be able to safely convert to flammable low-GWP alternative technologies, expediting the reduction of their dependence on HFCs. One enterprise, Everest, had

ownership in the United Arab Emirates and was therefore considered ineligible for funding, although it was initially part of the phase-out project. UNDP confirmed that the umbrella project would include all the enterprises in the commercial refrigeration sector or subsector for which cost-effectiveness thresholds had been established, except for large enterprises manufacturing large-size commercial refrigeration equipment with HFC consumption of more than 0.5 kg per unit. It was also understood that Sri Lanka would submit no further funding requests from the Multilateral Fund for any enterprise in the commercial refrigeration subsector for equipment with HFC consumption of less than 0.5 kg per unit, in line with decision 19/32(a). The conversion project for large enterprises manufacturing equipment with higher HFC consumption would be submitted at a future date. Furthermore, noting that the six enterprises that are proposed to be addressed through the plan had very small consumption and needed additional support for promoting safe market adoption of their products, it was agreed that US \$25,000 would be provided for assisting these enterprises in achieving their conversion.

63. Following these discussions, the total funding request for the commercial refrigeration sector for eligible enterprises was agreed at US \$88,673 for addressing the phase-out of 3.64 mt of HFC-134a, R-404A and R-507A. This amount was based on the additional capital costs required for converting these six enterprises. These costs include systems redesign and prototype for equipment, refrigerant supply and charging system, technical support and inspection for safe operation of plant. The incremental operating costs were estimated at US \$5.5 per kg. The actual funding was agreed at a lower value between the total incremental costs and the cost-effectiveness value of US \$32.67 per kg in line with decision 95/86(d) and (e).

64. In light of the above, the total funding for the manufacturing sector, including AC and commercial refrigeration enterprises, amounts to US \$95,745.

65. Furthermore, keeping in view the reduction targets, the funding for the service sector activities for stage I of the KIP was revised to a total of US \$285,525, with the following cost breakdown: policy and institutional framework strengthening activities (US \$82,500), procurement of equipment for training, reduced from six to four units (US \$76,153); training of technicians in the room air-conditioning and MAC sectors, reduced from 250 to 150 technicians (US \$97,872); technical support for the adoption of HC-based equipment in the dairy sector and training and other relevant support, excluding demonstration of alternatives to HFC-23-based test chambers (US \$19,000); and technical assistance for capacity-building (US \$10,000).

66. Based on the cost of activities in the servicing sector, agreed at US \$285,525, reductions from the remaining HFC consumption eligible for funding in the servicing sector amount to 107,548 CO₂-eq tonnes, as summarized in table 9.⁴ Accordingly, the Government of Sri Lanka has agreed to reduce its 2029 HFC consumption to 117,023 CO₂-eq tonnes, representing 10 per cent of the country's HFC baseline for compliance.

Table 9. Agreed costs and reductions from HFC consumption eligible for funding and 2029 target

Servicing sector		
Average HFC consumption in the servicing sector in baseline years	Mt	440.09
	CO ₂ -eq tonnes	845,467
Average GWP of all HFCs consumed in the sector		1,921
Agreed funding	US \$	285,525
Agreed cost-effectiveness threshold	US \$/kg	5.10
Reductions from the remaining HFC consumption in the sector	Mt	55.99
	CO ₂ -eq tonnes	107,548
Reductions from all sectors		
Established HFC consumption baseline	CO ₂ -eq tonnes	1,170,234

⁴ Calculated in line with the methodology presented in annex I of document UNEP/OzL.Pro/ExCom/92/46

<i>Reductions from the remaining HFC consumption eligible for funding achieved through conversions in the manufacturing sector</i>	<i>CO₂-eq tonnes</i>	9,475
<i>Phase in of HFC-32 in the AC manufacturing sector</i>	<i>CO₂-eq tonnes</i>	316
<i>Total reductions from the remaining HFC consumption eligible for funding</i>	<i>CO₂-eq tonnes</i>	117,023
Targeted reduction		
2029 target	CO ₂ -eq tonnes	1,053,211

Project management and monitoring

67. Funding for the project management and monitoring was agreed at US \$38,127 (US \$27,127 for staff, US \$8,000 for verification of consumption, and US \$3,000 for operational costs), amounting to 10 per cent of the project costs.

Total project cost

68. At the total cost of US \$419,397, stage I of the KIP for Sri Lanka will result in a reduction of 117,023 CO₂-eq tonnes from the country's HFC consumption eligible for funding, as summarized in table 10.

Table 10. Agreed cost of activities to be implemented during stage I of the KIP in Sri Lanka

Sector	Agency	Substance	Phase-out to be achieved				Cost	Cost-effectiveness	
			mt		CO ₂ -eq tonnes		US \$	US \$/ kg	US \$/ CO ₂ -eq t
			Funded	Non-funded	Funded	Non-funded			
Manufacturing	UNDP	R-410A	0.52	0.00	1,086	0	95,745	23.02	10.11
		HFC-134a	1.47	0.90*	2,102	6,287*			
		R-507A	0.19	0.00					
		R-404A	1.08	0.00					
Servicing	UNDP/ UNEP	Multiple HFCs	55.99	0.00	107,548	0	285,525*	5.10	2.65
Project management and monitoring	UNDP	n/a	n/a		n/a		38,127	n/a	
Total		n/a	60.15		117,023		419,397	6.97	3.58

* Enterprise ownership in the United Arab Emirates, therefore, not eligible for funding.

** US \$170,153 for UNDP and US \$115,372 for UNEP

69. Stage I of the KIP will be implemented in two tranches.

Implementation plan for the first tranche of the Kigali HFC implementation plan

70. The agreed plan of action will include the following activities:

- Conversion project implementation for room air-conditioning and commercial refrigeration manufacturing enterprises (UNDP) (US \$95,745);
- Strengthening of the policy, institutional and strategic framework: prohibit the import, manufacturing and sale of HFC-134a-based domestic refrigerators and the manufacturing of R-410A-based room air-conditioners; development of regulations on HFC-based commercial refrigeration equipment; and consultation meetings with national stakeholders and discussions with regulatory authorities (UNDP) (US \$5,000);
- Policy, regulations, and enforcement, including consultative meetings on accurate HFC data reporting and monitoring and regulations of MAC/service workshops (UNEP) (US \$17,500);

- (d) Procurement of two MAC and two AC trainer units (UNDP) (US \$59,176);
- (e) Capacity-building and training of six trainers and 25 servicing technicians in room AC and commercial refrigeration equipment on good service practices and safe adoption of flammable alternatives (UNDP) (US \$20,000);
- (f) Capacity-building for the MAC servicing sector through consultative meetings on awareness on alternatives, development of training materials for MAC technician training and one trainer workshop for 10 trainers on good service practices (UNEP) (US \$28,500); and
- (g) Project monitoring (UNDP) (US \$21,290), including staff and consultants (US \$17,290) and monitoring (US \$4,000).

Co-financing

71. The Government of Sri Lanka will provide estimated in-kind co-finance of US \$58,000 related to the NOU staff mobilized with public funds to coordinate the project implementation and cover the additional training costs (base salaries, operational costs of technical training colleges) for the training of 150 RAC technicians. In addition, other manufacturing enterprises including micro enterprises are expected to provide funding for project implementation for some of the components to achieve conversion.

2025–2027 business plan of the Multilateral Fund

72. UNDP and UNEP are requesting US \$419,397 plus agency support costs, for the implementation of stage I of the KIP for Sri Lanka. The total value of US \$455,677, including agency support costs, requested for the period of 2025–2027, is US \$198,018 above the amount in the business plan.

Gender policy implementation

73. In 2023, Sri Lanka launched its “National Policy on Gender Equality and Women’s Empowerment”. The policy aims to ensure equal rights and opportunities for women and girls across all spheres and structures of the Government, as well as in public and private workplaces, community, family and civic spaces. Other key policies that integrate gender equality and women’s empowerment include the National Policy on Decent Work in Sri Lanka (2006). As of the latest available data, women’s participation in the RAC sector remains limited to 0.7-1 per cent of the workforce. To address these barriers, the NOU pioneered the ‘Ozone Friends’ programme, which aims to introduce AC and refrigeration to girls at a younger age. The KIP will build on the momentum gained under the HPMP. During the preparation of stage I of the KIP, due consideration was given to the operational policy on gender mainstreaming of the Multilateral Fund to incorporate it into all aspects of the plan, with a focus on hiring female candidates for external and technical support. In response to decisions 84/92 and 92/40, mandatory requirements and performance indicators⁵ were included in stage I of the KIP to ensure equal opportunities for women in the RAC sector and create a safe environment for female participation.

Sustainability of the HFC phase-down and assessment of risks

74. The Government of Sri Lanka will implement the activities planned under the KIP in coordination with the HPMP activities to maximize synergies, particularly in training and capacity-building of the service sector, as well as awareness and outreach programmes. Conversion projects in residential AC manufacturing using HFC-134a and six self-contained commercial refrigeration equipment manufacturing HFC-based equipment will be implemented during stage I of the KIP. The Government will consult national stakeholders on the implementation of regulations to control and monitor HFCs, including the enforcement

⁵ Annex XXII of document UNEP/OzL.Pro/ExCom/92/56.

of the HFC quota system and the prohibition of import, manufacturing, and sale of HFC-134a-based domestic refrigerators and residential air conditioners using R-410A, by 1 January 2028. Additionally, the prohibition on import, manufacturing, and sale of commercial refrigeration equipment using HFCs would be set for a suitable date after the conversion of the manufacturing sector, in consultation with industry stakeholders. This will reduce the risks of non-compliance by achieving a higher reduction in HFC consumption.

75. Training and capacity-building activities for the servicing of domestic and commercial refrigeration equipment and MAC units, including capacity-building for servicing equipment using flammable low-GWP alternative technologies, will result in reduced use of HFCs and faster adoption of these alternatives, thus minimizing risks associated with the use of HCs while servicing equipment. Training activities under the HPMP, complemented by targeted support through the KIP for the adoption of flammable refrigerants, will also facilitate the reduction of HFC use in air-conditioning applications. Furthermore, activities planned under the pilot project to maintain and/or enhance the energy efficiency of replacement technologies and equipment in the context of HFC phase-down (decision 91/65) and those to maintain energy efficiency in the refrigeration sector (decision 89/6), would facilitate the adoption of low-GWP refrigerant-based RAC equipment.

Impact on the climate

76. The activities proposed, including efforts to promote low-GWP alternatives and refrigerant recovery and reuse, indicate that the implementation of stage I of the KIP will reduce refrigerant emissions into the atmosphere, resulting in climate benefits. A calculation of the impact on the climate of the activities in the KIP indicates that by 2029, Sri Lanka will have reduced its emissions by approximately 117,023 CO₂-eq tonnes of HFCs, calculated as the difference between its HFC baseline consumption and the reduction target for 2029.

Draft Agreement

77. A draft Agreement between the Government of Sri Lanka and the Executive Committee for stage I of the KIP is contained in annex I to the present document.

Coordination of activities in the servicing sector under HCFC phase-out and HFC phase-down plans

78. The activities planned under the KIP will be coordinated with the service sector activities under the HPMP, which is currently being implemented. Specifically, the training and technical support under the KIP will focus on the refrigeration sector, the MAC sector, and the safe servicing of equipment using flammable refrigerants. The HPMP activities will concentrate on service sector training related to air-conditioning applications and other HCFC phase-out activities. Since the NOU will monitor these activities overall, any opportunities for sharing information or adjusting implementation plans to address specific issues (e.g., sharing good practices or addressing relevant issues to the KIP/HPMP that could be learned from other activities) will be appropriately utilized. Furthermore, given the large number of RAC service technicians, the activities will be planned to maximise the outreach of training programmes on good service practices and safe servicing of alternative technologies. Annex II summarizes the simultaneous implementation of activities under the HPMP and the KIP.

VI. Recommendation

79. The Executive Committee may wish to consider:

- (a) Approving, in principle, stage I of the Kigali HFC implementation plan (KIP) for Sri Lanka for the period 2025–2029 to reduce HFC consumption by 10 per cent of the country's baseline, in the amount of US \$455,677, consisting of US \$304,025, plus agency support

costs of US \$21,282, for UNDP and US \$115,372, plus agency support costs of US \$14,998, for UNEP;

- (b) Noting:
 - (i) That the Government of Sri Lanka will establish its starting point for sustained aggregate reductions in HFC consumption based on guidance provided by the Executive Committee;
 - (ii) That, once the cost guidelines for HFC phase-down are agreed by the Executive Committee, reductions from the country's remaining HFC consumption eligible for funding will be determined in line with these guidelines;
 - (iii) That the reductions from the country's remaining HFC consumption eligible for funding referred to in subparagraph (b)(ii) above will be deducted from the starting point referred to in subparagraph (b)(i);
 - (iv) That the Government of Sri Lanka would submit no further funding requests from the Multilateral Fund for any enterprise in the commercial refrigeration subsector for equipment with HFC consumption of less than 0.5 kilogram per unit, in line with decision 19/32(a);
 - (v) That the Government of Sri Lanka would prohibit the import, sale and use of HFC-based domestic refrigerators and the manufacturing of R-410A-based residential air-conditioners by 1 January 2028;
- (c) Approving the draft Agreement between the Government of Sri Lanka and the Executive Committee for the reduction in consumption of HFCs in accordance with stage I of the KIP, contained in annex I to the present document; and
- (d) Approving the first tranche of stage I of the KIP for Sri Lanka and the corresponding tranche implementation plan, in the amount of US \$267,276, consisting of US \$201,211, plus agency support costs of US \$14,085, for UNDP and US \$46,000, plus agency support costs of US \$5,980, for UNEP.

Annex I

DRAFT AGREEMENT BETWEEN THE GOVERNMENT OF SRI LANKA AND THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF HYDROFLUOROCARBONS IN ACCORDANCE WITH STAGE I OF THE KIGALI HFC IMPLEMENTATION PLAN

(Period: 2025–2029)

Purpose

1. This Agreement represents the understanding of the Government of Sri Lanka (“the Country”) and the Executive Committee with respect to the reduction of controlled use of Annex F substances set out in Appendix 1-A (“The Substances”) to a sustained level of 1,053,211 CO₂-equivalent (CO₂-eq) tonnes by 1 January 2029 in compliance with the Montreal Protocol schedule and the terms of this Agreement.
2. The Country agrees to meet the annual consumption limits of Annex F substances as set out in row 1.2 of Appendix 2-A (“The Targets, and Funding”) in this Agreement as well as in the Montreal Protocol reduction schedule for Annex F substances mentioned in Appendix 1-A. The Country accepts that, by its acceptance of this Agreement and performance by the Executive Committee of its funding obligations described in paragraph 3, it is precluded from applying for or receiving further funding from the Multilateral Fund in respect to any consumption of Annex F substances that exceeds the level defined in row 1.2 of Appendix 2-A as the final reduction step under this Agreement for Annex F substances specified in Appendix 1-A, and in respect to any consumption of Annex F substances that exceeds the level[s] defined in row[s] 4.1.3 [and 4.2.3] (remaining consumption eligible for funding).
3. Subject to compliance by the Country with its obligations set out in this Agreement, the Executive Committee agrees, in principle, to provide the funding set out in row 3.1 of Appendix 2-A to the Country. The Executive Committee will, in principle, provide this funding at the Executive Committee meetings specified in Appendix 3-A (“Funding Approval Schedule”).
4. The Country agrees to implement this Agreement in accordance with stage I of the Kigali HFC implementation plan (“the Plan”) as approved. In accordance with subparagraph 5(b) of this Agreement, the Country will accept independent verification of the achievement of the annual consumption limits of Annex F substances set out in row 1.2 of Appendix 2-A of this Agreement. The aforementioned verification will be commissioned by the relevant bilateral or implementing agency.

Conditions for funding release

5. The Executive Committee will only provide the Funding, in accordance with the Funding Approval Schedule, when the Country satisfies the following conditions at least 10 weeks in advance of the applicable Executive Committee meeting set out in the Funding Approval Schedule:
 - (a) That the Country has met the Targets set out in row 1.2 of Appendix 2-A for all relevant years. Relevant years are all years since the year in which this Agreement was approved. Years for which there are no due country programme implementation reports at the date of the Executive Committee meeting at which the funding request is being presented are exempted;
 - (b) That the meeting of these Targets has been independently verified for all relevant years, unless the Executive Committee decided that such verification would not be required;
 - (c) That the Country had submitted a Tranche Implementation Report in accordance with Appendix 4-A (“Format of Tranche Implementation Reports and Plans”) covering each

previous calendar year; that it had achieved a significant level of implementation of activities initiated with previously approved tranches; and that the rate of disbursement of funding available from the previously approved tranche was more than 20 per cent; and

- (d) That the Country has submitted a Tranche Implementation Plan in accordance with Appendix 4-A covering each calendar year until and including the year for which the Funding Approval Schedule foresees the submission of the next tranche or, in case of the final tranche, until completion of all activities foreseen.

Monitoring

6. The Country will ensure that it conducts accurate monitoring of its activities under this Agreement. The institutions set out in Appendix 5-A (“Monitoring Institutions and Roles”) will monitor and report on implementation of the activities in the previous Tranche Implementation Plans in accordance with their roles and responsibilities set out in the same appendix.

Flexibility in the reallocation of funds

7. The Executive Committee agrees that the Country may have the flexibility to reallocate part or all approved funds, according to the evolving circumstances, to achieve the smoothest reduction of consumption and phase-down of Annex F substances specified in Appendix 1-A, in accordance with the following considerations:

- (a) Reallocations categorized as major changes must be documented in advance, either in a Tranche Implementation Plan as foreseen in subparagraph 5(d) above, or as a revision to an existing Tranche Implementation Plan to be submitted 10 weeks prior to any meeting of the Executive Committee, for its approval. Major changes would relate to:
 - (i) Issues potentially concerning the rules and policies of the Multilateral Fund;
 - (ii) Changes that would modify any clause of this Agreement;
 - (iii) Changes in the annual levels of funding allocated to the individual bilateral or implementing agencies for the different tranches;
 - (iv) Provision of funding for activities not included in the current endorsed Tranche Implementation Plan, or removal of an activity in the Tranche Implementation Plan, with a cost greater than 30 per cent of the total cost of the last approved tranche;
 - (v) Changes in alternative technologies, on the understanding that any submission for such a request would identify the associated incremental costs, the potential impact on the climate, and any differences in CO₂-eq tonnes to be phased down if applicable, as well as confirm that the Country agrees that potential savings related to the change of technology would accordingly decrease the overall funding level under this Agreement;
- (b) Reallocations not categorized as major changes may be incorporated into the approved Tranche Implementation Plan, under implementation at the time, and reported to the Executive Committee in the subsequent Tranche Implementation Report;
- (c) Any enterprise included in the Plan that would be found to be ineligible under the policies of the Multilateral Fund (i.e., due to foreign ownership or establishment after the applicable

cut off date) would not receive financial assistance. This information would be reported as part of the Tranche Implementation Plan; and

- (d) Any remaining funds held by the bilateral or implementing agencies or the Country under the Plan will be returned to the Multilateral Fund upon completion of the last tranche foreseen under this Agreement.

8. Specific attention will be paid to the execution of activities in the refrigeration servicing sector included in the Plan, in particular that the Country may use the flexibility available under this Agreement to address specific needs that might arise during project implementation.

Bilateral and implementing agencies

9. The Country agrees to assume overall responsibility for the management and implementation of this Agreement and of all activities undertaken by it or on its behalf to fulfil the obligations under this Agreement. UNDP has agreed to be the lead implementing agency (the “Lead IA”) and UNEP has agreed to be the cooperating implementing agency (the “Cooperating IA”) under the lead of the Lead IA in respect of the Country’s activities under this Agreement. The Country agrees to evaluations, which might be carried out under the monitoring and evaluation work programmes of the Multilateral Fund or under the evaluation programme of the Lead IA and/or Cooperating IA taking part in this Agreement.

10. The Lead IA will be responsible for ensuring coordinated planning, implementation and reporting of all activities under this Agreement, including but not limited to the independent verification as per subparagraph 5(b). The Cooperating IA will support the Lead IA by implementing the Plan under the overall coordination of the Lead IA. The roles of the Lead IA and Cooperating IA are contained in Appendix 6-A and Appendix 6-B, respectively. The Executive Committee agrees, in principle, to provide the Lead IA and the Cooperating IA with the fees set out in rows 2.2 and 2.4 of Appendix 2-A.

Non-compliance with the Targets in the Agreement

11. Should the Country, for any reason, not meet the Targets for the elimination of Annex F substances set out in row 1.2 of Appendix 2-A or otherwise does not comply with this Agreement, then the Country agrees that it will not be entitled to the Funding in accordance with the Funding Approval Schedule. At the discretion of the Executive Committee, funding will be reinstated according to a revised Funding Approval Schedule determined by the Executive Committee after the Country has demonstrated that it has satisfied all its obligations that were due to be met prior to receipt of the next tranche of funding under the Funding Approval Schedule. The Country acknowledges that the Executive Committee may reduce the amount of the Funding by the amount set out in Appendix 7-A (“Reductions in Funding for Failure to Comply”) in respect of each CO₂-eq kg of reductions in consumption not achieved in any one year. The Executive Committee will discuss each specific case in which the Country did not comply with this Agreement and take related decisions. Once decisions are taken, the specific case of non-compliance with this Agreement will not be an impediment for the provision of funding for future tranches as per paragraph 5 above.

12. The Funding of this Agreement will not be modified on the basis of any future Executive Committee decisions that may affect the funding of any other consumption sector projects or any other related activities in the Country.

13. The Country will comply with any reasonable request of the Executive Committee, the Lead IA and the Cooperating IA to facilitate implementation of this Agreement. In particular, it will provide the Lead IA and the Cooperating IA with access to the information necessary to verify compliance with this Agreement.

Date of completion

14. The completion of the Plan and the associated Agreement will take place at the end of the year following the last year for which a maximum allowable total consumption level has been specified in Appendix 2-A. Should at that time there still be activities that are outstanding, and which were foreseen in the last Tranche Implementation Plan and its subsequent revisions as per subparagraph 5(d) and paragraph 7, the completion of the Plan will be delayed until the end of the year following the implementation of the remaining activities. The reporting requirements as per subparagraphs 1(a), 1(b), and 1(d) of Appendix 4-A will continue until the time of the completion of the Plan unless otherwise specified by the Executive Committee.

Validity

15. All conditions set out in this Agreement are undertaken solely within the context of the Montreal Protocol and as specified in this Agreement. All terms used in this Agreement have the meaning ascribed to them in the Montreal Protocol unless otherwise defined herein.

16. This Agreement may be modified or terminated only by mutual written agreement of the Country and the Executive Committee of the Multilateral Fund.

APPENDICES

APPENDIX 1-A: THE SUBSTANCES

Substances	Starting point for aggregate reductions in consumption
To be determined	

APPENDIX 2-A: THE TARGETS, AND FUNDING

Row	Particulars		2025	2026	2027	2028	2029	Total
1.1	Montreal Protocol reduction schedule of Annex F substances	%	freeze	freeze	freeze	freeze	10	n/a
		CO ₂ -eq tonnes	1,170,234	1,170,234	1,170,234	1,170,234	1,053,211	n/a
1.2	Maximum allowable total consumption of Annex F substances	Reduction in %	0	0	0	0	10	n/a
		CO ₂ -eq tonnes	1,170,234	1,170,234	1,170,234	1,170,234	1,053,211	n/a
2.1	Lead IA (UNDP) agreed funding (US \$)		201,211	0	102,814	0	0	304,025
2.2	Support costs for Lead IA (US \$)		14,085	0	7,197	0	0	21,282
2.3	Cooperating IA (UNEP) agreed funding (US \$)		46,000	0	69,372	0	0	115,372
2.4	Support costs for Cooperating IA (US \$)		5,980	0	9,018	0	0	14,998
3.1	Total agreed funding (US \$)		247,211	0	172,186	0	0	419,397
3.2	Total support costs (US \$)		20,065	0	16,215	0	0	36,280
3.3	Total agreed costs (US \$)		267,276	0	188,401	0	0	455,677
4.	To be determined							

APPENDIX 3-A: FUNDING APPROVAL SCHEDULE

1. Funding for the future tranches will be considered for approval at the first meeting of the year specified in Appendix 2-A.

APPENDIX 4-A: FORMAT OF THE TRANCHE IMPLEMENTATION REPORTS AND PLANS

1. The submission of the Tranche Implementation Report and Plans for each tranche request will consist of four parts:

- (a) A narrative report, with data provided by tranche, describing the progress achieved since the previous report, reflecting the situation of the Country in regard to phase-down of Annex F substances, how the different activities contribute to it, and how they relate to each other, including, where applicable, activities related to energy efficiency approved in the context of HFC phase-down pursuant to decision 91/65. The report should include the amount of Annex F substances consumption reduced as a direct result of the implementation of activities, by substance, the alternative technology used and the related phase in of alternatives, to allow the Secretariat to inform the Executive Committee on the resulting change in climate relevant emissions. The report should also include quantitative information on the activities implemented and further highlight the successes, experiences, and challenges related to the different activities included in the Plan, reflecting any changes in the circumstances in the Country, and providing other relevant information. The report should also include information on and justification for any changes vis-à-vis the previously submitted Tranche Implementation Plan(s), such as delays, use of flexibility for the reallocation of funds during implementation of a tranche as provided for in paragraph 7 of this Agreement, or other changes;
- (b) An independent verification report on the Plan's results and the consumption of Annex F substances, as per subparagraph 5(b) of the Agreement. If not decided otherwise by the Executive Committee, such a verification of consumption data must be provided with each tranche request, covering all relevant years for which a verification report has not yet been acknowledged by the Committee, as specified in subparagraph 5(a) of the Agreement;
- (c) A written description of the activities to be undertaken during the period covered by the requested tranche including quantitative information, highlighting implementation milestones, the time of completion and the interdependence of the activities, and taking into account experiences made and progress achieved in the implementation of earlier tranches; the data in the Plan will be provided by calendar year. The description should include a reference to the overall Plan and progress achieved, as well as any possible changes to the overall Plan that are foreseen. The description should also specify and explain in detail such changes to the overall Plan. This description of future activities can be submitted as a part of the same document as the narrative report under subparagraph 1(a) above; and
- (d) An Executive Summary of about five paragraphs, summarizing the information contained in subparagraphs 1(a) to 1(c) above.

APPENDIX 5-A: MONITORING INSTITUTIONS AND ROLES

1. The national ozone unit (NOU) of the Ministry of Environment and Wildlife Resources will be responsible for the overall monitoring, planning, coordination, and implementation of all activities under the Plan. It will assist the Government and non-Government organizations in streamlining their activities for smooth project implementation. Additionally, the NOU will monitor the implementation of capacity-building activities with relevant agencies. It will submit annual progress reports on the implementation status to the Lead IA and the Cooperating IA to monitor the Plan's progress.

2. Annual consumption of HFCs and other ODS will be monitored through the NOU in collaboration with the Sri Lanka Customs Department (SLCD). The Import and Export Control Department (IECD) is a

licensing authority that issues import and export permits, while the SLCD will control and monitor the import and export of HFCs and other ODS at the point of entry. The NOU will liaise with importers of HFCs and other ODS to obtain necessary data for reconciliation of statistics on a periodic basis.

APPENDIX 6-A: ROLE OF THE LEAD IMPLEMENTING AGENCY

1. The Lead IA will be responsible for a range of activities, including at least the following:
 - (a) Ensuring performance and financial verification in accordance with this Agreement and with its specific internal procedures and requirements as set out in the Country's Plan;
 - (b) Assisting the Country in the preparation of the Tranche Implementation Reports and Plans as per Appendix 4-A;
 - (c) Providing independent verification to the Executive Committee that the Targets have been met and associated tranche activities have been completed as indicated in the Tranche Implementation Plan, consistent with Appendix 4-A;
 - (d) Ensuring that the experiences and progress are reflected in the updates to the overall Plan and in the future Tranche Implementation Plans, consistent with subparagraph 1(c) of Appendix 4-A;
 - (e) Fulfilling the reporting requirements of the Tranche Implementation Reports and Plans and of the overall Plan as specified in Appendix 4-A for submission to the Executive Committee including the activities implemented by the Cooperating IA;
 - (f) In the event that the last funding tranche is requested one or more years prior to the last year for which a consumption target had been established, annual Tranche Implementation Reports and, where applicable, verification reports on the current stage of the Plan should be submitted until all activities foreseen had been completed and HFC consumption targets had been met;
 - (g) Ensuring that appropriate independent technical experts carry out the technical reviews;
 - (h) Carrying out the required supervision missions;
 - (i) Ensuring the presence of an operating mechanism to allow for an effective and transparent implementation of the Tranche Implementation Plan and accurate data reporting;
 - (j) Coordinating the activities of the Cooperating IA and ensuring the appropriate sequence of activities;
 - (k) In case of reductions in funding for failure to comply in accordance with paragraph 11 of the Agreement, to determine, in consultation with the Country and the Cooperating IA, the allocation of the reductions to the different budget items and to the funding of the Lead IA and each Cooperating IA;
 - (l) Ensuring that disbursements made to the Country are based on the use of the indicators;
 - (m) Providing assistance with the policy, management and technical support when required;
 - (n) Reaching consensus with the Cooperating IA on any planning, coordination and reporting arrangements required to facilitate the implementation of the Plan; and

- (o) Timely releasing funds to the Country/participating enterprises for completing the activities related to the project.

2. After consultation with the Country and taking into account any views expressed, the Lead IA will select and mandate an independent entity to carry out the verification of the Plan's results and of the consumption of Annex F substances mentioned in Appendix 1-A, as per subparagraph 5(b) of the Agreement and subparagraph 1(b) of Appendix 4-A.

APPENDIX 6-B: ROLE OF THE COOPERATING IMPLEMENTING AGENCIES

1. The Cooperating IA will be responsible for a range of activities. These activities are specified in the Plan, including at least the following:

- (a) Providing assistance for policy development when required;
- (b) Assisting the Country in the implementation and assessment of the activities funded by the Cooperating IA, and referring to the Lead IA to ensure a coordinated sequence of activities;
- (c) Providing reports to the Lead IA on these activities, for inclusion in the consolidated reports as per Appendix 4-A; and
- (d) Reaching consensus with the Lead IA on any planning, coordination and reporting arrangements required to facilitate the implementation of the Plan.

APPENDIX 7-A: REDUCTIONS IN FUNDING FOR FAILURE TO COMPLY WITH THE TARGETS IN THE AGREEMENT

1. In accordance with paragraph 11 of the Agreement, the amount of funding provided may be reduced by US \$7.17 per CO₂-eq tonne of consumption beyond the level defined in row 1.2 of Appendix 2-A for each year in which the Target specified in row 1.2 of Appendix 2-A has not been met, on the understanding that the maximum funding reduction would not exceed the funding level of the tranche being requested. Additional measures might be considered in cases where non-compliance extends for two consecutive years. Where the country has failed to comply with the Agreement due to illegal trade, the reduction in funding would not be applied if the illegally traded controlled substances are seized and subsequently confiscated, destroyed, exported, or returned to the country of origin.

Annex II

**SIMULTANEOUS IMPLEMENTATION OF THE HCFC PHASE-OUT MANAGEMENT PLAN
AND THE KIGALI HFC IMPLEMENTATION PLAN IN SRI LANKA**

	HPMP – stage II		KIP – stage I		HPMP+KIP combined cost (US \$)
Category of activity	Activity	Cost (US \$)	Activity	Cost (US \$)	
Conversion projects in manufacturing			Conversion of air-conditioning manufacturing and small commercial refrigeration equipment manufacturing	95,745	95,745
Policy, regulations and strengthening enforcement	Policy review and amendment of regulations relating to HCFCs	24,000			24,000
			Introduction of regulations for mandatory reporting and integrated data reporting of HFC supply	25,000	25,000
	Training of customs and enforcement officers	49,500			49,500
	Technical assistance for strengthening ODS-risk profiling	10,000			10,000
	Procurement of refrigerant identifiers	25,000			25,000
			Ban on use of HFC-134a in domestic refrigeration for new and imported equipment	10,000	10,000
			Assessment of room AC sector to control use of R-410A	10,000	10,000
			Market assessment for MAC sector	10,000	10,000
			Workshop registration streamlining and development of grading system for RAC/MAC workshops	27,500	27,500
Capacity-building of air conditioning and MAC servicing sectors	Procurement of training equipment for six training centres	150,000			150,000
			MAC trainers kit	17,000	17,000
			Room AC trainers kit	59,153	59,153
	Procurement of tools for RAC technicians	240,000			240,000
	Training of RAC technicians on good practices and handling of flammable refrigerants	147,000			147,000

	HPMP – stage II		KIP – stage I		HPMP+KIP combined cost (US \$)
Category of activity	Activity	Cost (US \$)	Activity	Cost (US \$)	
			Training of trainers and technicians (refrigeration applications/HFC-32 application)	45,000	45,000
			Sector-specific training for MAC technicians in the MAC sector	52,872	52,872
	Integration of code of good practices into TVET system and certification of RAC technicians	104,000			104,000
	Technical assistance to reclamation centres	12,000			12,000
	Technical assistance for chillers	12,000			12,000
	Revive RAC association	4,500			4,500
Public awareness and outreach	Development and dissemination of awareness and education materials on HCFC phase-out	50,000			50,000
	Sector-based activity related to HCFC phase-out	50,000			50,000
			Technical assistance for adoption of HC-based equipment in the dairy sector and training	19,000	19,000
Coordination and monitoring	Project management, coordination and monitoring	162,000	Project management, coordination, monitoring and technical support	48,127	210,127
Total		1,040,000		419,397	1,459,397
Percentage of total (%)		71.3		28.7	100.0