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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Seventy-ninth Meeting
Bangkok, 3-7 July 2017

PROJECT PROPOSALS: ARGENTINA

This document consists of the comments and recommendations of the Secretariat on the following project proposals:

Phase-out

- HCFC phase-out management plan (stage I, third and final tranche) Italy/UNIDO/World Bank
- HCFC phase-out management plan (stage II, first tranche) Italy/UNIDO/World Bank

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS
Argentina

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase out plan (Stage I)	IBRD, Italy, UNIDO (lead)	66 th	17.5% by 2017

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2015	295.4 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2016	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22	0.24	1.43		9.08	127.39				138.13
HCFC-123			1.64		0.59				2.23
HCFC-124					0.55				0.55
HCFC-141b	0.33	56.50			12.76				69.59
HCFC-141b in imported pre-blended polyol		25.08							25.08
HCFC-142b	0	1.19			8.40				9.60

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	400.7	Starting point for sustained aggregate reductions:	377.5
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	83.53	Remaining:	293.98

(V) BUSINESS PLAN		2017
UNIDO	ODS phase-out (ODP tonnes)	1.29
	Funding (US \$)	134,000

(VI) PROJECT DATA			2010	2011	2012	2013	2014	2015	2016	2017	Total
Montreal Protocol consumption limits			n/a	n/a	n/a	400.70	400.70	360.63	360.63	360.63	n/a
Maximum allowable consumption (ODP tonnes)			n/a	n/a	n/a	400.70	400.70	360.63	360.63	330.58	n/a
Agreed funding (US\$)	IBRD	Project costs	0	0	914,612	0	0	0	0	0	914,612
		Support costs	0	0	68,596	0	0	0	0	0	68,596
	Italy	Project costs	300,000	0	0	0	0	0	0	0	300,000
		Support costs	39,000	0	0	0	0	0	0	0	39,000
	UNIDO	Project costs	8,435,542	0	685,388	0	314,612	0	0	125,000	9,560,542
		Support costs	632,666	0	51,404	0	22,023	0	0	8,750	714,843
Funds approved by ExCom (US\$)	Project costs	8,735,542*	0	1,600,000	0	0	314,612	0	0.0	10,650,154	
	Support costs	671,666	0	120,000	0	0	22,023	0	0.0	813,689	
Total funds requested for approval at this meeting (US\$)	Project costs	0	0	0	0	0	0	0	125,000	125,000	
	Support costs	0	0	0	0	0	0	0	8,750	8,750	

* Approved at the 61st Executive Committee meeting.

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Argentina, UNIDO as the lead implementing agency, has submitted to the 79th meeting a request for funding for the third and final tranche of stage I of the HCFC phase-out management plan (HPMP), at the amount of US \$125,000, plus agency support costs of US \$8,750 for UNIDO only¹. The submission includes a progress report on the implementation of the second tranche, the verification report on HCFC consumption and the tranche implementation plan for 2017 to 2018.

Report on HCFC consumption

HCFC consumption

2. The Government of Argentina reported a consumption of 295.42 ODP tonnes of HCFC in 2015 and estimated a consumption of 228.9 ODP tonnes for 2016. The 2012-2016 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Argentina (2012-2016 Article 7 data)

HCFC	2012	2013	2014	2015	2016*	Baseline
Metric tonnes						
HCFC-22	6,528.44	2,574.45	2,904.33	3,043.23	2,324.60	4,859.5
HCFC-141b	1,693.22	827.06	951.71	978.73	829.54	1,031.1
HCFC-142b	306.22	170.37	145.82	266.25	111.21	268.1
HCFC-123	190.57	71.55	77.96	111.38	109.55	74.7
HCFC-124	103.10	51.24	28.56	38.66	21.05	47.9
HCFC-21	2.31	0.00	0.00	0.00	0.00	0.0
Total (mt)	8,823.86	3,694.67	4,108.38	4,438.25	3,395.95	6,281.3
ODP tonnes						
HCFC-22	359.06	141.59	159.73	167.38	127.85	267.3
HCFC-141b	186.25	90.98	104.69	107.66	91.25	113.4
HCFC-142b	19.90	11.07	9.48	17.31	7.23	17.5
HCFC-123	3.81	1.43	1.56	2.23	2.19	1.5
HCFC-124	2.27	1.13	0.63	0.85	0.46	1.0
HCFC-21	0.10	0.00	0.00	0.0	0.00	0.0
Total (ODP tonnes)	571.39	246.20	276.09	295.42	228.99	400.7

*As per the independent verification report.

3. The consumption of HCFC-22 significantly decreased from 2013, primarily because of the conversion of the room air-conditioning (AC) manufacturing sector. HCFC consumption in 2016 was 45 per cent below the baseline for compliance. The low levels of HCFC consumption in recent years have been largely due to a slow-down of the economy, as well as exchange-rate control measures that have prevented some importers from fulfilling their entire quota. These circumstances, which are not related to the need for HCFC in the local market, are expected to revert to their previous status in the near future, with a potential increase in the consumption of HCFCs.

Verification report

4. An independent verification report on HCFC consumption for 2015 and 2016 confirmed that the Government has continued implementing its licensing and quota system for HCFC imports and exports and that the total consumption of HCFCs for 2015 and 2016 was 295.4 and 228.9 ODP tonnes, respectively. The verification also concluded *inter alia* that Argentina had maintained an exhaustive

¹ As per the letter of 29 May 2017 from the Ministry of Foreign Affairs of Argentina to UNIDO.

control over the level of production and import of HCFCs during 2015 and 2016 allowing consumption for these years to continue declining, that its annual consumption of HCFCs was well below the maximum consumption limit allowed for the country, that its legal system was structured in such a way that it allowed the compliance with the Montreal Protocol targets.

Country programme (CP) implementation report

5. The Government of Argentina reported data on HCFC use by sector under the 2016 CP implementation report (245.17 ODP tonnes) that is higher than the consumption data provided in the verification report (228.9 ODP tonnes). As in other years, this is due to the fact that the consuming sectors used stockpiled substances imported in previous years.

Progress report on the implementation of the second tranche of the HPMP

Legal framework

6. The web-based import-export licensing and quota system continues to operate efficiently. Ninety per cent of the import quota is allocated to importers based on historical imports, four per cent is used for other enterprises, one per cent is retained for extraordinary cases, and five per cent is used for cases of occasional imports with weights slightly higher than those set in the licenses.

7. The import and export licensing system was strengthened to cover monitoring of HCFC-22 production by Frío Industrias Argentinas SA (FIASA), the only Argentinian HCFC producer, starting 1 January 2015. Monitoring has taken place for the year 2015 and the first three quarters of 2016, including review of stocks (i.e., raw material and final product), production, delivery of final product and related services (i.e., maintenance, control room and laboratory). The consolidated 2015 monitoring report concluded that 2,445.97 mt of HCFC-22 were produced (66 per cent of the 3,675.00 mt allowed); FIASA provided all information requested and all their records were found to be reliable; and HFC-23 originated as a by-product during the production of HCFC-22 is being emitted to the atmosphere.

8. Other regulations promulgated during stage I include a ban on import and production of room air-conditioning (AC) equipment using HCFC-22 by 1 January 2013 and incorporation of information on import of room AC units in the ODS licensing system. The Kigali Amendment to the Montreal Protocol will be ratified through the corresponding law to be enacted in 2018 or 2019.

Manufacturing sector

9. *Conversion of HCFC-22 in room and unitary AC equipment (53.5 ODP tonnes):* Out of nine enterprises included in the project, seven were converted to HFC-410A as per the approved project, and two stopped producing HCFC-22-based equipment due to economic difficulties and did not convert. A total balance of US \$500,636 associated with these two enterprises is being returned at the 79th meeting². Since 2013 no HCFC is being used in the sector and imports and sales of HCFC-22-based AC equipment have been banned.

10. *Conversion from HCFC-141b in the manufacture of polyurethane (PU) rigid insulation foam for domestic refrigerators at Mabe (18.46 ODP tonnes):* The project was operationally completed in April 2015.

² Decision 77/17(b) requested UNIDO and the Government of Italy to return to the 79th meeting the balance of US \$547,973, consisting of US \$322,644, plus agency support costs of US \$24,198 for UNIDO (ARG/REF/61/INV/164), and US \$177,992, plus agency supports costs of US \$23,139 for the Government of Italy (ARG/REF/61/INV/163).

Refrigeration servicing sector

11. A total of 28 trainers and 850 refrigeration technicians have received training on good servicing practices in refrigeration and alternatives to HCFCs; and 1,184 technicians have received training on specific related topics (e.g., refrigeration systems in supermarkets, handling of hydrocarbons (HC) and other alternative refrigerants). Twelve training kits (comprising R-410A equipment, nitrogen cylinders and tools) have been distributed to training centers and 694 out of the 714 tool kits procured (comprising vacuum pumps, leak detectors, R-410A manifold and hoses and manual tools) have been distributed to refrigeration workshops.

12. Training courses on the phase-out of HCFC-141b used as flushing agent by refrigeration servicing technicians started in 2015. The training will be complemented by a demonstration activity to verify the efficiency of newly developed flushing equipment using a special grade of high-performance HFO-1233zd. A total of 20 sets will be distributed among beneficiaries, which will report on the performance of the equipment after a certain time of usage so that the lessons learnt can be disseminated.

Monitoring of HCFC-22 production

13. Monitoring of HCFC production has been carried out through quarterly control visits and the production of reports since 2016.

Project implementation and monitoring unit (PMU)

14. Awareness-raising activities implemented include a regional conference on the phase-out of HCFCs in the commercial refrigeration sector for 200 installers, equipment suppliers and supermarket chains from eight countries, and the preparation and distribution to refrigeration technicians of 11 brochures on: good practices in refrigeration; Montreal Protocol control measures; recovery, recycling and reclamation; safe servicing of HC-based equipment; alternatives to HCFCs; and commercial refrigeration in supermarkets.

Level of fund disbursement

15. As of May 2017, of the US \$10,949,518 so far approved, US \$10,576,862 had been disbursed (US \$9,738,250 for UNIDO and US \$838,612 for the World Bank) as shown in Table 2. The balance of US \$372,656 will be disbursed in 2017 and 2018.

Table 2. Financial report of stage I of the HPMP for Argentina (US \$)

Agency	First tranche		Second tranche		Total	
	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed
UNIDO (balance of the NPP)*	800,000	800,000	0	0	800,000	800,000
UNIDO	685,388	629,024	314,612	74,320	1,000,000	703,344
World Bank	914,612	838,612	0	0	914,612	838,612
Subtotal	2,400,000	2,267,636	314,612	74,320	2,714,612	2,341,956
Disbursement rate (%)	94.5		23.6		86.3	
Project on domestic AC manufacturing sector (Italy/UNIDO)**	8,234,906	8,234,906	0	0	8,234,906	8,234,906
Total	10,634,906	10,502,542	314,612	74,320	10,949,518	10,576,862
Disbursement rate (%)	98.8		23.6		96.6	

*Balance from the national phase-out plan relocated for activities in the servicing sector as per decision 66/42(h).

**Investment project approved at the 61st meeting and subsumed in the HPMP, at US \$8,735,542. Balance of US \$500,636 plus agency support costs of US \$47,337 is being returned to the 79th meeting (decision 77/17).

Implementation plan for the third tranche of the HPMP

16. The following activities will be implemented between August 2017 and December 2018:

- (a) *Refrigeration servicing sector (UNIDO) (US \$110,000)*: Continuation of technical assistance to reduce the use of HCFC-141b in flushing during servicing including the demonstration of using HFO-1233zd in flushing equipment; continuation of the training of trainers on natural alternatives to HCFCs through six training sessions and a technical and economic study on the introduction of new alternatives; two additional workshops for the commercial refrigeration sector; and continuation of activities to facilitate the introduction of CO₂ and HC refrigerants, including workshops on the availability and advantages or disadvantages of such alternatives, and promotion of these alternatives in Argentina in cooperation with technology providers from countries where such alternatives are currently being produced and used; and
- (b) *Project coordination and monitoring strategy (UNIDO)(US \$15,000)*: Continuation of monitoring of the production, imports and exports of HCFCs, the consumption in the different sectors, implementation of overarching strategy, and coordination of all activities related to the third tranche of the HPMP.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Progress report on the implementation of the second tranche of the HPMP

Legal framework

17. The Government of Argentina has already issued HCFC import quotas for 2017, at 147.93 ODP tonnes, which is lower than the consumption levels allowed under the Montreal Protocol and lower than the expected HCFC consumption for the year as Argentina also produces HCFC-22.

Refrigeration servicing sector

18. The Secretariat noted that the target of 2,000 technicians to be trained in stage I was surpassed and additional technicians will continue to be trained in 2017 and 2018. With regard to customs training, UNIDO confirmed that the ten workshops for 206 officers in seven cities included in the last report was the final target for the stage I of the HPMP.

19. On the availability of alternatives to HCFC, UNIDO referred to the results of the ODS alternatives surveys, which provided a comprehensive overview of alternatives in the local market. According to the survey, the main barriers to a more widespread use of HC and CO₂ in commercial refrigeration appliances were the cost of conversion due to safety requirements (HC), increased capital costs, and the need for technicians with better skills (CO₂). Ammonia/CO₂ systems are considered a possible option in industrial refrigeration to reduce the charge of ammonia and decrease toxicity risk. A Multilateral Fund project to demonstrate trans-critical CO₂ is currently being implemented. The new synthetic low-GWP refrigerants are not yet commercially available in Argentina.

Plan of action for the final tranche and date of completion of stage I

20. The Government of Argentina has confirmed through UNIDO that the date of completion of stage I continues to be 31 December 2018, as per paragraph 14 of the Agreement between the

Government and the Executive Committee. Stage II of the HPMP has been submitted for consideration to the 79th meeting.

Conclusion

21. The Government of Argentina continued implementing its HCFC import and export licensing and quota system. The HCFC consumption levels in 2015 and 2016 were below the 10 per cent control measure in 2015 as corroborated by the independent verification reports. The level of HCFC-22 production is also in compliance with the established target for 2015 as indicated in the HCFC-22 production monitoring report. The country completed the conversion of the room AC manufacturing sector, phasing out 53.5 ODP tonnes of HCFC-22 and the conversion of one PU foam manufacturing enterprise, phasing out 18.46 ODP tonnes of HCFC-141b, and continued the implementation of activities in the refrigeration servicing sector, with an emphasis on technician training. UNIDO, the World Bank and the Government of Italy have disbursed 96.6 per cent of the approved funds.

RECOMMENDATION

22. The Fund Secretariat recommends that the Executive Committee:

- (a) Takes note of the progress report on the implementation of the second tranche of stage I of the HCFC phase-out management plan of (HPMP) for Argentina; and
- (b) Requests the Government of Argentina, UNIDO and the World Bank to submit the project completion report to the second meeting of the Executive Committee in 2019.

23. The Fund Secretariat further recommends blanket approval of the third and final tranche of stage I of the HPMP for Argentina, and the corresponding 2017-2018 tranche implementation plan, at the funding level shown in the table below:

	Project title	Project funding (US \$)	Support cost (US \$)	Implementing agency
(a)	HCFC phase-out management plan (stage I, third and final tranche)	125,000	8,750	UNIDO

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS
Argentina

(I) PROJECT TITLE	AGENCY
HCFC phase-out plan (Stage II)	UNIDO (lead)/World Bank/Italy

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2015	295.4 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2016	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22	0.24	1.43		9.08	127.39				138.13
HCFC-123			1.64		0.59				2.23
HCFC-124					0.55				0.55
HCFC-141b	0.33	56.50			12.76				69.59
HCFC-141b in Imported Pre-blended Polyol		25.08							25.08
HCFC-142b	0	1.19			8.40				9.60

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	400.70	Starting point for sustained aggregate reductions:	377.51
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	83.53	Remaining:	293.98

(V) BUSINESS PLAN		2017	2018	2019	2020	After 2020	Total
UNIDO	ODS phase-out (ODP tonnes)	11.29	0	15.00	0	10.00	36.29
	Funding (US \$)	1,068,000	0	1,401,000	0	934,000	3,403,000
World Bank	ODS phase-out (ODP tonnes)	7.92	23.75	23.75	23.75	0	79.17
	Funding (US \$)	823,000	2,432,000	2,432,000	1,627,000	823,000	8,137,000
Government of Italy	ODS phase-out (ODP tonnes)	0	0	0	0	0	0
	Funding (US \$)	0	0	0	0	0	0

(VI) PROJECT DATA			2017	2018	2019	2020	2021	2022	Total
Montreal Protocol consumption limits			360.63	360.63	360.63	260.45	260.45	260.45	n/a
Maximum allowable consumption (ODP tonnes)			330.58	330.58	330.58	260.45	260.45	200.35	n/a
Project costs requested in principle (US\$)	UNIDO	Project costs	595,746	0	1,347,217	0	1,334,000	364,107	3,641,070
		Support costs	41,702	0	94,305	0	93,380	25,487	254,875
	World Bank	Project costs	907,525	0	2,722,576	0	1,815,050	605,017	6,050,168
		Support costs	63,527	0	190,580	0	127,054	42,351	423,512
	Italy	Project costs	250,000	0	0	0	0	0	250,000
		Support costs	32,500	0	0	0	0	0	32,500
Total project costs requested in principle (US \$)			1,753,271	0	4,069,793	0	3,149,050	969,124	9,941,238
Total support costs requested in principle (US \$)			137,729	0	284,885	0	220,434	67,839	710,887
Total funds requested in principle (US \$)			1,891,000	0	4,354,678	0	3,369,484	1,036,962	10,652,125

(VII) Request for funding for the first tranche (2017)		
Agency	Funds requested (US \$)	Support costs (US \$)
UNIDO	595,746	41,702
World Bank	907,525	63,527
Italy	250,000	32,500

Funding request:	Approval of funding for the first tranche (2017) as indicated above
Secretariat's recommendation:	For individual consideration

PROJECT DESCRIPTION

24. On behalf of the Government of Argentina, UNIDO as the lead implementing agency, has submitted to the 79th meeting stage II of the HCFC phase-out management plan (HPMP) at the total cost of US \$12,824,415³, consisting of US \$4,015,070, plus agency support costs of US \$281,055 for UNIDO, and US \$7,970,365, plus agency support costs of US \$557,926 for the World Bank, as originally submitted⁴. The implementation of stage II of the HPMP will phase out 125.01 ODP tonnes of HCFCs to meet 48 per cent reduction in HCFC consumption by 2022, as originally submitted.

25. The first tranche for stage II of the HPMP being requested at this meeting amounts to US \$4,944,198, consisting of US \$1,435,000, plus agency support costs of US \$100,450 for UNIDO, and US \$3,185,746, plus agency support costs of US \$223,002 for the World Bank, as originally submitted.

Status of implementation of stage I of the HPMP

26. The progress on implementation of stage I of the HPMP for Argentina, including the status of funds disbursement, is presented in paragraphs 1 to 23 above.

Stage II of the HPMP

Remaining eligible consumption in Argentina

27. After deducting 83.53 ODP tonnes of HCFCs associated with stage I of the HPMP and 115.19 ODP tonnes⁵ proposed for stage II, the remaining consumption of HCFCs eligible for funding amounts to 178.79 ODP tonnes, as shown in Table 1.

Table 1: Overview of the remaining HCFC consumption eligible for funding (ODP tonnes)

HCFC	Starting point	Reduction in stage-I	Remaining consumption	Reduction in stage II	Remaining consumption
HCFC-22	266.20	59.57	206.63	42.84	163.79
HCFC-123	1.57	0	1.57	0	1.57
HCFC-124	0.83	0	0.83	0	0.83
HCFC-141b*	94.57	23.96	70.61	70.61	0
HCFC-142b	14.34	0	14.34	1.74	12.60
Total (ODP tonnes)	377.51	83.53	293.98	115.19	178.79

*Additional non-eligible 9.82 ODP tonnes of HCFC-141b beyond the starting point are also being phased out.

HCFC consumption and sector distribution

28. The 2012-2016 HCFC consumption is shown in Table 1 of stage I of the HPMP. Table 2 presents the distribution of HCFC use among sectors as reported in the country programme (CP) data for 2016.

³ This figure does not include an additional project for US \$222,048 to phase out 1.19 ODP tonnes of HCFCs in the XPS foam sector added during the project review process.

⁴ As per the letter of 20 April 2017 from the Ministry of External Relations of Argentina to the Secretariat.

⁵ A larger tonnage of HCFC will be phased out, but only 115.19 ODP tonnes are deducted from the remaining eligible consumption. The reason for this is that 80.43 ODP tonnes of HCFC-141b will be phased out but there are only 70.61 ODP tonnes in the remaining eligible consumption to be deducted.

Table 2. Distribution of HCFC use by sector and substance (2016)

Substance	Aerosol	Foam	Fire Fighting	Solvent	Refrigeration Manufacturing	Total Manufacturing	Servicing	Total	Percentage (%)
Metric tonnes (mt)									
HCFC-22	4.40	26.00	0	0	165.00	195.40	2,316.10	2,511.50	68.7
HCFC-141b	3.00	513.60	0	0	0	516.60	116.00	632.60	17.3
HCFC-141b in imported pre-blended polyol	0	228.00	0	0	0	228.00	0	228.00	6.2
HCFC-142b	0.06	18.30	0	0	0	18.36	129.30	147.66	4.0
HCFC-123	0		82.10	0	0	82.10	29.30	111.40	3.0
HCFC-124	0			0	0	0	24.80	24.80	0.7
Total (mt)	7.46	785.90	82.10	0	165.00	1,040.46	2,615.50	3,655.96	100.0
Total (%)	0.2	21.5	2.2	0.0	4.5	28.5	71.5	100.0	n/a
ODP tonnes									
			0						
HCFC-22	0.24	1.43	0	0	9.08	10.75	127.39	138.13	56.3
HCFC-141b	0.33	56.50	0	0	0	56.83	12.76	69.59	28.4
HCFC-141b in imported pre-blended polyol	0	25.08	0	0	0	25.08	0	25.08	10.2
HCFC-142b	0	1.19	0	0	0	1.19	8.40	9.60	3.9
HCFC-123	0	0	1.64	0	0	1.64	0.59	2.23	0.9
HCFC-124	0	0	0	0	0	-	0.55	0.55	0.2
Total (ODP tonnes)	0.58	84.20	1.64	0	9.08	95.49	149.68	245.17	100.0
Total (%)	0.2	34.3	0.7	0.0	3.7	38.9	61.1	100.0	n/a

29. The refrigeration servicing sector is the largest HCFC-consuming sector in Argentina (61 per cent in ODP tonnes). It also consumes more than 90 per cent of the HCFC-22 in the country. In 2016, the manufacturing sectors only represented 38.9 per cent of the HCFC consumption; with 34.3 per cent in the foam sector (i.e. 33.3 per cent in PU foam and one per cent in XPS foam) and 4.6 per cent in the refrigeration manufacturing, aerosol and fire-fighting sectors.

HCFC consumption in manufacturing sectors

Foam manufacturing sector

30. HCFC-141b continues to be used by more than 200 small and medium-sized enterprises (SMEs) in the manufacturing of rigid PU foam applications, with a small amount used in flexible moulded and integral skin. In addition, small quantities of HCFC-22 and HCFC-142b are used in the manufacturing of XPS insulation boards. Details of the HCFC consumption by foam application are shown in Table 3 below.

Table 3. Estimated distribution of HCFC use in PU and XPS foam applications (2015)

Application	Consumption (mt)				Percentage (%)
	HCFC-141b	HCFC-22	HCFC-142b	Total	
PU foam					
Domestic refrigeration	78.00	0	0	78.00	10
Commercial refrigeration	80.25	0	0	80.25	10
Continuous and discontinuous panels	93.89	0	0	93.89	12
Pipe and tank insulation	34.18	0	0	34.18	4
Spray	213.85	0	0	213.85	27
Pour in place	130.34	0	0	130.34	17
Doors filling	25.67	0	0	25.67	3
Block	38.78	0	0	38.78	5
Flex-moulded	25.07	0	0	25.07	3
Blinds, thermoware, floating	1.67	0	0	1.67	0
XPS foam					
Insulation boards		33.04	24.72	57.76	7
Total	721.68	33.04	24.72	779.44	100

31. The PU foam manufacturers procure HCFC-141b mostly in pre-blended form from systems houses and importers (i.e., Alkanos, BASF, Dow, Ecopur, Huntsman, Poliresinas San Luis and Química del Caucho). Table 4 shows HCFC consumption in 2015 for each systems house and the number of downstream users.

Table 4. Consumption of HCFC-141b by systems houses and their downstream users in Argentina

System house	Characteristics	Number of downstream users	2015 HCFC consumption, (kg)
Alkanos	Local systems house	16	96,021
BASF	Non-Article 5 systems house with local facilities	44 ⁶	166,211
Dow	Non-Article 5 systems house with local facilities	16 ⁷	101,052
Ecopur	Importer of formulated polyols. Local addition of blowing agent	42	47,847
Huntsman	Importer of PU systems (fully formulated polyol and MDI)	37	134,796
Poliresinas San Luis	Local systems house	16	28,442
Química del Caucho	Importer of PU systems (fully formulated polyol and MDI)	35	89,568
Total		206*	663,937

*Four have consumption above 20 mt, 16 have consumption between 10 mt and 20 mt, 99 have consumption between 1 and 10 mt and the remaining 87 have consumption below one mt. Out of the 206 downstream users identified, 160 were considered eligible for funding.

Refrigeration and AC manufacturing sector

32. *Commercial and industrial refrigeration manufacturing:* Total consumption of HCFC-22 in this sector is around 165 mt, out of which 93 mt were charged at the manufacturing site, while the rest was charged in the location where the system is installed. The sector is composed mainly of locally owned SMEs (around 63), most of which manufacture products for both subsectors and consume less than 2 mt per year. Around 12 enterprises produce water coolers and dispensers, and seven medium sized enterprises and several SMEs manufacture condensing units and can be considered part of the installation and assembly subsector, as the refrigerant is used for first charge in the end-user's location.

⁶ Including 24 downstream users with consumption > 100 kg through Alisa, a BASF distributor.

⁷ Including 6 downstream users with consumption > 100 kg through Polytal S.R.L. and Polycoat, Dow distributors.

33. HCFC-22, R-404A and R-407C are the most common refrigerants used for condensing units, and small amounts of CO₂ are used in two supermarket systems. In the industrial refrigeration subsector 95 per cent of the refrigerant is ammonia, used by around 3,000 food processing enterprises in 10,000 to 15,000 installations (e.g., freezing lines, cheese and ice cream factories and ice production).

34. *Air-conditioning (AC) manufacturing:* The use of HCFC-22 in the domestic AC sector was phased out in stage I of the HPMP. The main refrigerant used in this sector is R-410A followed by small amounts of R-407C. No HCFC is used in the mobile AC manufacturing sector, where the main refrigerant used is HFC-134a. There are 12 importers and/or manufacturers of chillers. A total of 92 mt of HCFC-22 and 135 mt of HCFC-123 are currently installed in around 2,000 chillers, with HCFC consumption below 2 mt/year for servicing. An additional 3,000 chillers were identified using HFCs and 200 using ammonia. Although there are around 20 absorption chillers installed in the country, technicians are not qualified yet to service this type of technology.

Aerosol sector

35. Most aerosol products in Argentina have been produced with HCs as propellant since 1992, when national regulations banned the use of ODS, except for metered-dose inhalers (MDIs) and those used in the electronic subsector. Around five per cent of the aerosol production uses HCFCs due to non-flammability requirements. Sixteen enterprises use HCFC to manufacture party aerosols, contact cleaners, lubricants, insulators, dust blowers, and cold pain-relief products.

36. HCFC-22, HCFC-141b and HCFC-142b are used as active ingredients in cleaning applications for dissolving other active ingredients (e.g. lubricants, insulators, adhesives), and HCFC-22 is also used as propellant. A blend of HCFC-22, butane and di-methyl ether (DME) is used for artificial snow. HCFC-22 and HCFC-141b are used in electronic contact cleaners, lubricants and insulators. Blowers (particle removers) consist of pure HCFC-22 and cold pain-relief aerosol dispenses HCFC-141b with about 10 per cent of HCFC-22 as propellant. Since 2014, HCFC consumption has been replaced by HFC-134a due to an increase in HCFC prices.

Fire extinguisher sector

37. There are four fire-extinguisher manufacturers and 42 enterprises that offer servicing and recharging of fire extinguishers. HCFC-123 and small amounts of HCFC-141b are used in this sector. The technically most suitable replacement for halon-1211 in portable fire extinguishers would be HFC-236fa. However, because of the very high price of this product, as well as its very high GWP (6,300), there are several HCFC-123-based products in the market.

HCFC consumption in the refrigeration servicing sector

38. According to the survey performed on 2,658 service workshops, there are close to 11,000 refrigeration technicians working for approximately 6,000 to 6,500 service workshops.

39. Standard service workshops are small, managed by their owners and composed of one to two technicians with academic qualifications. It is also estimated that 80 to 85 per cent of the workshops are formally constituted. Technicians provide service to a wide range of refrigeration appliances and equipment (e.g. domestic, commercial, industrial, and mobile AC). Around 50 per cent of service workshops have equipment provided under the national CFC phase-out plan and the HPMP. In addition, a total of 10,930 technicians received training and 3,636 received tools under these plans. Under the recovery, recycling and reclamation programme implemented in Argentina, a total of 122 mt of HCFC-22 have been recovered, 105 mt have been reused and 4.4 mt have been reclaimed.

40. HCFC-22 represents 55 per cent of the refrigerants used in the servicing sector, followed by HFC-134a (20 per cent) and R-410A (6 per cent). An estimation of the demand for HCFC-22 in the refrigeration servicing sector is presented in Table 5.

Table 5. Estimation of demand for HCFC-22 in the refrigeration servicing sector (2015)

Application	HCFC-22 based units	Refrigerant charge		Number of top-up repairs	Top-up amount (kg/unit)	Service demand	
		mt	ODP tonnes			mt	ODP tonnes
Air-conditioning	8,500,000	90,000	4,950	2,100,000	0.95	1,995	110
Commercial and industrial refrigeration	1,250,000	5,250	289	200,000	4.00	800	44
Total	9,750,000	95,250	5,239	2,300,000		2,795	154

41. Due to the recent opening of a large number of small food retailers in major cities, the sale of commercial refrigeration systems has increased and is expected to continue growing 3.5 to 5 per cent up to 2018.

Proposed activities in stage II of the HPMP

42. The activities to be implemented during stage II include the total phase-out of HCFCs in the PU and XPS foam manufacturing sectors, assistance to the refrigeration servicing sector and monitoring of HCFC-22 production.

Activities in the manufacturing sector

PU foam manufacturing sector

43. Stage II includes the complete phase-out of 731.17 mt (80.43 ODP tonnes) of HCFC-141b used in the PU foam manufacturing sector by 1 January 2022 through:

- (a) The conversion of the two PU foam enterprises (Friostar and Argenpur) to cyclopentane for rigid PU and block, and to HFO reduced with water for spray foam, with the phase-out of 67.24 mt (7.40 ODP tonnes) of HCFC-141b;
- (b) Seven umbrella projects implemented through seven systems houses and distributors to convert 160 eligible SMEs to reduced HFO formulations, with the phase-out 545.06 mt (59.96 ODP tonnes) of HCFC-141b;
- (c) Additional assistance under the systems houses project to address the phase-out of the remaining consumption of 29.64 mt (3.26 ODP tonnes) in the starting point, consumed by non-identified enterprises; and
- (d) A ban on the import of HCFC-141b, pure and pre-blended in formulated polyols to enter into force on 1 January 2022. While conversions are expected to take place by 2020, the additional time was determined given the current uncertainty of the HFO market situation over the next 5-year period, and to allow for contingencies in converting SMEs.

44. Incremental capital cost (ICC) for the conversion of Friostar and Argenpur (blocks) to cyclopentane includes HC storage and blending items (US \$20,000 to US \$89,000); retrofit of foam dispensers (US \$145,000) and a high-pressure foam dispenser (US \$180,000); plant safety for ventilation, electrical heating modification, gas sensors, fire protection system, lightning protection and grounding, antistatic floor and safety audit (US \$89,000 and US \$209,000); and trials and commissioning (US \$45,000 to US \$50,000). The ICC for the conversion of Argenpur (spray) to HFO includes cooling

system for HFO based formulations (US \$5,000) and technical assistance, trials and testing (US \$15,000). Contingencies were calculated at 10 per cent of the capital cost for individual conversions.

45. The ICC for the two local systems houses include support to develop foam formulations (US 30,000 each), thermal conductivity tester (US \$35,000), and cooling systems for blending tanks (US \$15,000). An additional US \$1,000 per downstream user is included for project management. At the downstream user level, ICC includes cooling system for HFO based formulations (US \$5,000); testing and trials (US \$15,000/enterprise for consumption above 10 mt, US \$10,000/enterprise for consumption between 10 and one mt, US \$3,000/enterprise for consumption between one mt and 500 kg, and US \$1,300/enterprise for consumption between 500 kg and 100 kg). Contingencies are calculated at 10 per cent of the capital cost.

46. IOCs are estimated at between US \$0.36 and US \$0.40/kg for cyclopentane, and US \$10.56 for reduced HFO formulations. For non-SMEs, funds requested for IOCs are equal to or below US \$5.00/kg.

47. In addition US \$324,874 is being requested under the systems houses project to address the phase-out of the remaining consumption of 29.64 mt (3.26 ODP tonnes) in the starting point, consumed by non-identified enterprises based on the cost-effectiveness threshold of US \$10.96/kg.

XPS foam manufacturing sector

48. Stage II also includes the conversion of two XPS foam manufacturing enterprises (Celpack⁸ and Perfiles Revestidos⁹) to CO₂ and ethanol. The project will phase out 57.29 mt (3.42 ODP tonnes of HCFC-22 (30.52 mt or 1.68 ODP tonnes) and HCFC-142b (26.77 mt or 1.74 ODP tonnes).

49. The ICC for the conversion of Celpack includes CO₂ and ethanol/DME storage tanks (US \$111,000); new extrusion line (US \$381,500); safety-related equipment (US \$127,500); training, technical assistance, trials, testing and safety audit (US \$75,000); and contingencies (10 per cent of the capital cost). Incremental operational savings amount to US \$54,725. The total incremental cost of the project is US \$709,775. Applying the cost-effectiveness threshold for XPS foam (US \$10.28/kg), a total of US \$366,715 is being requested from the Fund; the remaining US \$343,060 will be co-financed by the enterprise.

50. The ICC for the conversion of Perfiles Revestidos includes CO₂ and ethanol/DME storage tanks (US \$111,000); new extrusion line (US \$656,500); safety-related equipment (US \$62,500); training, technical assistance, trials, testing and safety audit (US \$65,000), and contingencies (10 per cent of the capital cost). Incremental operational savings amount to US \$139,000. The total incremental cost of the project is US \$845,500. Applying the cost-effectiveness threshold for XPS foam (US \$10.28/kg), a total of US \$222,048 is being requested from the Fund; the remaining US \$623,452 will be co-financed by the enterprise.

51. The total cost of the PU foam sector plan and the XPS foam investment project is presented in Table 6.

⁸ Original submission included a proposal to convert Celpack to butane for US \$366,715 (incremental cost US \$1,170,656). Upon the enterprise's request, during the project review process the original proposal was replaced with a revised proposal to convert to CO₂/ethanol.

⁹ Original submission did not include the project for Perfiles Revestidos; it was incorporated during the project review process in order to address all the eligible HCFC consumption in the XPS foam sector.

Table 6. Total cost for the conversion of the PU and XPS foam sectors

Project	Enterprises	HCFC consumption		Incremental cost (US \$)			Funds request (US \$)	C.E. US \$/kg
		mt	ODP tonnes	ICC	IOC	Total		
Individual projects PU foam								
Friostar	1	38.92	4.28	466,400	14,049	480,449	380,897	9.79
Argenpur	1	28.33	3.12	465,300	42,281	507,581	277,230	9.79
Subtotal individual	2	67.24	7.40	931,700	56,330	988,030	658,127	9.79
Systems houses (SH)								
Alkanos	16	96.02	10.56	349,160	1,014,004	1,363,164	1,052,584	10.96
BASF	40	147.51	16.23	430,710	1,236,131	1,666,841	1,549,078	10.50
Dow	8	45.35	4.99	135,930	478,926	614,856	497,149	10.96
Ecopur	38	46.59	5.13	363,270	492,017	855,287	510,738	10.96
Huntsman	29	121.95	13.41	462,730	1,124,294	1,587,024	1,302,231	10.68
P. San Luis	11	16.94	1.86	242,090	178,913	421,003	185,720	10.96
Q. del Caucho	18	70.70	7.78	287,500	746,564	1,034,064	774,970	10.96
Assistance remaining consumption	*	29.64	3.26	0	0	0	324,874	10.96
Subtotal SH	160	574.70	63.22	2,271,390	5,270,850	7,542,240	6,197,344	10.78
Subtotal PU foam	162	641.94	70.61	3,203,090	5,327,179	8,530,269	6,855,470	10.68
XPS foam								
Celpack	1	35.70	2.23	764,500	(54,725)	709,775	366,715	10.28
Perfiles Revestidos**	1	21.60	1.19	984,500	(139,000)	845,500	222,048	10.28
Subtotal XPS foam	2	57.30	3.42	1,749,000	(193,725)	1,555,275	588,763	10.28
Total foam sector	164	699.24	74.03	4,952,090	5,133,454	10,085,544	7,444,234	10.65
Additional non-eligible consumption being phased out	*	89.23	9.82	n/a	n/a	n/a	n/a	n/a

*Unknown.

**Project for Perfiles Revestidos was added during the project review process on 1 June 2017.

Activities in the refrigeration servicing sector

52. Stage II of the HPMP also proposes to phase out 748.36 mt (41.16 ODP tonnes) of HCFC-22 used in the refrigeration servicing sector with a total cost of US \$3,591,070 (calculated at US \$4.80/kg). An overview of activities to be implemented in this sector is summarized below:

- (a) *Training and equipment for technicians in the AC and commercial refrigeration servicing sector (US \$2,624,070)*: This includes development of training courses; update of technicians training manuals; development of a guide on energy efficiency and good practices; distribution of equipment to 12 training centres and 1,000 service kits among trained technicians (i.e., HC manifolds, HC leak detectors, charging scale and HC tank stand, vacuum pump, evacuation hose, hand tools and HC cans; flushing equipment); and training of 15 trainers and 4,000 technicians on *inter-alia* best practices working with emerging alternatives (HC, ammonia, CO₂), appropriate cleaning and flushing techniques, recovery and management of HCFC and HFC refrigerants, available and emerging alternatives to HCFC and HFC refrigerants, and impact of installation and good service practices on energy efficiency of systems;
- (b) *Certification of technicians in the handling and use of flammable refrigerants (US \$396,000)*: This includes the development of a refrigeration technician certification scheme for handling flammable refrigerants; the establishment of provincial certification bodies; the development of an e-learning scheme for technicians; and certification to technicians that have successfully completed the theoretical and practical examination. The certification scheme will have capacity to certify 1,000 technicians per year; and

- (c) *Technical assistance (TA) to reduce refrigerant leaks in supermarkets (US \$471,000):* This component proposes expert advice for 40 supermarkets comprising an induction workshop; system diagnostic visits to review the condition of the refrigeration/AC systems and provide recommendations on ways to reduce leakages; follow-up visits for a year to monitor implementation of recommendations and action plan proposed by the expert; a report containing major findings from the monitoring of the refrigeration/AC systems, including cost and financial/environment benefits of applying the leakage reduction recommendations; a workshop for supermarket managers to report and demonstrate experience collected and recommendations; and dissemination of information to other supermarkets;
- (d) *Public awareness activities¹⁰ (US \$100,000):* It includes activities to increase consumer's awareness on HCFC-free products (e.g., media campaign, dissemination material, press conferences, participation in specialized exhibitions).

Policy measures, project implementation and monitoring unit (PMU) and monitoring of HCFC production

53. The following non-investment activities are proposed to support and ensure sustainability of the HCFC phase-out projects: public awareness (already described under servicing); improvement of the quota and licensing system; standards, bans and policy control; coordination and monitoring of the HPMP (US \$424,000); and a project monitoring and implementation unit for the implementation of the foam sector projects (US \$672,180).

54. In addition, US \$76,000 are requested to continue monitoring yearly domestic HCFC production and stockpiles including verification visits by experts; strengthening of the management information system to track domestic sales and monitor the movement of stockpiles; and production of quarter reports (as done during stage I).

Total cost of stage II of the HPMP

55. The total cost of stage II of the HPMP for Argentina to be funded has been estimated at US \$12,207,484, as originally submitted (excluding support costs). The proposed activities will result in the phase-out of 115.19 ODP tonnes of HCFCs representing 28.7 per cent of the HCFC baseline, with a cost-effectiveness of US \$8.43/kg, as summarized in Table 7.

Table 7. Total cost of stage II of the HPMP for Argentina

Activity	Agency	HCFC phase-out		Total cost (US \$)	CE (US \$/kg)
		(mt)	(ODP tonnes)		
Subtotal individual projects PU foam	World Bank	67.24	7.40	658,127	9.79
Subtotal systems houses PU foam		574.70	63.22	6,197,344	10.78
Subtotal XPS foam		57.30	3.42	588,763	10.28
Sub-total PU and XPS foam		699.24	74.03	7,444,234	10.65
Training and equipment for technicians	UNIDO	546.73	30.07	2,624,070	4.80
Technicians certification		82.55	4.54	396,000	4.80
TA for supermarkets		98.18	5.40	471,000	4.80
Public awareness		20.91	1.15	100,000	4.78
Subtotal servicing		748.36	41.16	3,591,070	4.80
Monitoring of HCFC-22 production	World Bank	0	0	76,000	0
PMU	World Bank	0	0	672,180	0
	UNIDO	0	0	424,000	0
Total		1,447.60	115.19	12,207,484	8.43

¹⁰ This component, originally submitted as part of the PMU, has been grouped with the activities in the servicing sector submitted at a cost-effectiveness of US \$4.80/kg. The PMU is addressed separately.

Activity	Agency	HCFC phase-out		Total cost (US \$)	CE (US \$/kg)
		(mt)	(ODP tonnes)		
Additional non-eligible tonnage to be phased out in the PU foam sector		89.23	9.82	0	0
Total HCFC phase out in stage II		1,536.83	125.01	0	0
Total UNIDO					4,015,070
Total World Bank					8,192,414

Activities planned for the first tranche

56. The first funding tranche of stage II of the HPMP at the total amount of US \$4,620,746 will be implemented until December 2019, and will include: initiation of the conversion of individual projects and systems house projects in the PU and XPS foam sectors (US \$2,888,874); provision of part of the equipment kits for refrigeration and continuation of the training of technicians on good servicing practices (US \$900,000); initiation of the technicians certification programme (US \$150,000); start of the technical assistance project to reduce refrigerant leaks in supermarkets (US \$200,000); monitoring of HCFC-22 production for the years 2017 and 2018 (US \$28,000); awareness activities (US \$35,000); and monitoring and coordination (US \$418,872).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

57. The Secretariat reviewed stage II of the HPMP for Argentina in light of stage I, the policies and the guidelines of the Multilateral Fund, including the criteria for funding HCFC phase-out in the consumption sector for stage II of HPMPs (decision 74/50), and the 2017-2019 business plan of the Multilateral Fund.

Overarching strategy for stage II

58. Stage II, as submitted, proposed activities in the PU foam, XPS foam and refrigeration servicing sectors. Taking into consideration that with the PU foam sector plan alone (80.43 ODP tonnes) Argentina could achieve compliance with the next HCFC consumption target (35 per cent reduction from the baseline in 2020), the Secretariat requested justification for the remaining activities included in stage II.

59. UNIDO indicated that the Government's strategy to prioritize the phase-out in both the PU and XPS foam sectors is in line with existing policies aimed at phasing out first those HCFCs with higher ODP and in the manufacturing sectors. By addressing all eligible enterprises in the PU foam sector, the Government will be able to establish a ban on the import and use of HCFC-141b pure or contained in imported pre-blended polyols for the manufacture of PU foam by 1 January 2022, thus ensuring the phase-out of an additional 9.82 ODP tonnes of non-eligible consumption in the sector. The Government will also establish a ban on the import and use of HCFC-22 and HCFC-142b for the manufacture of XPS foam by 1 January 2022.

60. In addition, the refrigeration servicing sector component is required to continue activities being implemented under stage I, and to achieve additional HCFC reductions. The economic situation and difficulties with imports in recent years slowed down the industry, market demand and consumption of HCFCs; however, as the economy is normalizing, it is expected that consumption will resume its growth in the absence of the proposed activities. Considering that 61 per cent of the HCFC consumption is in this sector, the impact of the activities implemented will have an impact in maintaining compliance with the Montreal Protocol.

Technical and cost issues related to the PU foam sector plan*Enterprises included*

61. During the project review process it was found that a total of 22 enterprises with an estimated consumption of 84.76 mt (9.32 ODP tonnes) included for funding in the systems houses proposal were ineligible either because of the cut-off date or because they had already received funding in the past to convert to a final technology (i.e., cyclopentane, water, methylene chloride). On this basis, the tonnage and funding associated with these enterprises were removed from the systems house projects. It was also agreed to remove the requested assistance to address 29.64 mt (3.26 ODP tonnes) associated with ineligible and very small enterprises not identified in the survey.

62. Given the difficulty of collecting data from very small enterprises at the preparatory stage, it was agreed, as for other similar projects assisting SMEs through system houses, that the World Bank would report at each tranche on the eligibility of enterprises receiving assistance, as they are incorporated into the implementation of the HPMP. The World Bank agreed to continue updating the list of enterprises, and ensuring that funding would only be provided to eligible enterprises and lines¹¹. Funding associated with enterprises found to be non-eligible for funding would be returned to the Fund.

HCFC-141b consumption addressed by the PU foam sector plan

63. The level of HCFC-141b consumption identified in the PU foam sector (731.17 mt or 80.43 ODP tonnes) is larger than the remaining eligible consumption of HCFC-141b as per the stage I Agreement between the Government and the Executive Committee (641.91 mt or 70.61 ODP tonnes). However, as the aggregate consumption by all eligible enterprises identified in the projects is lower than the remaining eligible consumption, all of them can receive assistance. The remaining HCFC-141b consumption by ineligible enterprises will be deducted from the remaining eligible consumption. Table 8 shows the eligible and ineligible consumption in the sector as submitted and after project review.

Table 8. HCFC-141b consumption addressed by the PU foam sector plan

Activity	As submitted		After review	
	Mt	ODP tonnes	mt	ODP tonnes
Eligible consumption				
Individual projects	67.24	7.40	*60.53	6.66
Umbrella project	545.06	59.96	**467.02	51.37
Total eligible consumption	612.30	67.35	527.54	58.03
Ineligible within starting point (can be deducted)	29.64	3.26	114.39	12.58
Ineligible beyond starting point (cannot be deducted)	89.23	9.82	89.23	9.82
Total HCFC-141b consumption in PU foam	731.17	80.43	731.17	80.43

* One individual project (Argenpur spray) was moved to the systems houses projects

**Includes the removal of 22 ineligible enterprises and the addition of one individual project (Argenpur spray) in the systems houses projects

Second-stage conversions

64. The Secretariat identified 38 enterprises that had already received funding to convert from CFC-11 to HCFC-141b. In accordance with decision 74/50(b)(i), all eligible enterprises included in stage II are eligible for full funding of eligible incremental costs, as it has been clearly demonstrated that all of them are converting to low-GWP technologies.

¹¹ Paragraph 7(c) of the template Agreement for stage II of the HPMP agreed at the 76th meeting addresses this situation.

Availability of technology selected in the local market

65. In line with decision 74/20(a)(iii)¹², the World Bank provided letters from two HFO suppliers confirming the commercial availability of HFOs in Argentina for the consumption of systems houses and PU foam enterprises from 2018 onward. The World Bank also indicated that no issues are foreseen for the supply of polyols and other additives associated with the technology.

Incremental cost

66. The incremental costs in the PU foam proposal submitted under stage II were largely consistent with comparable projects addressing SMEs approved in other Article 5 countries. The Secretariat and the World Bank discussed in detail specific items where there were differences, and used previous approvals as reference when needed.

67. With regard to the two individual projects converting to cyclopentane, main adjustments were applied to equipment (i.e., retrofit of foam dispensers and mixing heads were reduced from US \$145,000/90,000 to US \$100,000/60,000 depending on the case) and safety items (i.e., ventilation, electrical modifications, alarms, nitrogen generators and fire and lightning protection were reduced from US \$209,000 to US \$140,500 in one enterprise). Minor cost adjustments were also made to technical assistance, trials and testing. The World Bank also agreed not to request funding for incremental operational costs for these two projects (initially submitted at US \$0.40/kg).

68. It was also agreed that an individual project to convert the use of 6.71 mt in spray foam to reduced HFO would be integrated into the umbrella project through systems houses, as it would facilitate implementation and reduce costs for technical assistance, trials and testing.

69. For the umbrella project through systems houses, the Secretariat and the World Bank discussed costs related to assistance for developing formulations and thermal conductivity testers for two local systems houses; the need for cooling systems; and the cost of technical assistance, trials and testing. As a result, incremental capital costs (ICC) were adjusted by US \$1,610,170. The level of IOC agreed was similar to that of neighbouring countries, resulting in a reduction of US \$1,189,561.

70. The agreed costs for the PU foam sector are presented in Table 9.

Table 9. Agreed activities and costs for the foam sector

Project	Enterprises	HCFC consumption		Incremental cost (US \$)			Agreed costs (US \$)	C.E. US \$ /kg
		mt	ODP tonnes	ICC	IOC	Total		
Friostar	1	38.92	4.28	336,050	0	336,050	336,050	8.64
Argenpur block	1	21.61	2.38	211,524	0	211,524	211,524	9.79
Subtotal individual	2	60.53	6.66	547,574	0	547,574	547,574	9.05
SH								
Alkanos	16	96.02	10.56	123,935	875,712	999,647	999,647	10.41
BASF	20	107.98	11.88	80,390	834,565	914,955	914,955	8.47
Dow	8	45.35	4.99	32,530	413,610	446,140	446,140	9.84
Ecopur	38	46.59	5.13	127,870	424,937	552,807	510,763	10.96
Huntsman	28	92.55	10.18	118,530	844,010	962,540	962,540	10.40
Poliresinas San Luis	12	22.03	2.42	104,865	173,210	278,075	241,438	10.96
Química del Caucho	17	56.50	6.21	73,100	515,244	588,344	588,344	10.41
Subtotal SH	139	467.02	51.37	661,220	4,081,288	4,742,508	4,663,827	9.99
Total PU foam	141	527.55	58.03	1,208,794	4,081,288	5,290,083	5,211,401	9.88

¹² Information from the suppliers on how and when an adequate supply of the technology would be made available to the country for the technologies selected (i.e., HFO 1233zd(E))

Project	Enterprises	HCFC consumption		Incremental cost (US \$)			Agreed costs (US \$)	C.E. US \$ /kg
		mt	ODP tonnes	ICC	IOC	Total		
Non-eligible for funding and deducted from starting point	*	114.39	12.58	n/a	n/a	n/a	n/a	n/a
Non-eligible for funding	*	89.23	9.82	n/a	n/a	n/a	n/a	n/a

*Number of enterprises is unknown. Their consumption will be phased out without assistance from the Fund.

71. As a result of the discussion, the PU foam sector plan will assist 141 eligible enterprises to phase out 58.03 ODP tonnes of HCFC-141b pure or contained in imported/locally pre-blended polyols. Additional non-eligible 22.40 ODP tonnes will be phased out without assistance from the Multilateral Fund, out of which 12.58 ODP tonnes will be deducted from the starting point.

Other manufacturing sectors using HCFC-141b

72. While HCFC-141b will be completely phased out from the PU foam sector, it was noted that there are small amounts of this substance in aerosols, solvents and fire extinguishing applications¹³. UNIDO indicated that the strategy to address aerosol and solvent uses will be included in stage III of the HPMP. The Secretariat asked whether the Government of Argentina would consider imposing a ban on the use of HCFC-141b in fire extinguishing, which is an unsafe practice, but UNIDO indicated that it would be difficult for Argentina to do so at present, as alternative solutions would need to be offered, and their adoption would need to be funded prior to a ban.

XPS foam

73. During the project review process, the Secretariat noted that a project for only one out of two eligible enterprises had been initially submitted. Upon confirmation by the World Bank that the second enterprise was still consuming HCFC and was eligible for funding, additional time was granted for the submission of the proposal. In reviewing the two proposals it was noted that the aggregated HCFC consumption of 57.30 mt (3.42 ODP tonnes) was substantially higher than that reported under the CP implementation report of 33.94 mt (2.12 ODP tonnes)¹⁴. Given the inconsistency, the World Bank agreed to consider the consumption reported under the CP implementation report as the consumption eligible for funding.

74. In addition, the Celpack enterprise, originally converting to isobutene, during the project review process decided to convert to CO₂ and ethanol, like the Perfiles Revestidos enterprise. Given the similarities in size and technology selected, the analysis of incremental costs completed for Perfiles Revestidos was used as reference in estimating the incremental costs for Celpack.

75. Main adjustments in ICC per enterprise were applied to the storage tanks, transfer lines and pumps (from US \$111,000 to US \$95,000); extrusion lines (i.e., primary and secondary twin extruders, CO₂, DME and ethanol metering pumps, from US \$656,500 to US \$113,500) and safety-related items (i.e., gas sensors, ventilation system metering area, extruders, grounding, standby electric generator, lightning protection from US \$62,500 to US \$57,500) and general works (i.e., civil work/plant modification, safety audit, technology transfer training and certification, trials from US \$65,000 to

¹³ HCFC consumption in these sectors is only one per cent of the HCFC consumption.

¹⁴ In accordance with decisions 34/18(a) and 41/16, the Secretariat and implementing agencies cannot submit project proposals which show inconsistencies between project data and the latest reported sectoral consumption data; and implementing agencies need to ensure that they have verified with the NOU the consistency of Article 7 data, CP implementation data, and project phase-out data prior to transmitting projects to the Secretariat for review.

US \$60,000). As a result, the ICC per enterprise including contingencies was agreed at US \$358,600. Deducting the incremental operational savings of US \$139,000, the estimated total incremental cost per enterprise is US \$219,600.

76. Applying the cost-effectiveness threshold for XPS foam (US \$10.27/kg including 25 per cent for the introduction of a low-GWP technology) to the agreed consumption for funding (33.94 mt or 2.12 ODP tonnes), the total cost of the projects is US \$348,767. It was agreed that the Government of Argentina would have flexibility in the allocation of funds among the two enterprises, on the understanding that both enterprises will convert to the selected technology on time.

Refrigeration servicing sector

77. The Secretariat noted that the strategy prepared for the refrigeration servicing sector was comprehensive and would account for 10.3 per cent reduction of Argentina's baseline. However, while a number of activities were included in stage I and stage II to address the use of HCFC-141b as a flushing agent during refrigeration servicing (i.e., training, equipment inclusion in manuals, demonstration), there was not a clear indication that this use of HCFC would be completely phased out. Given the emissive nature of this practice, the Secretariat discussed with UNIDO the need to eliminate it as soon as possible in a sustainable manner. It was agreed that the use of HCFC-141b would be completely phased out during stage II with the assistance received under the servicing sector component, and that a ban on the use of HCFC-141b for flushing would be established by 1 January 2022.

78. With regard to the long-term sustainability of training in good practices in refrigeration and in the safe use of flammable or toxic alternatives, UNIDO indicated that the training programme will be upgraded and a certification scheme for handling flammable refrigerants will be established and incorporated into the national legislation. Part of the plan is to try to make certification compulsory for handling flammable refrigerants. On the plans to reach the more than 3,000 supermarkets in the country to show the results of the leakage prevention project for supermarkets, UNIDO explained that workshops and publications to disseminate the results of the project will be prepared for the main supermarket chains, which own most of the branches in the country.

79. During the project review process, UNIDO indicated that the Government of Italy would be included in stage II of the HPMP, to provide assistance to the certification of technicians in the handling and use of flammable refrigerants and the technical assistance activities to reduce refrigerant leakage in supermarkets. Accordingly, a total of US \$282,500 including agency support cost from the total funds in the refrigeration servicing sector are being reallocated to the Government of Italy and reflected in the draft Agreement between the Government of Argentina and the Executive Committee.

Project implementation and monitoring unit (PMU)

80. Based on discussions on the need for personnel, experts and local consultants to implement the activities in stage II, the cost of the PMU was agreed at US \$740,000 (US \$300,000 for UNIDO and US \$440,000 for the World Bank).

Agreed cost of stage II of the HPMP

81. The agreed cost of the activities proposed in stage II of the HPMP amounts to US \$9,941,238 (excluding agency support cost) as summarized in Table 10.

Table 10. Agreed cost for stage II of the HPMP for Argentina

Activity	Agency	HCFC phase-out		Total cost (US \$)	CE (US \$/kg)
		Mt	ODP tonnes		
Subtotal individual projects PU foam	World Bank	60.53	6.66	547,574	9.05
Subtotal systems houses PU foam		467.02	51.37	4,663,827	9.99
Non-eligible HCFC-141b phased out in PU foam deducted from starting point		114.39	12.58	0	0
Subtotal XPS foam		57.30	3.42	348,767	6.09
Sub-total PU and XPS foam		699.24	74.03	5,560,168	*9.51
Training and equipment for technicians	UNIDO/ Italy	546.73	30.07	2,624,070	4.80
Technicians certification		82.55	4.54	396,000	4.80
TA for supermarkets		98.18	5.40	471,000	4.80
Public awareness		20.91	1.15	100,000	4.78
Subtotal refrigeration servicing		748.36	41.16	3,591,070	4.80
Monitoring of HCFC-22 production	World Bank	0	0	50,000	0
PMU	World Bank	0	0	440,000	0
	UNIDO	0	0	300,000	0
Total		1,447.60	115.19	9,941,238	*7.46
Total UNIDO					3,641,070
Total World Bank					6,050,168
Total Government of Italy					250,000
Non-eligible HCFC-141b phased out in PU foam beyond the starting point		89.23	9.82	0	0

* Cost effectiveness is calculated based exclusively on funded activities. The additional 12.58 ODP tonnes deducted from the starting point are not included in the calculation.

82. Activities funded in stage II of the HPMP for Argentina will result in the phase out of 1,333.21 mt (102.61 ODP tonnes) of HCFCs with an overall cost-effectiveness of US \$7.46/kg. In addition, 114.39 non-eligible mt (12.58 ODP tonnes) will be phased out and deducted from the starting point, achieving a total reduction of 1,447.60 mt (115.19 ODP tonnes) at a cost US \$6.87/kg.

83. With the approval of stage II of the HPMP, Argentina will phase out HCFC consumption in the PU and XPS foam manufacturing sectors. Accordingly, the Government commits to:

- (a) Reducing HCFC consumption by 50 per cent of the baseline by 2022;
- (b) Banning the import and use of HCFC-141b pure or contained in pre-blended polyols for the manufacture of PU foam no later than 1 January 2022;
- (c) Banning the import and use of HCFC-141b for flushing refrigeration circuits during servicing no later than 1 January 2022;
- (d) Banning the import and use of HCFC-22 and HCFC-142b for the manufacture of XPS foam no later than 1 January 2022.

Impact on the climate

84. The conversion of the remaining PU and XPS foam manufacturing enterprises in Argentina would avoid the emission into the atmosphere of some 497 thousand tonnes of CO₂ equivalent per year, as shown in Table 11.

Table 11. Impact on the climate PU and XPS foam projects

Substance	GWP	Tonnes/year	CO ₂ -eq (tonnes/year)
Before conversion			
HCFC-141b	725	527.55	382,470
HCFC-22	1,810	30.52	55,247
HCFC-142b	2,310	26.77	61,846
Total			499,564
After conversion			
Cyclopentane	25	37.38	935
HFO-1233zd	6	261.53	1,569
CO ₂	1	17.67	18
Total			2,522
Impact			(497,042)

85. The proposed activities in the servicing sector, which include better containment of refrigerants through technicians training and provision of equipment, will further reduce the amount of HCFC-22 used for refrigeration servicing. Although a calculation of the impact on the climate was not included in the HPMP, the activities planned by Argentina, in particular its efforts to promote low-GWP alternatives, and refrigerant recovery and reuse, indicate that the implementation of the HPMP will reduce the emission of refrigerants into the atmosphere, therefore resulting in benefits on the climate. Each kilogram of HCFC-22 not emitted due to better refrigeration practices results in savings of approximately 1.8 CO₂-equivalent tonnes.

Co-financing

86. A total of 203.63 tonnes (22.40 ODP tonnes) of HCFC-141b consumed in the PU foam sector by non-eligible enterprises will be phased out through regulations, with the actual cost of conversions, where applicable, assumed by the enterprises. The incremental cost of the two XPS foam enterprises was estimated at US \$439,200, of which US \$348,767 is being funded by the Multilateral Fund, with the difference of US \$90,433 provided by the enterprises.

2017-2019 draft business plan of the Multilateral Fund

87. UNIDO/World Bank and the Government of Italy are requesting US \$10,652,125 including agency support costs for the implementation of stage II of the HPMP. The total value requested of US \$6,245,678 for the period from 2017 to 2019, is US \$1,910,322 below the amount in the business plan between 2017 and 2019.

Draft Agreement

88. A draft Agreement between the Government of Argentina and the Executive Committee for the phase-out of HCFCs in stage II of the HPMP is contained in Annex I to the present document.

RECOMMENDATION

89. The Executive Committee may wish to consider:

- (a) Approving, in principle, stage II of the HCFC phase-out management plan (HPMP) for Argentina for the period 2016 to 2022 to reduce HCFC consumption by 50 per cent of the baseline, in the amount of US \$10,652,125, consisting of US \$3,641,070, plus agency support costs of US \$254,875 for UNIDO; US \$6,050,168, plus agency support costs of

US \$423,512 for the World Bank; and US \$250,000, plus agency support costs of US \$32,500 for the Government of Italy;

- (b) Noting the commitment of the Government of Argentina to:
 - (i) Reduce HCFC consumption by 50 per cent by 2022;
 - (i) Issue a ban on the import and use of HCFC-141b pure or contained in pre-blended polyols for the manufacture of polyurethane foam no later than 1 January 2022;
 - (ii) Issue a ban on the import and use of HCFC-141b for flushing refrigeration circuits during servicing no later than 1 January 2022;
 - (iii) Issue a ban on the import and use of HCFC-22 and HCFC-142b for the manufacture of extruded polystyrene foam no later than 1 January 2022;
- (c) Deducting 115.19 ODP tonnes of HCFCs from the remaining HCFC consumption eligible for funding;
- (d) Approving the draft Agreement between the Government of Argentina and the Executive Committee for the reduction in consumption of HCFCs, in accordance with stage II of the HPMP, contained in Annex I to the present document; and
- (e) Approving the first tranche of stage II of the HPMP for Argentina, and the corresponding tranche implementation plans, in the amount of US \$1,891,000, consisting of US \$595,746, plus agency support costs of US \$41,702 for UNIDO, US \$907,525, plus agency support costs of US \$63,527 for the World Bank, and US \$250,000, plus agency support costs of US \$32,500 for the Government of Italy.

Annex I

DRAFT AGREEMENT BETWEEN THE GOVERNMENT OF ARGENTINA AND THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF HYDROCHLOROFLUOROCARBONS IN ACCORDANCE WITH STAGE II OF THE HCFC PHASE-OUT MANAGEMENT PLAN

Purpose

1. This Agreement represents the understanding of the Government of Argentina (the “Country”) and the Executive Committee with respect to the reduction of controlled use of the ozone-depleting substances (ODS) set out in Appendix 1-A (“The Substances”) to a sustained level of 200.35 ODP tonnes by 1 January 2022 in compliance with Montreal Protocol schedule.
2. The Country agrees to meet the annual consumption limits of the 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 all 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 the Substances that exceeds the level defined in row 1.2 of Appendix 2-A as the final reduction step under this Agreement for all of the Substances specified in Appendix 1-A, and in respect to any consumption of each of the Substances that exceeds the level defined in rows 4.1.3, 4.2.3, 4.3.3, 4.4.3 and 4.5.3 (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 the stage II of the HCFC phase-out management plan (HPMP) approved (“the Plan”). In accordance with sub-paragraph 5(b) of this Agreement, the Country will accept independent verification of the achievement of the annual consumption limits of the Substances as 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 eight 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 the form of 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 the form of Appendix 4-A covering each calendar year until and including the year for which the funding 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 of the approved funds, according to the evolving circumstances to achieve the smoothest reduction of consumption and phase-out of the Substances specified in Appendix 1-A:

- (a) Reallocations categorized as major changes must be documented in advance either in a Tranche Implementation Plan as foreseen in sub-paragraph 5(d) above, or as a revision to an existing Tranche Implementation Plan to be submitted eight 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 which would modify any clause of this Agreement;
 - (iii) Changes in the annual levels of funding allocated to 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; and
 - (v) Changes in alternative technologies, on the understanding that any submission for such a request would identify the associated incremental costs, the potential impact to the climate, and any differences in ODP tonnes to be phased out if applicable, as well as confirm that the Country agrees that potential savings related to the change of technology would decrease the overall funding level under this Agreement accordingly;
- (b) Reallocations not categorized as major changes may be incorporated in 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 to be converted to non-HCFC technology included in the Plan and that would be found to be ineligible under the policies of the Multilateral Fund (i.e., due to foreign ownership or establishment post the 21 September 2007 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.

Considerations for the refrigeration servicing sector

8. Specific attention will be paid to the execution of the activities in the refrigeration servicing sector included in the Plan, in particular:

- (a) The Country would use the flexibility available under this Agreement to address specific needs that might arise during project implementation; and
- (b) The Country and relevant bilateral and/or implementing agencies would take into consideration relevant decisions on the refrigeration servicing sector during the implementation of the Plan.

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. UNIDO has agreed to be the lead implementing agency (the “Lead IA”) and the World Bank and the Government of Italy have agreed to be the cooperating implementing agencies (the “Cooperating IAs”) 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 IAs taking part in this Agreement.

10. The Lead IA will be responsible for ensuring co-ordinated planning, implementation and reporting of all activities under this Agreement, including but not limited to independent verification as per sub-paragraph 5(b). The Cooperating IAs will support the Lead IA by implementing the Plan under the overall co-ordination of the Lead IA. The roles of the Lead IA and Cooperating IAs 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 IAs with the fees set out in rows 2.2, 2.4 and 2.6 of Appendix 2-A.

Non-compliance with the Agreement

11. Should the Country, for any reason, not meet the Targets for the elimination of the 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 of 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 ODP 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, and the Lead IA and the Cooperating IAs to facilitate implementation of this Agreement. In particular, it will provide the Lead IA and the Cooperating IAs 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 sub-paragraph 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 sub-paragraphs 1(a), 1(b), 1(d), and 1(e) 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 of the 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

Substance	Annex	Group	Starting point for aggregate reductions in consumption (ODP tonnes)
HCFC-22	C	I	266.20
HCFC-123	C	I	1.57
HCFC-124	C	I	0.83
HCFC-141b	C	I	94.57
HCFC-142b	C	I	14.34
Total	C	I	377.51

APPENDIX 2-A: THE TARGETS, AND FUNDING

Row	Particulars	2017	2018	2019	2020	2021	2022	Total	
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	360.63	360.63	360.63	260.45	260.45	260.45	n/a	
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	330.58	330.58	330.58	260.45	260.45	200.35	n/a	
2.1	Lead IA (UNIDO) agreed funding (US \$)	595,746	0	1,347,217	0	1,334,000	364,107	3,641,070	
2.2	Support costs for Lead IA (US \$)	41,702	0	94,305	0	93,380	25,487	254,875	
2.3	Cooperating IA (World Bank) agreed funding (US \$)	907,525	0	2,722,576	0	1,815,050	605,017	6,050,168	
2.4	Support costs for Cooperating IA (US \$)	63,527	0	190,580	0	127,054	42,351	423,512	
2.5	Cooperating IA (Italy) agreed funding (US \$)	250,000	0	0	0	0	0	250,000	
2.6	Support costs for Cooperating IA (US \$)	32,500	0	0	0	0	0	32,500	
3.1	Total agreed funding (US \$)	1,753,271	0	4,069,793	0	3,149,050	969,124	9,941,238	
3.2	Total support costs (US \$)	137,729	0	284,885	0	220,434	67,839	710,887	
3.3	Total agreed costs (US \$)	1,891,000	0	4,354,678	0	3,369,484	1,036,962	10,652,125	
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this Agreement (ODP tonnes)								42.84
4.1.2	Phase-out of HCFC-22 to be achieved in the previous stage (ODP tonnes)								59.57
4.1.3	Remaining eligible consumption for HCFC-22 (ODP tonnes)								163.79
4.2.1	Total phase-out of HCFC-141b agreed to be achieved under this Agreement (ODP tonnes)								70.61
4.2.2	Phase-out of HCFC-141b to be achieved in the previous stage (ODP tonnes)								23.96
4.2.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)								0
4.3.1	Total phase-out of HCFC-142b agreed to be achieved under this Agreement (ODP tonnes)								1.74
4.3.2	Phase-out of HCFC-142b to be achieved in the previous stage (ODP tonnes)								0
4.3.3	Remaining eligible consumption for HCFC-142b (ODP tonnes)								12.6
4.4.1	Total phase-out of HCFC-123 agreed to be achieved under this Agreement (ODP tonnes)								0
4.4.2	Phase-out of HCFC-123 to be achieved in the previous stage (ODP tonnes)								0
4.4.3	Remaining eligible consumption for HCFC-123 (ODP tonnes)								1.57
4.5.1	Total phase-out of HCFC-124 agreed to be achieved under this Agreement (ODP tonnes)								0
4.5.2	Phase-out of HCFC-124 to be achieved in the previous stage (ODP tonnes)								0
4.5.3	Remaining eligible consumption for HCFC-124 (ODP tonnes)								0.83

*Date of completion of stage I as per stage I Agreement: 31 December 2018.

APPENDIX 3-A: FUNDING APPROVAL SCHEDULE

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

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

1. The submission of the Tranche Implementation Report and Plans for each tranche request will consist of five 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 out of the Substances, how the different activities contribute to it, and how they relate to each other. The report should include the amount of ODS phased out as a direct result from the implementation of activities, by substance, and the alternative technology used and the related phase-in of alternatives, to allow the Secretariat to provide to the Executive Committee information about the resulting change in climate relevant emissions. The report should further highlight 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, uses of the flexibility for 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 of the Plan results and the consumption of the Substances, as per sub-paragraph 5(b) of the Agreement. If not decided otherwise by the Executive Committee, such a verification has to be provided together with each tranche request and will have to provide verification of the consumption for all relevant years as specified in sub-paragraph 5(a) of the Agreement for which a verification report has not yet been acknowledged by the Committee;
- (c) A written description of the activities to be undertaken during the period covered by the requested tranche, 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 also 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 sub-paragraph (b) above;
- (d) A set of quantitative information for all Tranche Implementation Reports and Plans, submitted through an online database; and
- (e) An Executive Summary of about five paragraphs, summarizing the information of the above sub-paragraphs 1(a) to 1(d).

2. In the event that in a particular year two stages of the HPMP are being implemented in parallel, the following considerations should be taken in preparing the Tranche Implementation Reports and Plans:

- (a) The Tranche Implementation Reports and Plans referred to as part of this Agreement, will exclusively refer to activities and funds covered by this Agreement; and

APPENDIX 5-A: MONITORING INSTITUTIONS AND ROLES

1. In Argentina, the National Ozone Unit (OPROZ) is a tripartite coordination office for the Country Programme for the Implementation of the Montreal Protocol (CP). It is composed of a representative of

the Ministry of Environment and Sustainable Development (MAyDS), Ministry of Production (MoP), and Ministry of Foreign Affairs and Worship.

2. OPROZ is coordinated by MAYDS that serves as the Montreal Protocol national focal point. MAYDS is responsible for the tasks related to the implementation of the CP, the control of the import licensing system and the evaluation of consumption data, issuing of reports on a quarterly basis on compliance with the CP, and the reduction of ODS consumption.

3. UNIDO is appointed as the Lead IA of stage II of the HPMP for Argentina. The World Bank and the Government of Italy are the Cooperating IAs.

4. UNIDO will be responsible for the overall management, monitoring of progress, performance verification and reporting to the Fund Secretariat and the Executive Committee. The subprojects of stage II will be implemented by UNIDO, the World Bank and the Government of Italy. The IAs will implement their subprojects according to the respective rules and procedures of UNIDO, the World Bank and the Government of Italy.

5. The World Bank will report to UNIDO on the progress of all the activities under its implementation, which will be incorporated into UNIDO's periodical progress reports. The World Bank will coordinate its activities through the Ministry of Production.

6. UNIDO will work in close cooperation with OPROZ and with the beneficiaries. The work will be carried out under the supervision and guidance of the Project Manager of UNIDO. Necessary local coordination and control will be done by OPROZ.

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 HPMP;
 - (b) Assisting the Country in 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 is reflected in updates of the overall plan and in future Tranche Implementation Plans consistent with sub-paragraphs 1(c) and 1(d) of Appendix 4-A;
 - (e) Fulfilling the reporting requirements for the Tranche Implementation Reports and Plans and the overall plan as specified in Appendix 4-A for submission to the Executive Committee, and should include the activities implemented by the Cooperating IAs;
 - (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 HCFC consumption targets had been met;
 - (g) Ensuring that appropriate independent technical experts carry out the technical reviews;

- (h) Carrying out required supervision missions;
- (i) Ensuring the presence of an operating mechanism to allow effective, transparent implementation of the Tranche Implementation Plan and accurate data reporting;
- (j) Co-ordinating the activities of the Cooperating IAs, and ensuring 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 IAs, 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 policy, management and technical support when required;
- (n) Reaching consensus with the Cooperating IAs on any planning, co-ordination 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 HPMP results and the consumption of the Substances mentioned in Appendix 1-A, as per sub-paragraph 5(b) of the Agreement and sub-paragraph 1(b) of Appendix 4-A.

APPENDIX 6-B: ROLE OF THE COOPERATING IMPLEMENTING AGENCIES

1. The Cooperating IAs 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 IAs, and refer to the Lead IA to ensure a co-ordinated sequence in the 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, co-ordination and reporting arrangements required to facilitate the implementation of the Plan.

APPENDIX 7-A: REDUCTIONS IN FUNDING FOR FAILURE TO COMPLY

1. In accordance with paragraph 11 of the Agreement, the amount of funding provided may be reduced by US \$172.61 per ODP kg 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.

2. In the event that the penalty needs to be applied for a year in which there are two Agreements in force (two stages of the HPMP being implemented in parallel) with different penalty levels, the application of the penalty will be determined on a case-by-case basis taking into consideration the specific sectors that lead to the non-compliance. If it is not possible to determine a sector, or both stages are addressing the same sector, the penalty level to be applied would be the largest.
