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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Seventy-fourth Meeting
Montreal, 18-22 May 2015

PROJECT PROPOSAL: BRAZIL

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

Phase-out

- HCFC phase-out management plan (stage I, fourth tranche) UNDP/Germany

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Brazil

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase out plan (Stage I)	Germany, UNDP (lead)	64th	10% by 2015

(II) LATEST ARTICLE 7 DATA (Annex C Group l)	Year: 2013	1,189.0 (ODP tonnes)

(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)									Year: 2013
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-123									
HCFC-124				0.7	3.0				3.6
HCFC-141b		400.6							400.6
HCFC-141b in Imported Pre-blended Polyol									
HCFC-142b		1.0							1.0
HCFC-22				117.5	666.6				784.1
HCFC-225									

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	1,327.3	Starting point for sustained aggregate reductions:	1,327.3
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	220.3	Remaining:	1,107.2

(V) BUSINESS PLAN		2015	Total
Germany	ODS phase-out (ODP tonnes)	4.6	4.6
	Funding (US $)	454,091	454,091
UNDP	ODS phase-out (ODP tonnes)	52.3	52.3
	Funding (US $)	4,998,750	4,998,750

(VI) PROJECT DATA			2011	2012	2013	2014	2015	Total
Montreal Protocol consumption limits			n/a	n/a	1,327.3	1,327.3	1,194.8	n/a
Maximum allowable consumption (ODP tonnes)			n/a	n/a	1,327.3	1,327.3	1,194.8	n/a
Agreed funding (US$)	Germany	Project costs	1,209,091	2,472,727			409,091	4,090,909
		Support costs	153,000	262,000			45,000	460,000
	UNDP	Project costs	4,456,257	3,400,000	3,000,000	3,000,000	1,650,000	15,506,257
		Support costs	334,219	255,000	225,000	225,000	123,750	1,162,969
Funds approved by ExCom (US$)		Project costs	5,665,348	5,872,727	3,000,000		0.0	14,538,075
		Support costs	487,219	517,000	225,000		0.0	1,229,219
Total funds requested for approval at this meeting (US$)		Project costs	0	0	0	**3,000,000**	0	3,000,000
		Support costs	0	0	0	**225,000**	0	225,000

Secretariat's recommendation:	Blanket approval

PROJECT DESCRIPTION

1. On behalf of the Government of Brazil, UNDP as the lead implementing agency, has submitted to the 74th meeting a request for funding for the fourth tranche[1] of stage I of the HCFC phase-out management plan (HPMP) at the amount of US $3,000,000, plus agency support costs of US $225,000 for UNDP only. The submission includes a progress report on the implementation of the second tranche, and the tranche implementation plan for 2015 to 2016.

Report on HCFC consumption

HCFC consumption

2. The Government of Brazil reported a consumption of 1,189.25 ODP tonnes of HCFC in 2013 and estimated a consumption of 1,164.74 ODP tonnes in 2014. The 2010-2014 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Brazil (2010-2014 Article 7 data)

HCFC	2010	2011	2012	2013	2014*	Baseline
Metric tonnes						
HCFC-22	15,109.28	11,408.80	17,020.03	14,256.36		14,401.0
HCFC-123	19.84	44.31	170.79	0.00		14.9
HCFC-124	316.90	246.94	204.83	164.54		351.3
HCFC-141b	3,579.62	3,710.30	4,027.8	3,641.42		4,741.3
HCFC-142b	105.28	68.69	12.02	14.92		86.3
Total (metric tonnes)	**19,130.92**	**15,478.99**	**21,435.47**	**18,077.27**		**19,594.8**
ODP tonnes						
HCFC-22	831.01	627.48	936.10	784.10		792.1
HCFC-123	0.40	0.89	3.42	0.00		0.3
HCFC-124	6.97	5.43	4.51	3.62		7.7
HCFC-141b	393.76	408.13	443.1	400.56		521.6
HCFC-142b	6.84	4.47	0.78	0.97		5.6
Total (ODP tonnes)	**1,238.98**	**1,046.40**	**1,387.87**	**1,189.25**	**1,164.74**	**1,327.3**

*Preliminary estimate of the total consumption (no data provided for each HCFC imported).

3. The peak in HCFC consumption in 2012 is attributed to a combination of a recovering economy and expectations generated in the market due to the entry into force of the quota system. The reduction in 2013 to a level below ten per cent of the consumption baseline was explained by the overall phase-out efforts made under the HPMP, and the partial conversion of multinational domestic refrigeration enterprises operating in Brazil. It is expected that HCFC-22 consumption will continue to decrease due to an increase in market prices as a result of the control measures.

Country programme (CP) implementation report

4. The Government of Brazil reported sector HCFC consumption data under the 2013 CP implementation report which is consistent with the data reported under Article 7. The 2014 CP report will be submitted by 1 May 2015.

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

Legal framework

5. The Brazilian Association for Technical Standards (ABNT) continues to discuss the standard on the use of ammonia for design, installation, operation and maintenance of refrigeration and

[1] The fourth tranche was originally planned for 2014 but only submitted to the 74th meeting.

air-conditioning (AC) equipment; and the standard on security classification and terminology for refrigerants. A review of ABNT standards for safety in refrigeration systems and pressure vessels for refrigeration is also in progress.

6. Dissemination actions on the HCFC imports control have been carried out targeting the private sector, and training activities and materials have been given to the refrigeration servicing sector with focus on the need and economic feasibility of maintenance of refrigeration and AC systems designed to minimize HCFC-22 leakages, in order to reduce the need for new refrigerant given the reduced import quota in 2015.

Polyurethane (PU) foam manufacturing sector

Conversion of 12 individual PU foam enterprises (79.71 ODP tonnes)

7. This component comprises four continuous panel enterprises converting to hydrocarbon (HC) technology and eight integral skin enterprises converting to methyl formate or methylal technologies. Five enterprises (20.29 ODP tonnes) have completed their conversions, two more (29.98 ODP tonnes) have their equipment installed, and the remaining five are at different stages of implementation. All conversions will be completed in 2015. A summary on the status of progress of individual conversions is presented in Table 2 below.

Table 2. Status of progress of individual PU foam enterprises conversions in Brazil

Enterprises	ODP tonnes*	Status of implementation	Expected date of completion
5 (Isoeste, Cantegrill, Duoflex, Kalf, Frisokar**)	20.29	Completed	-
2 (Isoblock, Luguez***)	29.98	Equipment installed	First half 2015
0	0.00	Equipment procured	End of 2015
3 (Cairu, Danica, Spandy)	14.49	Ongoing procurement and engineering works	End of 2015
2 (Espumatec, Panisol)	14.95	Signed contracts and started implementation	End of 2015
12	**79.71**		-

* Baseline consumption in the approved HPMP.
** As Frisokar completed its conversion two months before the planning date, it still has a residual stock of HCFC-141b.
*** Luguez completed the project; however it will use HCFC-141b in one line until June 2015 while a technical issue is resolved. The enterprise has already phased out half of its HCFC-141b consumption (i.e. 6.6 ODP tonnes).

Conversion of 11 systems houses with close to 300 downstream users (39.5 ODP tonnes)

8. Two systems houses (13.2 ODP tonnes) completed conversion of their plants, developed their formulations based on methyl formate and methylal and are currently assisting downstream users to adopt them. Two additional systems houses (12.5 ODP tonnes) will complete their conversion to low-global-warming (GWP) alternatives (e.g., methyl formate, methylal) during the second quarter 2015. Out of the remaining seven systems houses, five are currently undergoing plant conversions and development of formulations and two have not signed agreements yet.

Conversion of 98 small and medium size enterprises (SMEs) in the rigid PU foam sector (49.6 ODP tonnes)

9. The conversion of SMEs will be done through the assisted systems houses given that this is the most cost-effective way to address them. The systems houses will develop formulations, test them at downstream foam users and, upon optimization, change supply to HCFC-free polyols.

Refrigeration servicing sector

10. The following activities were undertaken:

(a) Training and capacity building: Mobile training units were assembled and distributed to five training institutions; seven additional instructors and 621 technicians working in commercial refrigeration received training;

(b) Demonstration projects: One additional supermarket was selected for demonstration on improvement of containment practices for existing HCFC systems; one technical diagnosis was performed to identify problems causing leakages and efficiency loss in equipment at the supermarket selected; a commercial end-user consulting programme to enhance business decision-making in favour of low-GWP alternatives was created; and several standards continued to be prepared in commercial refrigeration, supermarkets, mini-splits, ammonia systems and central air-conditioning;

(c) Internet-based documentation system: The system was completed after adaptations based on suggestions from the expert committee, and is currently in testing phase; and

(d) Awareness-raising campaign: The project logo, visual identity, website, and manual were prepared; the regional scope of the plan was defined through local groups and associations; several brochures and technical publications including guidelines for the safe use of hydrocarbons were produced and distributed; and the publication of three guides of good refrigeration practices is ongoing.

Project implementation and monitoring unit (PMU)

11. The PMU continued to support the NOU in implementing the HPMP activities by providing technical analysis of the products presented; visiting enterprises to review projects; developing technical specifications; organizing meetings of the process evaluation committee for evaluation and recommendation to issue service agreements; awareness campaigns; and ensuring financial control of the funds according to UNDP rules and regulations.

Level of fund disbursement

12. As of April 2015, of the US $14,538,075 so far approved, US $5,797,863 (39.9%) had been disbursed. The balance of US $8,740,212 will be disbursed in 2015 and 2016 (Table 3).

Table 3. Financial report of stage I of the HPMP for Brazil (US $)

Agency	First tranche		Second tranche		Third Tranche		Total approved	
	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed
UNDP	4,456,257	1,903,109	3,400,000	1,294,587	3,000,000	980,068	10,856,257	4,177,763
Germany	1,209,091	634,858	2,472,727	985,242	0	0	3,681,818	1,620,100
Total	**5,665,348**	**2,537,967**	**5,872,727**	**2,279,829**	**3,000,000**	**980,068**	**14,538,075**	**5,797,863**
Disbursement		**44.8%**		**38.8%**		**32.7%**		**39.9%**

Implementation plan for the fourth tranche of the HPMP

13. The Government of Brazil will implement the following activities:

(a) *PU foam manufacturing sector (UNDP)(US $2,766,552):* Continue ongoing conversions of seven remaining individual enterprises, seven remaining systems houses and their associated downstream users;

(b) *Refrigeration servicing sector (Government of Germany)(Balance from previous tranches):*

(i) Training and capacity building: Provide training to 4,024 refrigeration technicians from commercial refrigeration and 100 refrigeration technicians from domestic refrigeration; and evaluate the training and capacity-building courses;

(ii) Technical assistance and demonstration projects: identify and correct problems causing leaks and loss of efficiency in equipment in selected supermarkets; procure components for replacement and sealing of refrigeration systems; prepare case studies on the results achieved in these supermarkets; and continue discussion and development of technical standards for supermarkets;

(iii) Internet-based documentation system: complete the test phase and introduce the system to users; and

(iv) Dissemination and awareness campaign: continue distributing materials and technical publications, maintaining the website and social media page, promoting the HPMP in events and industry fairs, and meeting with stakeholders in the servicing sector at national and regional level; and

(c) *PMU (UNDP)(US $233,448):* Continue implementation and monitoring of all activities under the HPMP including verification of consumption data for the year 2015.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Verification report

14. By the time of issuance of this document, the verification of HCFC consumption in 2014 was still underway. Therefore, in line with decision 72/19, funds approved under the fourth tranche will not be transferred to UNDP until the Secretariat has reviewed the verification report and confirmed that the Government of Brazil is in compliance with the Montreal Protocol and the Agreement between the Government and the Executive Committee.

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

Legal framework

15. The Government of Brazil has already issued HCFC import quotas for 2015 based on a reduction of the quotas established for 2013 as follows: 6.51 per cent reduction in HCFC-22, 32.37 per cent in HCFC-141b, and no reduction in HCFC-123, HCFC-124, HCFC-142b and HCFC-225. The total HCFC import quota for 2015 is 16.6 per cent below the HCFC consumption baseline.

Manufacturing sector

16. Stage I of the HPMP for Brazil as approved includes the conversion of 386 PU foam enterprises. UNDP confirmed that except for the 12 large enterprises with individual projects approved, all the remaining enterprises (including 98 SMEs in rigid PU foam that had been approved as a separate project) will be converted in group projects through systems houses. As the eligibility of all SMEs could not be verified at the time of submission of the HPMP, UNDP is undertaking the validation during implementation. The present tranche request included a report verifying the eligibility of 196 SMEs, as

well as the subsectors and the systems houses with which they are associated. Based on the progress reported, the Secretariat prepared Table 4 providing an overview of implementation of the systems houses component. UNDP will continue updating this information periodically based on progress.

Table 4: Status of progress systems house component

Approved HPMP				HPMP implementation							
Systems house	Downstream users planned			Downstream users identified						Conversion status	
	FMF/ ISF*	PUR **	ODP tonnes	FMF/ ISF*	PUR **	Total	ODP tonnes	Validated	Ongoing	Systems house	Downstream users
Amino	49		6.9	49	24	73	11.1	10	10	Completed	Ongoing
Arinos	85		10.8	85	9	94	14.5	38	30	Ongoing	Ongoing
Ariston	7		1.4	7	7	14	4.1	13	6	Completed	Ongoing
Ecoblaster	17		5.7	17	9	26	8.4	32		Ongoing	Not started
Purcom	101		11.8	102	34	136	16.5	112	50	Completed	Ongoing
Shimtek	14		2.9	14	n/a	14	2.9			Ongoing	Not started
PU rigid applications											
Ecopur***					3	3	0.5			Not started	Not started
M.Cassab					18	18	1.1			Not started	Not started
Polisystem		98	49.6		12	12	3.6			Ongoing	Not started
Polyurethane					12	12	1.4			Ongoing	Not started
U-Tech					6	6	0.1	13		Ongoing	Not started
Grant total	**273**	**98**	**89.1**	**274**	**134**	**408**	**64.2**	**218**	**96**		

*Flexible moulded foam and integral skin foam
**Rigid PU foam applications (water heater, thermoware, packaging, pipe-in-pipe)
***Ecopur's participation in the HPMP I is uncertain. In the event of non-participation, UNDP would still assist its downstream users through another systems house. UNDP will inform the Secretariat on the final answer when received.

17. Based on information provided by UNDP, indicative figures of cost incurred in conversions completed or in an advanced stage, are presented in Table 5.

Table 5. Costs incurred in conversions completed or in an advanced stage in the PU foam sector

Enterprises	Approved (US $)	Co-financing (US $)*	Total Costs (US $)
Individual enterprises			
Cantegril	47,323	Not calculated	47,323
Duoflex	109,725	120,275	230,000
Frisokar	604,390	100,000	704,390
Isoeste	331,963	97,037	429,000
Kalf	117,900	Not calculated	117,900
Luguez	244,323	45,300	289,623
Systems houses			
Arinos***	37,450	0	37,450
Ariston	134,750	12,750	147,500
Purcom	201,100	213,500	414,600
Grand total	**1,828,924**	**588,862**	**2,417,786**

* The specific expenditures related to co-financing and the degree to which they may be incremental or not, are not known.
**A low pressure foam dispenser was destroyed and replaced by a new high pressure foam dispenser.
***Partial cost as milestones have not yet been met to make all payments.

Refrigeration servicing sector

Technical standards

18. On the technical standards, UNDP clarified that they are discussed by specialized working groups composed of private-sector experts within the Brazilian Committee for Refrigeration and Air Conditioning, Ventilation and Heating. The role of the Government of Brazil and the Government of Germany is restricted to providing support in preparing and reviewing the standards, but there is no

control over the process itself. The most relevant standards under discussion are: safety requirements for refrigeration systems; update on refrigerants designation and safety classification in accordance to ASHRAE 34-2010[2]; installation of domestic split AC and compact (window type) systems (a special focus to systems using flammable refrigerants will be given during stage II); ammonia refrigeration systems; guidelines for installation and operation of refrigeration equipment in supermarkets; and guidelines for leak detection, refrigerant containment and maintenance of commercial refrigeration equipment.

19. In light of the regulatory actions intended for stage II, it is envisaged to propose the discussion of a standard addressing the safe use of flammable refrigerants, considering technical procedures and recommendations for safe installation, operation and maintenance of refrigeration and AC systems.

Plan of action

20. The date of completion of stage I of the HPMP and the associated Agreement is 31 December 2016[3]. The Secretariat noted that as of April 2015, out of the US $19.6 million approved in principle for stage I, US $5.8 million (30 per cent) have been disbursed between 2012 and 2015 and US $13.8 million (70 per cent) are still to be disbursed upon completion of milestones and activities by December 2016. Also, given the time required to complete a foam enterprise conversion (between 1.5 and 3 years), the Secretariat considered that several conversions that have not yet started are in risk of not being completed before the end of 2016.

21. In view of the above, the Secretariat requested confirmation regarding whether the Government of Brazil would be able to complete all outstanding activities and disburse US $13.8 million by the end of 2016, or whether the Government required extending the duration of stage I beyond that date in order to complete ongoing activities in the plan. UNDP indicated that the Government is aware of the tight implementation schedule for the remaining part of the stage I, but it has planned to complete the programme before the end of 2016. UNDP considered this completion date still realistic, given the high level of implementation achieved and experience gained in the last 12 months.

22. The Secretariat and UNDP agreed to reassess the level of progress and expected date of completion by the time of request of the fifth tranche at the 75th meeting. In the event that an extension was required, at the time of submission of the tranche an updated plan of action should be provided including an indication of the expected outstanding activities in each component by the end of 2016, updated implementation schedule, and updated planned date of completion.

23. As UNDP indicated that the project is still planned for completion in 2016, the Secretariat requested a disbursement plan for the remaining activities (Table 6).

Table 6. Plan of disbursement for the last part of stage I of the HPMP in Brazil (US $)

Activity	1st half-2015	2nd half-2015	1st half-2016	2nd half-2016	Total*
Legal framework	10,428	10,428	10,428	10,428	41,714
PU foam individual enterprises	420,474	401,977	416,607	531,133	1,770,191
PU foam systems houses	877,276	2,261,247	1,770,875	1,770,875	6,680,273
PU rigid foam 98 SMEs		551,749	1,191,027	794,018	2,536,794

[2] ASHRAE standard 34-2010: Designation and safety classification of refrigerants.

[3] "The completion of the HPMP and the associated Agreement will take place at the end of the year following the last year for which a maximum allowable total consumption has been specified in Appendix 2-A. Should at that time activities be still outstanding which were foreseen in the Plan and its subsequent revisions as per sub-paragraph 5(d) and paragraph 7, the completion 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 continue until the time of the completion if not specified by the Executive Committee otherwise" (Paragraph 10 of the Agreement between the Government and the Executive Committee of the Multilateral Fund).

Activity	1st half-2015	2nd half-2015	1st half-2016	2nd half-2016	Total*
Servicing – capacity building	293,000	306,400	166,162	118,362	883,924
Servicing – demonstrations	213,105	302,469	196,753	128,636	840,963
Servicing – others	193,454	220,444	195,537	136,478	745,913
PMU	60,000	120,000	60,000	60,000	300,000
Total	**2,067,737**	**4,174,715**	**4,007,389**	**3,549,931**	**13,799,772**

*Including all tranches approved and the fourth and fifth tranches not yet approved.

Conclusion

24. According to the preliminary HCFC consumption data for 2014 (pending confirmation by verification), Brazil is in compliance with the Montreal Protocol and the Agreement. Implementation of the HPMP continues to progress, five PU foam enterprises completed their conversion to low-GWP technologies and most of the ongoing individual conversions are expected to be completed in 2015 while conversion of systems houses and downstream users will be completed between 2015 and 2016. By the first half 2015, around 50 ODP tonnes of HCFC-141b will have been phased out in the foam sector. Activities in the refrigeration servicing sector continue to be implemented as planned. UNDP and the Government of Germany have disbursed 39.9 per cent of the total funds approved, including 32.7 per cent of the last tranche approved.

RECOMMENDATION

25. The Fund Secretariat recommends that the Executive Committee takes note of the progress report on the implementation of the third tranche of stage I of the HCFC phase-out management plan (HPMP) for Brazil; and further recommends blanket approval of the fourth tranche of stage I of the HPMP for Brazil, and the corresponding 2015-2016 tranche implementation plan, at the funding level shown in the table below, on the understanding that the approved funds would not be transferred to UNDP until the Secretariat had reviewed the verification report and confirmed that the Government of Brazil was in compliance with the Montreal Protocol and the Agreement between the Government and the Executive Committee.

	Project title	Project funding (US $)	Support cost (US $)	Implementing agency
(a)	HCFC phase-out management plan (stage I, fourth tranche)	3,000,000	225,000	UNDP