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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Thirty-sixth Meeting
Montreal, 20-22 March 2002

PROJECT PROPOSALS: BRAZIL

This document consists of the comments and recommendations of the Fund Secretariat on the following projects:

Foam

• Phase-out of CFC-11 by conversion to methylene chloride/LIA technology in the manufacture of flexible polyurethane boxfoam at Tecnosono	UNDP
• Phase-out of CFC-11 by conversion to HCFC-141b technology in the manufacture of flexible integral skin foam, and water-blown technology for flexible moulded foam at Arquespuma	UNDP
• Phase-out of CFC-11 by conversion to water-blown technology in the manufacture of flexible moulded foam at Indaru	UNDP
• Phase-out of CFC-11 by conversion to water-blown technology in the manufacture of flexible moulded foam, elastomers and integral skin foam for automotive applications, and to HCFC-141b for furniture integral skin foam applications at Steel Plastik	UNDP
• Phase-out of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid foam and flexible integral skin foam, and water-blown technology for flexible moulded foam and rigid integral skin foam at Ariston Polimeros	UNDP
• Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam and flexible integral skin foam at Pretty Glass	UNDP

• Conversion from CFC-11to HCFC-141b technology in the manufacture of rigid polyurethane foam and flexible integral skin foam at Tolling Quimica	UNDP
• Phase-out of CFC-11 by conversion to water/MC/hydrocarbon-blown technology in the manufacture of rigid and flexible foam at Toro	UNDP
• Phase-out of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam at Decorfrio	UNDP
• Phase-out of CFC-11 by conversion to water and HCFC-141b technology in the manufacture of rigid polyurethane foam at Fibral	UNDP
• Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at Heliotek	UNDP
• Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at Isojet	UNDP
• Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at Isosister	UNDP
• Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at Repor	UNDP
• Phase-out of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam at Simonaggio	UNDP

PROJECT EVALUATION SHEET
BRAZIL

SECTOR: Foam | ODS use in sector (2000): 2,004 ODP tonnes

Sub-sector cost-effectiveness thresholds: Flexible slabstock US $6.23/kg; Integral skin US $16.86/kg

Project Titles:

(a) Phase-out of CFC-11 by conversion to methylene chloride/LIA technology in the manufacture of flexible polyurethane boxfoam at Tecnosono
(b) Phase-out of CFC-11 by conversion to HCFC-141b technology in the manufacture of flexible integral skin foam, and water-blown technology for flexible moulded foam at Arquespuma
(c) Phase-out of CFC-11 by conversion to water-blown technology in the manufacture of flexible moulded foam at Indaru
(d) Phase-out of CFC-11 by conversion to water-blown technology in the manufacture of flexible moulded foam, elastomers and integral skin foam for automotive applications, and to HCFC-141b for furniture integral skin foam applications at Steel Plastik

Project Data	**Flexible slabstock**	**Integral skin**		
	Tecnosono	**Arquespuma**	**Indaru**	**Steel Plastik**
Enterprise consumption (ODP tonnes)	23.00	57.00	93.80	49.40
Project impact (ODP tonnes)	23.00	55.80	93.80	46.70
Project duration (months)	33	30	33	36
Initial amount requested (US $)	143,290	213,241	434,121	247,882
Final project cost (US $):				
Incremental capital cost (a)	105,900	51,000	125,000	92,000
Contingency cost (b)	10,590	5,100	12,500	9,200
Incremental operating cost (c)	18,228	151,641	285,621	146,682
Total project cost (a+b+c)	134,718	207,741	423,121	247,882
Local ownership (%)	100%	100%	100%	100%
Export component (%)	0%	0%	0%	0%
Amount requested (US $)	134,718	207,741	423,121	247,882
Cost effectiveness (US $/kg.)	5.86	3.72	4.51	5.31
Counterpart funding confirmed?	Yes	Yes	Yes	Yes
National coordinating agency	Ministry of Environment - MMA/PROZON			
Implementing agency	UNDP			

Secretariat's Recommendations				
Amount recommended (US $) Project impact (ODP tonnes) Cost effectiveness (US $/kg) Implementing agency support cost (US $)				
Total cost to Multilateral Fund (US $)				

PROJECT EVALUATION SHEET
BRAZIL

SECTOR: Foam ODS use in sector (2000): 2,004 ODP tonnes

Sub-sector cost-effectiveness thresholds: Integral skin US $16.86/kg
Rigid US $7.83/kg

Project Titles:

(e) Phase-out of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid foam and flexible integral skin foam, and water-blown technology for flexible moulded foam and rigid integral skin foam at Ariston Polimeros
(f) Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam and flexible integral skin foam at Pretty Glass
(g) Conversion from CFC-11to HCFC-141b technology in the manufacture of rigid polyurethane foam and flexible integral skin foam at Tolling Quimica
(h) Phase-out of CFC-11 by conversion to water/MC/hydrocarbon-blown technology in the manufacture of rigid and flexible foam at Toro
(i) Phase-out of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam at Decorfrio

Project Data	**Multiple-subsectors***				**Rigid**
	Ariston Polimeros	**Pretty Glass**	**Tolling Quimica**	**Toro**	**Decorfrio**
Enterprise consumption (ODP tonnes)	81.20	19.10	24.30	22.20	20.00
Project impact (ODP tonnes)	75.10	17.20	21.90	22.20	18.00
Project duration (months)	36	24	24	36	24
Initial amount requested (US $)	407,258	91,508	185,925	284,958	98,416
Final project cost (US $):					
Incremental capital cost (a)	157,140	36,600	86,720	264,000	52,800
Contingency cost (b)	15,714	3,660	8,672	26,400	5,280
Incremental operating cost (c)	196,388	51,248	66,326	56,628	40,336
Total project cost (a+b+c)	369,242	91,508	161,718	347,028	98,416
Local ownership (%)	100%	100%	100%	100%	100%
Export component (%)	0%	0%	0%	0%	0%
Amount requested (US $)	369,242	91,508	159,662	279,477	98,416
Cost effectiveness (US $/kg.)	4.78	7.50	11.70	12.35	5.47
Counterpart funding confirmed?	Yes	Yes	Yes	Yes	Yes
National coordinating agency	Ministry of Environment - MMA/PROZON				
Implementing agency	UNDP				

Secretariat's Recommendations					
Amount recommended (US $)					
Project impact (ODP tonnes)					
Cost effectiveness (US $/kg)					
Implementing agency support cost (US $)					
Total cost to Multilateral Fund (US $)					

*The amounts represent composite cost-effectiveness values (composite cost-effectiveness threshold: US $12.35/kg).

PROJECT EVALUATION SHEET
BRAZIL

SECTOR: Foam ODS use in sector (2000): 2,004 ODP tonnes

Sub-sector cost-effectiveness thresholds: Rigid US $7.83/kg

Project Titles:

(j) Phase-out of CFC-11 by conversion to water and HCFC-141b technology in the manufacture of rigid polyurethane foam at Fibral
(k) Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at Heliotek
(l) Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at Isojet
(m) Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at Isosister
(n) Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at Repor
(o) Phase-out of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam at Simonaggio

Project Data	**Rigid**					
	Fibral	**Heliotek**	**Isojet**	**Isosister**	**Repor**	**Simonaggio**
Enterprise consumption (ODP tonnes)	50.90	30.40	52.60	91.50	56.40	17.50
Project impact (ODP tonnes)	47.50	27.40	47.40	82.50	50.80	15.80
Project duration (months)	30	24	24	24	24	24
Initial amount requested (US $)	197,613	132,633	135,927	288,547	354,485	123,683
Final project cost (US $):						
Incremental capital cost (a)	95,100	60,000	25,250	151,110	233,710	65,000
Contingency cost (b)	9,510	6,000	2,525	15,111	23,371	6,500
Incremental operating cost (c)	93,003	61,133	102,652	111,447	66,120	48,883
Total project cost (a+b+c)	197,613	127,133	130,427	277,668	323,201	120,383
Local ownership (%)	100%	100%	100%	100%	100%	100%
Export component (%)	0%	0%	0%	0%	0%	0%
Amount requested (US $)	197,613	127,133	130,427	277,668	323,201	120,383
Cost effectiveness (US $/kg.)	4.16	4.64	2.75	3.36	6.36	7.62
Counterpart funding confirmed?	Yes	Yes	Yes	Yes	Yes	Yes
National coordinating agency	Ministry of Environment - MMA/PROZON					
Implementing agency	UNDP					

Secretariat's Recommendations						
Amount recommended (US $) Project impact (ODP tonnes) Cost effectiveness (US $/kg) Implementing agency support cost (US $)						
Total cost to Multilateral Fund (US $)						

PROJECT DESCRIPTION

Sector background

-	Latest available total ODS consumption (2000) (ODP tonnes)	11,379.10	
-	Baseline consumption of Annex A Group I substances (CFCs) (ODP tonnes)	10,525.80	
-	Consumption of Annex A Group I substances for the year 2000 (ODP tonnes)	9,275.10	
-	Baseline consumption of CFCs in foam sector	Not Available	
-	Consumption of CFCs in foam sector in 2000* (ODP tonnes)	1,841.00	
-	Funds approved for investment projects in foam sector as of end of 2001	US $26,106,556.00	
-	Consumption of CFCs to be phased out in approved investment projects as of end of 2001 (ODP tonnes)	4,375.00	
	Report on 2000 CFC-11 Consumption Data in Brazil (Based on a report from UNDP)		
(a)	CFC-11 consumption in 2000 all sectors (ODP tonnes)	3,571.00	
(b)	CFC-11 consumption in approved projects not yet implemented (ODP tonnes)		2,954.60
(c)	CFC-11 consumption in completed projects classified under foam sector as of December 2001 (ODP tonnes)	787.10	
(d)	CFC-11 consumption in cancelled projects (as of 34th Meeting) (ODP tonnes)	28.80	
		4,386.90	

Total remaining CFC-11 consumption (a+c+d) – (b): 1,432.30 ODP tonnes

* Based on data reported to the Fund Secretariat by the Government of Brazil on 1 May 2001.

Sector Consumption Data (Data Discrepancies)

1. The Executive Committee decided in its Decision 34/18 (a) and (d) taken at the 34th Meeting:

(a) To request the Secretariat and the implementing agencies not to submit project proposals which showed inconsistencies between project data and the latest reported sectoral consumption data;

(d) That for those countries with data discrepancies, projects remaining in the 2001 allocation could be presented, once issues were clarified, to the March 2002 meeting, and would be counted against the 2001 business plans.

2. In view of the discrepancies which were identified in the foam sector consumption data reported in the Brazil foam projects submitted to the 34th Meeting, and consistent with the above decision, UNDP submitted to the Fund Secretariat a report entitled "Brazil – Report on data discrepancies in CFC-11 consumption" together with the projects submitted for Brazil for consideration at the 36th Meeting. The key data in the report are summarized in the sector background information above. The report provided an analysis of the 2000 consumption data to clarify the earlier discrepancies and establish the level of remaining CFC-11. While analysis of

the sector-based CFC consumption data reported to the Fund Secretariat by Brazil prior to the 34th Meeting showed the remaining foam sector CFC consumption to be 173 ODP tonnes, the current analysis in UNDP's report shows a remaining consumption of 1,432.30 tonnes CFC-11 for all sectors.

3. UNDP in its report stated that the 2000 sector-based CFC-11 consumption data that Brazil reported to the Secretariat in May 2001 indicating a total for all sectors of 2,197 ODP tonnes and 1,841 ODP tonnes (83.8%) for the foam sector, was preliminary data. Brazil's final data reported in September 2001, in accordance with Article 7 showed CFC-11 consumption in 2000 of 3,571 ODP tonnes.

4. UNDP further stated that its analysis showed that some differences existed between the classification of foam projects in Multilateral Fund project inventory and Brazil's country programme. While commercial refrigeration and transportation refrigeration (without refrigerant component) are classified as foam under the Multilateral Fund, they are classified as refrigeration in Brazil's country programme. Thus, consumption of over 500 ODP tonnes in a number of on-going projects classified as foam sector consumption in the inventory is reported by Brazil as refrigeration. Brazil is currently harmonizing its data reporting with that of the Multilateral Fund but could not immediately report the CFC consumption by sector. However, UNDP confirmed that substance-wide no CFC discrepancies exist.

Project Background Information

5. Fifteen projects in the foam sector with a total ODS consumption of 174.7 ODP tonnes have been submitted for Brazil at a total recommended funding level of US $3,188,292. These projects, when approved are to be counted against UNDP's 2001 business plan. The approval of the 15 projects will result in the approval of a total of 42 projects in the 2001 business plan amounting to US $7,716,892 to phase out 1,184.9 ODP tonnes of CFC-11 in the foam sector in Brazil.

6. The profile of the fifteen companies, showing their years of establishment, current (2001) CFC-11 consumption, baseline equipment as well as proposed capital investments to be undertaken to effect conversion of CFC-11 based production to alternative technologies, is shown in Table 1 below. They include three companies in the integral skin sub-sector, one in the flexible slabstock, seven in the rigid foam sub-sector and four companies producing foams in more than one sub-sector (multiple sub-sectors)

Flexible Slabstock Foam (Boxfoam)

Tecnosono

7. Tecnosono Ind. E Com Ltda manufactures square and round block flexible foam on two boxfoam units. Originally founded in 1985 as member of the Sonolar Group it has undergone ownership changes culminating in a take-over by Cantegril in August 2000. The company will convert the use of CFC-11 to the use of low index additive and methylene chloride. The total project cost amounts to US $134,718, including incremental capital cost of US $105,900 and

US $10,590 contingency based on the conversion costs indicated in Table 1 below and incremental operational cost of US $18,228.

Integral Skin

Arquespuma, Indaru, Steel Plastik, Tolling Quimica

8. The companies were established between 1959 and 1994. All their equipment was installed before 25 July 1995 except one low pressure dispenser at Indaru which was installed in 1996. However, this equipment does not feature in the conversion costs. All the companies manufacture flexible molded foam for automotive and furniture applications. In addition, Arquespuma manufactures flexible integral skin foam arm rests while Steel Plastik manufactures flexible integral skin foam and elastomers for automotive and miscellaneous applications. The companies will convert the flexible molded foam production to full water-blown and the flexible integral skin foam to HCFC-141b. Conversion requirements are shown in Table 1 below. The total incremental capital costs of the three projects - Arquespuma, Indaru and Steel Plastik: are US $61,600, US $148,500 and US $101,200 respectively, while the incremental operating costs are US $151,641, US $285,621 and US $146,682. The projects' cost-effectiveness range from US $3.82-US $5.31/kg.

Multiple Sub-sectors

Ariston Polimeros, Pretty Glass, Tolling Quimica, Toro

9. The four companies were established between 1992 and 1994. Ariston Polimeros manufactures flexible molded foam for cushions, integral skin foam for computer housing and exercise equipment padding and a variety of rigid foam products, including sprayfoam. Pretty Glass manufactures flexible integral skin head rests and rigid foam products, all used in spas and jacuzzis. Tolling Quimica also manufactures flexible integral arm rests and pads and a variety of rigid foam products, including sprayfoam. Toro manufactures calcium carbonate filled and barium sulphate filled flexible foams for floor mats and engine head shields respectively, as well as rigid foam used for headliners. Toro makes its own custom-made formulations.

10. The equipment used by the companies as well as their conversion and costs are described in Table 1 below. The flexible molded foam production at the companies will be converted to water-based systems, while the flexible integral skin and rigid foam production will be converted to interim use of HCFC-141b with a likely permanent solution being HFC-based formulations. Toro, however, will convert its production to the use of a combination of water, methylene chloride and hydrocarbon. The total incremental costs of the projects based on the equipment listed in Table 1 are as follows:

	ICC US $	**IOC US $**	**Total US $**
Ariston Polimeros	210,870	196,388	407,258
Pretty Glass	40,260	51,248	91,508
Tolling Quimica	125,290	66,326	191,616
Toro	328,000	78,620	407,520

The cost-effectiveness of the projects range from US $3.90-US $16.86/kg for the integral skin foam components and US $3.52-US $7.83/kg for the rigid foam components.

Rigid Foam

Decorfrio, Fibral, Heliotek, Isojet, Isosister, Repor, Simonnagio

11. Five of the seven companies were established between 1973 and 1994. The other two were established in 1995 – Decorfrio in March 1995 and Fibral in June 1995. The companies produce a variety of rigid foam products including spray, blocks, panels pour-in-place for various insulation applications including cold storage, display cabinets and heaters.

12. The companies predominantly use low pressure foam dispensers installed mostly in 1993 and 1994 as shown in Table 1 below. Fibral which was founded in June 1995 is, however, stated to have its dispenser installed in 1994.

13. All the companies will convert their production to the interim use of HCFC-141b with a likely final conversion to HFC-based formulations. The costs of the projects (based on the equipment conversion costs shown in Table 1 below) are:

	ICC US $	**IOC US $**	**Total US $**
Decorfrio	58,080	40,336	98,416
Fibral	104,610	93,003	197,613
Heliotek	71,500	61,133	132,633
Isojet	33,275	102,652	135,927
Isosister	177,100	111,447	288,547
Repor	288,366?	66,120	354,485?
Simonnagio	74,800	48,883	123,683

Justification for the use of HCFC-141b

14. Justification for the use of HCFC-141b based on technological and economic analysis of each enterprise is provided in each project document. UNDP also indicates that the choice of HCFC-141b as interim technology was made by the enterprise following discussion of available alternatives. In accordance with decisions of the Executive Committee on the use of HCFCs, a letter of transmittal from the Government of Brazil endorsing the use of HCFC-141b by the companies is attached.

Table 1. Profile of the Polyurethane Foam Producing Companies by Sub-Sector

Company and Year Established	ODS Use (2001) ODP tonnes	Baseline Equipment[1]/ Year of Installation	Equipment: Action Proposed/Cost US $	Other/Cost US $	Technical Assistance and Trials US $
FLEXIBLE MOLDED/INTEGRAL SKIN FOAM					
Arquespuma* 1959/1997	57.0	15 kg/min Sulpol LPD, 1994 15 kg/min Transtecnica LPD, 1994	Retrofit Sulpol for HCFC-141b (US $5,000) Retrofit Transtecnica for water-based systems with refrigerated cooling (US $15,000), variable ratio (US $10,000)	Ventilation and monitor for HCFC-141b (US $7,000)	Technical assistance US $6,000 Trials (2 foam types at US $4,000) US $8,000
Indaru 1969	93.8	4 60 kg/min Transtecnica LPD, 1989 1 30 kg/min Transtecnica LPD, 1989 1 15 kg/min Equifiber LPD, 1996 72 kg/min Kraus Maffei KK80 HPD, 1992	Retrofit Transtecnica dispensers with polyol/iso pumps at US $15,000 each (US $75,000) None Retrofit Kraus Maffei dispenser with new iso pump (US $20,000)	None	Technical assistance: US $6,000 Trials (6 machines): US $24,000 Formulation trials: US $5,000, Substrates: US $5,000, Total trials: US $34,000
Steel Plastik** 1994	49.4	15 kg/min Transtecnica LPD, 1994 15 kg/min Sulpol LPD Two hand-pour production lines	Retrofit with thermal control (heating/cooling) at US $15,000 (US $30,000) Replace hand-pour with 2 LPD at US $30,000 each with 33% deduction (US $40,000)	None	Technical assistance: US $6,000 Trials (4 equipment at US $4,000): US $16,000
FLEXIBLE SLABSTOCK FOAM (BOXFOAM)					
Tecnosono*** 1985/April 1995	23.0	1 Schmuziger semi-automatic boxfoam unit (square block production) 1 manual boxfoam unit (round block production)	semi-automatic boxfoam: Stabilizer additive metering and storage system (US $10,000). manual boxfoam: Replacement of manual with semi-automatic boxfoam (US $90,000, including ventilation) with 33% deduction for technology upgrade.	Process ventilation (US $20,000.)	Technical assistance: US $6,000 Trials: US $3,000

[1] LPD: low pressure dispenser; HPD: high pressure dispenser.

* The foam production at Arquespuma, originally known as Multispuma, was separated in 1997 as a foam producing company specializing in integral skin and flexible molded foams from an existing company (Fabrika de Colchoes do Lar) established in 1959. The baseline equipment of Arquespuma are those that were used by the parent company and transferred to this spinned-off company.

** Steel Plastik was founded in 1994 as High Polimeros Plasticos do Brasil and changed name to Steel Plastik Industria e Commercio when it moved to a new location in Sao Paolo in 1997.

*** Tecnosono was originally founded as Sonotar del Sul, but one in a group holding and taken over by its local management in April 1995. The company was again taken over by another Brazilian company Cantegril in August 2000 but the production was essentially maintained.

MULTIPLE SUB-SECTORS					
Ariston Polimeros 1994	81.2	Flexible FMF/ISF[2]: 15 kg/min Equifiber LPD (March 1995) Rigid ISF: Hand-mix Rigid boxfoam: Hand-mix and box molds. Rigid spray and pour-in-place: 4 Home-made spray/PIP dispensers 7 kg/min, 3 kg/min	Flexible FMF/ISF: Retrofit LPD with thermal control (US $10,000), and for HCFC-141b use (US $5,000) Rigid ISF: Replace hand-mix with LPD at US $20,000 with 33% deduction for technology upgrade (US $13,400) Rigid boxfoam: Replace manual boxfoam with semi-automatic boxfoam unit at US $70,000 with 33% deduction for upgrade (US $46,900) Rigid spray and pour-in-place: Replace 4 LP spray dispensers at US $10,600 (US $42,400)	Ventilation (US $7,000) 45 m extra hose (4) at US $1,350 each (US $5,400) air compressors/ generators (4) at US $9,900 each (US $39,6020)	Technical assistance: US $6,000 Trials (4 foam types): US $16,000
Pretty Glass 1994	19.1	Flexible ISF: 7 kg/min Fibermaq (1994) Rigid spray: 7 kg/min home-made sprayfoam dispenser	Flexible ISF: Retrofit Fibermaq for use with HCFC-141b (US $5,000) Rigid spray: Replace LPD with portable HP sprayfoam dispenser (US $10,600)	Ventilation (US $7,000)	Technical assistance: US $6,000 Trials (2 foam types at US $4,000 each): US $8,000
Tolling Quimica 1992	24.3	Flexible integral skin foam: Hand-mix Rigid foam: 3 15 kg/min Sulpol LP spray dispensers (1993) Other: Multi-component blender	Flexible integral skin foam: Replace hand-mix with 15 kg/min LPD at US $20,000 with 33% deduction for technology upgrade (US $13,200) Rigid foam: Replace with 15 kg/min HP spray dispensers at US $15,250 (US $45,750) None	Ventilation (US $7,000) (3) 45 m extra hoses at US $1,350 (US $4,050) (3) Air compressors/ generators at US $9,900 (US $29,700)	Technical assistance: US $6,000 Trials (2 applications at US $4,000): US $8,000
Toro 1993	22.9	Flexible filled foam: 94 kg/min Kraus Maffei dosing dispenser (1988) 15 kg/min Transtecnica LPD (1989) Rigid foam: 1 Krauss Maffei KMK Rim Star 32 kg/min HPD (1998) Hennecke HK 65 HPD 65 kg/m^3 (unknown) Other: Three presses Closed top blender	Flexible filled foam: Replace LPD with HP dosing dispenser (US $100,000)	Hydrocarbon weighing/ transfer equipment (US $20,000). Explosion proofing of blender (US $15,000) Gas detection and monitoring system (US $30,000). Ventilation/exhaust system (US $90,000)	Technical assistance: US $6,000 Foam Trials (2 foam types at US $4,000): US $8,000 Trials substrate cost (2 at US $5,000 each): US $10,000 Trials chemical formulation (2): US $10,000

[2] FMF: flexible molded foam; ISF: integral skin foam

RIGID FOAM					
Decorfrio March 1995	20.0	Hand-mix operation for cold room panels and display cabinets.	Replace hand-mix panel operation with 100 kg/min HPD at US $75,000 with 50% deduction for technology upgrade (US $37,500). Replace display case operation with 7 kg/min HPD at US $10,600 with 50% deduction for technology upgrade (US $5,300)	None	Technical assistance: US $6,000 Trial: US $4,000
Fibral 20 June 1995	50.9	15 kg/min Transtecnica LPD (1994)	1 40 kg/min HPD for thermal insulation foam (US $75,000)	Civil works, including floor reinforcement (US $2,300), electrical upgrade (US $1,500), air supply (US $2,300)	Technical assistance: US $6,000 Trials (2 applications): US $8,000
Heliotek 1989	30.4	15 kg/min Sulpol LPD (2000) for small heaters (100-1,000ℓ) hand-mix operation for large heaters (1,000-5,000ℓ)	Replace hand-mix operation with 200 kg/min HPD at US $75,000 with 50% deduction for technology upgrade (US $37,500)	None	Technical assistance: US $6,000 Trials: US $4,000 Trials substrate: US $5,000
Isojet****[*] 1994-2000	52.6	12 kg/min Pumer S100 LPD (1994) 15 kg/min Polyurethane/ Pumer S100 quasi HPD (2000)	Replace Pumer LPD with 15 kg/min portable HPD (US $15,250) None	None	Technical assistance: US $6,000 Trials – foam: US $4,000 Trials – metal substrate: US $5,000
Isosister 1988	91.5	Isomatic LP spray dispensers (1993) Manual boxfoam: (1993) <u>Other</u>: Open top premixer	Replace LP spray dispensers with HPD at US $10,600 (US $21,200) Replace boxfoam with semi-automatic unit at US $75,000 with 33% deduction for technology upgrade (US $50,250) Replace open top premixer with closed system (US $20,000)	Generator/air compressor (US $9,900) Ventilation for boxfoam (US $7,000)	Technical assistance: US $6,000 Trials (3 applications at US $4,000): US $12,000
Repor 1994	56.4	15 kg/min Polyurethane LP spray dispenser (1994) 2 7.5 kg/min Polyurethane LP spray dispensers (1994) 2 Manual boxfoam unit (1993) 1 air compressor (125 psi)	Replace with 1 15 kg/min HP spray dispenser (US $15,250) 2 7 kg/minHp spray dispenser at US $10,600 (US $21,200) Replace manual boxfoams with semi-automatic boxfoam at US $75,000 with 33% deduction for technology updrade (US $100,500)	3 200 m heated hose at US $6,000 (US $18,000) Compressors at US $9,900 (US $29,700) Ventilation for boxfoam units (2) at US $7,000 (US $14,000)	Technical assistance: US $6,000 Foam trials (2 applications at US $4,000): US $8,000
Simonnagio 1973	17.5	15 kg/min Sulpol LPD (Feb. 1995)	Replace with 15 kg/min HP dispenser (US $55,000)	None	Technical assistance: US $6,000 Trials-foam: US $4,000 Trials-substrate: US $3,000

**** Isojet was established as RCC Instalacoes e Projetos in April 1994. The name was changed to Isojet Ind. Com. E Construcoes in March 2000 with the same ownership.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

Project Eligibility: Fibral

15. Clarification was sought from UNDP on the issue of the installation of equipment before the establishment of this company, Fibral. UNDP explained that the enterprise began its operations in 1994, when the equipment was installed. However, it took some time for the government to process the paperwork and issue and official social Contract to the company. Therefore, the date of establishment of the enterprise according to the Social Contract is June 1995, although the enterprise had been operating since 1994. The date of installation of equipment (1994) reflects the date when the company actually began using the equipment while the date of establishment (June 1995) reflects the official date according to the government records.

Project Costs

16. The Secretariat and UNDP concluded discussions on the project proposals where the Secretariat had raised some technical or policy issues. Such issues included technology upgrades, trial costs and requests for new portable electric generators and compressors for sprayfoam application. These were resolved and the eligible grants of the projects agreed as indicated below.

	Grant Amount (US $)	Implementing Agency Support Cost (US $)	Cost-effectiveness (US $/kg)
Integral skin foam			
Arquespuma	207,741	27,006	3.72
Indaru	423,121	55,006	4.51
Steel Plastik	247,882	32,225	5.31
Flexible Slabstock Foam			
Tecnosono	134,718	17,513	5.86
Multiple Sub-sector			
Ariston Polimeros	369,242	48,001	ISF: 3.90 RPF: 5.65
Pretty Glass	91,508	11,896	ISF: 10.46 RPF: 4.53
Tolling Quimica	159,662	20,756	ISF: 16.86 RPF: 6.54
Toro	279,477	36,332	ISF: 16.86 RPF: 7.83
Rigid Foam			
Decorfrio	98,416	12,794	5.47
Fibral	197,613	25,690	4.16
Heliotek	127,133	16,527	4.64
Isojet	130,427	16,956	2.75
Isosister	277,668	36,097	3.36
Repor	323,301	42,016	6.36
Simonnagio	120,383	15,650	7.62

Issues Relating to Data Discrepancies

17. As reported by UNDP, the Government of Brazil could not make available a new or revised breakdown of the 2000 CFC consumption by sector. However, the preliminary sector-based data reported to the Fund Secretariat in May 2001 showed the following percentage breakdown of CFC-11:

Aerosol:	0.4%
Foam:	83.8%
Refrigeration:	15.8%

Therefore, on the basis of the reported remaining CFC-11 consumption of 1,432.3 ODP tonnes, and the likelihood of a higher proportion of foam sector consumption following the government's data harmonization, the remaining foam sector consumption could be estimated to account for higher than 1,200 ODP tonnes. Hence, the CFC-11 consumption of 174.7 ODP tonnes to be phased out by the 15 projects could be considered to be consistent with the sector CFC consumption.

Consistency with Executive Committee Decisions

Decision 33/2

18. The projects meet the relevant requirements of the Executive Committee's Decision 33/2.

Decision 35/37

19. The Government of Brazil informed the Fund Secretariat that it has selected the second option for the implementation of its national aggregate consumption. This option establishes the national starting point at 6,228.9 ODP tonnes (subject to clarification of impact of projects approved but not yet implemented). When approved the CFC consumption of 174.7 ODP tonnes to be phased out by the projects should be deducted from Brazil's national aggregate consumption.

RECOMMENDATIONS

20. The projects are submitted for individual consideration on account of Decision 34/18 (d).

GOVERNMENT NOTE OF TRANSMITTAL OF INVESTMENT PROJECTS TO THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL

PROJECT(S) OF THE GOVERNMENT OF BRAZIL

The Government of Brazil requests **UNDP** to submit the project(s) listed in Table 1 below/attached Table 1 to the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol for consideration at its 36th Meeting.

Section I: ODS Consumption Data

1. The ODS consumption figure(s) of the project(s) has/have been validated by the National Ozone Unit (NOU).

2. The consumption data have been retained in the records of the NOU for reference and/or future verification.

3. The Government has been advised by the NOU that the agreement to the project(s) indicates a commitment to ensure that the validated phase-out figure(s) was/were realized and yielded a sustained reduction from the current sector consumption of **533.7** ODP tonnes for the **foam** sector.

Table 1: Projects Submitted to the 36th Meeting of the Executive Committee

Project Title/Sector	Type of ODS	Consumption (ODP Tonnes), (Year)	Amount to be Phased Out (ODP Tonnes), (Year)	Implementing Agency
Foam Sector				
TECNOSONO	CFC-11	23	23	UNDP
INDARU	CFC-11	93.8	93.8	UNDP
ARQUESPUMA	CFC-11	57	55.8	UNDP
PRETTY GLASS	CFC-11	19.1	17.2	UNDP
SIMINAGGIO IMIGRANTE	CFC-11	17.5	15.8	UNDP
ARISTON POLIMEROS	CFC-11	81.2	75.1	UNDP
REPOR	CFC-11	56.4	50.8	UNDP
FIBRAL	CFC-11	50.9	47.5	UNDP
HELIOTEK	CFC-11	30.4	27.4	UNDP
ISOSISTER	CFC-11	91.5	82.5	UNDP
TOLLING QUIMICA	CFC-11	24.3	21.9	UNDP
TORO	CFC-11	22.9	22.9	UNDP
Total		**568**	**533.7**	

Section II: Other Relevant Actions Arising from Decision 33/2

4. It is understood that, in accordance with the relevant guidelines, the funding received for a project would be partly or fully returned to the Multilateral Fund in cases where technology was changed during implementation of the project without informing the Fund Secretariat and without approval by the Executive Committee;

5. The National Ozone Unit undertakes to monitor closely, in cooperation with customs authorities and the environmental protection authorities, the importation and use of CFCs and to combine this monitoring with occasional unscheduled visits to importers and recipient manufacturing companies to check invoices and storage areas for unauthorized use of CFCs, in view of the instances of equipment purchased by the Multilateral Fund not being used or being reverted to the Use of CFCs.

6. The National Ozone Unit will cooperate with the relevant implementing agencies to conduct safety inspections where applicable and keep reports on incidences of fires resulting from conversion projects.

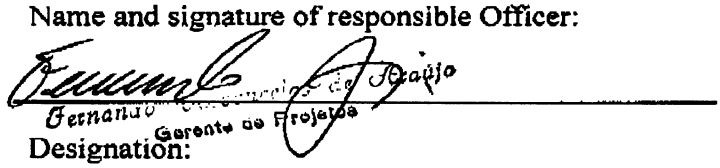
Section III: Projects Requiring the Use of HCFCs for Conversion *(To be included where applicable)*

7. In line with Decision 27/13 of the Executive Committee and in recognition of Article 2F of the Montreal Protocol, the Government

   (a) has reviewed the specific situations involved with the project(s) listed in table 1as well as its HCFC commitments under Article 2F; and

   (b) has nonetheless determined that, at the present time, the projects needed to use HCFCs for an interim period with the understanding that no funding would be available for the future conversion from HCFCs for the company/companies involved.

Name and signature of responsible Officer:



Designation: Date: 22/01/2002

Manager

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GOVERNMENT NOTE OF TRANSMITTAL OF INVESTMENT PROJECTS TO THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL

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3. The Government has been advised by the NOU that the agreement to the project(s) indicates a commitment to ensure that the validated phase-out figure(s) was/were realized and yielded a sustained reduction from the current sector consumption of **195.9 ODP** tonnes for the **foam** sector.

Table 1: Projects Submitted to the 36th Meeting of the Executive Committee

Project Title/Sector	Type of ODS	Consumption (ODP Tonnes), (Year)	Amount to be Phased Out (ODP Tonnes), (Year)	Implementing Agency
Foam Sector				
POLITECH	CFC-11	93	83.8	UNDP
STEEL PLATIK	CFC-11	49.4	46.7	UNDP
DECORFRIO	CFC-11	20	18	UNDP
ISOJET	CFC-11	52.6	47.4	UNDP
Total		**215**	**195.9**	

Section II: Other Relevant Actions Arising from Decision 33/2

4. It is understood that, in accordance with the relevant guidelines, the funding received for a project would be partly or fully returned to the Multilateral Fund in cases where technology was changed during implementation of the project without informing the Fund Secretariat and without approval by the Executive Committee;

5. The National Ozone Unit undertakes to monitor closely, in cooperation with customs authorities and the environmental protection authorities, the importation and use of CFCs

and to combine this monitoring with occasional unscheduled visits to importers and recipient manufacturing companies to check invoices and storage areas for unauthorized use of CFCs, in view of the instances of equipment purchased by the Multilateral Fund not being used or being reverted to the Use of CFCs.

6. The National Ozone Unit will cooperate with the relevant implementing agencies to conduct safety inspections where applicable and keep reports on incidences of fires resulting from conversion projects.

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(b) has nonetheless determined that, at the present time, the projects needed to use HCFCs for an interim period with the understanding that no funding would be available for the future conversion from HCFCs for the company/companies involved.

Name and signature of responsible Officer:

Fernando Vasconcelos de Araújo

Designation: Gerente de Projetos Date: 08/02/2002

Manager

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