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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Thirty-fifth Meeting
Montreal, 5-7 December 2001

PROJECT PROPOSALS: PAKISTAN

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

Process Agent:

- Conversion of carbon tetrachloride (CTC) as process solvent to 1,2-Dichloroethane at Himont Chemicals Ltd. UNIDO

Refrigeration:

- Replacement of refrigerant CFC-12 with HFC-134a and foam blowing agent CFC-11 with HCFC-141b in the production of domestic refrigerators at Ideal Appliances Ltd. UNIDO

**PROJECT EVALUATION SHEET
PAKISTAN**

SECTOR: Process Agent ODS use in sector (1999): 100 ODP tonnes

Sub-sector cost-effectiveness thresholds: n/a

Project Titles:

(a) Conversion of carbon tetrachloride (CTC) as process solvent to 1,2-Dichloroethane at Himont Chemicals Ltd.

Project Data	Process conversion
	Himont
Enterprise consumption (ODP tonnes)	80.00
Project impact (ODP tonnes)	80.00
Project duration (months)	24
Initial amount requested (US \$)	537,929
Final project cost (US \$):	
Incremental capital cost (a)	456,492
Contingency cost (b)	45,649
Incremental operating cost (c)	35,788
Total project cost (a+b+c)	537,929
Local ownership (%)	100%
Export component (%)	0%
Amount requested (US \$)	
Cost effectiveness (US \$/kg.)	6.73
Counterpart funding confirmed?	Yes
National coordinating agency	Government & Rural Development Ozone Cell
Implementing agency	UNIDO

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 \$)	

SECTOR BACKGROUND

1. Pakistan's report on progress with implementation of its country programme for 1999 indicated that there was no consumption of CTC in the process agent sector. Pakistan has subsequently advised the Secretariat that of the total CTC consumption previously indicated to be 564 ODP tonnes in the solvent sector, 100 ODP tonnes is, in fact, consumed in the process agent sector.

Sub-sector profile

2. The project document contains a sub-sector profile indicating that this is the only enterprise manufacturing ibuprofen in Pakistan. Confirmation has been sought, but not yet received, that the Government of Pakistan will not seek any additional funding for conversion of ibuprofen manufacture.

PROJECT DESCRIPTION

Conversion of Carbon Tetrachloride (CTC) as process solvent to 1,2-dichloroethane at Himont Chemicals Ltd., Lahore

3. The objective of this project is to eliminate the use of carbon tetrachloride (CTC) as a process agent in the production of 4-isobutylacetophenon (IBAP), used to manufacture ibuprofen, by Himont Chemicals Ltd. The production capacity of the facility proposed for funding is 280 MT per annum.

4. In the last three years of operation, Himont Chemicals consumed an average of 80 ODP tonnes of CTC as a process agent in the production of 90.43 MT of ibuprofen annually.

5. According to a survey conducted by UNIDO, Himont Chemicals is the only ibuprofen manufacturer in Pakistan.

6. Under the current project, the production of IBAP will be converted from CTC to ethylene dichloride (EDC). The technical requirements of the new process require that much of the existing equipment be upgraded to meet process requirements and maintain the desired production capacity. The main capital cost items requested are a storage tank (US \$32,000), glass-lined reactors (US \$116,000), holding vessel (US \$32,000), chilling plant (US\$ 45,000), boiler capacity expansion (US\$ 28,000), nitrogen generator (US \$40,000), vacuum system (US \$15,000) and a fire safety system (US \$25,000). Other costs include consultancy (US \$10,000), training (US \$5,000) and testing (US \$15,000).

7. Incremental operating costs arising mainly from increased steam consumption are requested for one year at US \$35,788.

8. The cost-effectiveness of the project, as submitted, is US \$6.73 per kg.

SECRETARIAT'S COMMENTS

COMMENTS

9. This project is similar to those submitted for conversion of ibuprofen manufacture in India and was reviewed accordingly. Issues which have an impact on determination of incremental capital costs, including equipment capacities and specification were raised with UNIDO. While most issues have been resolved, some were under discussion at the time of preparation of this document. Incremental operating costs for one year were recalculated to take account of clarifications on quantities of the CTC and replacement process agent and their costs. The Sub-Committee on project review will be advised of the outcome of the discussion with UNIDO.

**PROJECT EVALUATION SHEET
PAKISTAN**

SECTOR: Refrigeration ODS use in sector (1999): 1,196 ODP tonnes
 Sub-sector cost-effectiveness thresholds: Domestic US \$13.76/kg

Project Titles:

- (a) Replacement of refrigerant CFC-12 with HFC-134a and foam blowing agent CFC-11 with HCFC-141b in the production of domestic refrigerators at Ideal Appliances Ltd.

Project Data	Domestic
	Ideal
Enterprise consumption (ODP tonnes)	14.37
Project impact (ODP tonnes)	12.89
Project duration (months)	30
Initial amount requested (US \$)	177,101
Final project cost (US \$):	
Incremental capital cost (a)	142,500
Contingency cost (b)	10,000
Incremental operating cost (c)	20,601
Total project cost (a+b+c)	173,101
Local ownership (%)	100%
Export component (%)	0%
Amount requested (US \$)	173,101
Cost effectiveness (US \$/kg.)	13.73
Counterpart funding confirmed?	Yes
National coordinating agency	Ministry of Environment
Implementing agency	UNIDO

Secretariat's Recommendations	
Amount recommended (US \$)	173,101
Project impact (ODP tonnes)	12.89
Cost effectiveness (US \$/kg)	13.73
Implementing agency support cost (US \$)	22,503
Total cost to Multilateral Fund (US \$)	195,604

PROJECT DESCRIPTION

Sector Background

Latest available total ODS consumption (1999)	2,038.10 ODP tonnes
Baseline consumption of Annex A Group I substances (CFCs)	1,679.40 ODP tonnes
Consumption of Annex A Group I substances for the year 1999	1,421.80 ODP tonnes
Baseline consumption of CFCs in refrigeration sector	N.A. ODP tonnes
Consumption of CFCs in refrigeration sector in 1999	1,196.34 ODP tonnes
Funds approved for investment projects in refrigeration sector as of end of 2000	US\$4,781,312.00
Quantity of CFC to be phased out in investment projects in refrigeration sector as of end of 2000	373.59 ODP tonnes

10. The total ODS consumption in the refrigeration sector for the year 2000, according to the Government of Pakistan, was 1,196.34 ODP tonnes, including 396.75 ODP tonnes used for manufacturing new equipment and 799.59 ODP tonnes used for servicing.

11. The Executive Committee has approved about US \$4,781,312 for 14 projects to phase out 373.59 ODP tonnes of CFC for enterprises manufacturing refrigeration equipment in Pakistan.

Ideal Appliances

12. The enterprise consumes 11.52 ODP tonnes of CFC-11 and 2.84 ODP tonnes of CFC-12 (average of 1998-2000) in the manufacture of domestic refrigeration equipment. The enterprise manufactures various models of domestic refrigerators and operates a low-pressure foam dispenser, assorted foaming moulds and jigs, production and portable refrigerant charging machines, vacuum pumps and leak detectors in the baseline.

13. The total phase out of 14.36 ODP tonnes of CFC-11 and CFC-12 will be achieved by converting CFC-11 based technology to HCFC-141b as the foam blowing agent and CFC-12 to HFC-134a as the refrigerant. Under the current project, a high-pressure dispenser will replace the existing low-pressure foaming machine. The enterprise will require provision of an industrial charging unit, new vacuum pumps and leak detectors suitable for HFC-134a duty. Other costs include consultancy services, redesign, testing and training. Incremental operating costs are requested by the enterprise reflecting the higher cost of chemicals and components.

14. In accordance with decisions of the Executive Committee on the use of HCFCs, a letter of transmittal from the Government of Pakistan endorsing the use of HCF-141b by the company is attached.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

15. The Secretariat and UNIDO discussed the project, following which the cost of retrofitting and replacement of vacuum pumps were brought in line with similar projects approved and being implemented in Pakistan and other Article 5 countries.

RECOMMENDATIONS

16. The Secretariat recommends blanket approval of the project with the funding level and associated implementing agency support cost as indicated below.

	Project Title	Project Funding (US\$)	Support Cost (US\$)	Implementing Agency
(a)	Replacement of refrigerant CFC-12 with HFC-134a and foam blowing agent CFC-11 with HCFC-141b in the production of domestic refrigerators at Ideal Appliances Ltd.	173,101	22,503	UNIDO

**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 PAKISTAN

The Government of *PAKISTAN* requests UNIDO (*name(s) of IA(s)*) to submit the project(s) listed in Table 1 below to the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol for consideration at its 35th ExCom 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) / Ozone Cell.
2. The consumption data have been retained in the records of the NOU/ Ozone Cell for reference and/or future verification.
3. The Government has been advised by the NOU/ Ozone Cell 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 2001 (*insert year immediately preceding the preparation of the project*) consumption of 12.89 ODP tons for the (Refrigeration & solvent) sector.

Table 1: Projects Submitted to the 35th Meeting of the Executive Committee

Project Title/Sector	Type of ODS	Consumption (ODP Tons), (Year)	Amount to be Phased Out (ODP Tons), (Year)	Implementing Agency
Refrigeration Sector				
PHASING OUT ODS IN THE PRODUCTION OF DOMESTIC REFRIGERATORS AT IDEAL APPLIANCES Ltd., PAKISTAN	R11 & R12	14.37 in 2001	12.89 in 2004	UNIDO
Total		14.37	12.89	

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.
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 (NA)

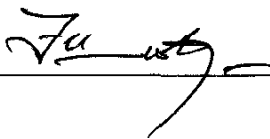
7. In line with Decision 27/13 of the Executive Committee and in recognition of Article 2F of the Montreal Protocol, the Government
- (a) has reviewed the specific situations involved with the project(s) (*insert names of enterprises*) as well as its HCFC commitments under Article 2F; and
 - (b) has 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:

FARKHAND-IQBAL.

Designation: Director ozone cell.

Date: 9/10/2001.



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