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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Forty-fourth Meeting
Prague, 29 November-3 December 2004

PROJECT PROPOSAL: EGYPT

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

Solvent

- Terminal solvent sector umbrella project

UNIDO

**PROJECT EVALUATION SHEET
EGYPT**

PROJECT TITLES	BILATERAL/IMPLEMENTING AGENCY
(a) Terminal solvent sector umbrella project	UNIDO

NATIONAL CO-ORDINATING AGENCY	Egyptian Environmental Affairs Agency
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LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN PROJECT**A: ARTICLE-7 DATA (ODP tonnes, 2003, as of October 2004)**

Annex A, Group I CFCs	1,102.20	Annex B, Group III TCA	18.00
Annex B, Group II CTC	13.00		

COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes, 200[x], as of [date])

ODS	Aerosol	Foam	Ref.	ODS	Solvents	Process agent	Fumigant
CFCs	121	30	885.2	CFCs	15	51	
CTC	--	--	--	CTC	13	--	
TCA	--	--	--	TCA	18	--	

CFC consumption remaining eligible for funding (ODP tonnes)	765.70
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CURRENT YEAR BUSINESS PLAN ALLOCATIONS		Funding US \$ million	Phase-out ODP tonnes
(a)		0.667	115.9

PROJECT TITLE:	Terminal umbrella
ODS use at enterprise (ODP tonnes):	164.3
ODS to be phased out (ODP tonnes):	164.3
ODS to be phased in (ODP tonnes):	39.8
Project duration (months):	18
Initial amount requested (US \$):	1,440,964
Final project cost:	
Incremental Capital Cost (US \$)	1,299,965
Contingency (10%) (US \$)	60,197
Incremental Operating Cost (US \$)	-64,017
Total Project Cost (US \$)	1,296,145
Local ownership (%):	100
Export component (%):	10
Requested grant (US \$):	1,296,145
Cost-effectiveness (US \$/kg):	7.89
Implementing agency support cost (US \$):	97,210
Total cost of project to Multilateral Fund (US \$):	1,393,355
Status of counterpart funding (Y/N):	Y
Project monitoring milestones included (Y/N):	Y

SECRETARIAT'S RECOMMENDATION	Pending
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PROJECT DESCRIPTION

Background

1. The Government of Egypt has submitted for consideration by the Executive Committee at its 44th Meeting a terminal solvent sector umbrella project in Egypt. The project, to be implemented by UNIDO, will enable Egypt to eliminate the remaining consumption of ODS solvents (TCA, CTC and CFC-113) by 1 January 2007.

2. A total consumption of 143.2 ODP tonnes of ODS solvents would be phased-out, namely: 13 ODP tonnes of CTC, 2.2 of TCA, 120 ODP tonnes of CFC-12 and 8 ODP tonnes of CFC-113. The total cost of the project, as submitted is US \$1,440,964, excluding agency support costs, including a retroactive request in the amount of US \$477,311 for a solvent/aerosol project that was identified during the preparation of the proposal.

ODS solvent consumption

3. The ODS solvent consumption data reported by the Government of Egypt to the Fund Secretariat is presented in the following table:

ODS (ODP tonnes)	2001	2002	2003	Baseline
CTC	11.0	10.0	11.8*	38.5
TCA	15.0	19.0	18.0	26.0
CFC-113	17.0**	16.0	15.0***	
Total	43.0	45.0	44.8	

*Original 8.8 ODP tonnes corrected to 11.8 ODP tonnes (letter of 23/09/2004 from EEAA to UNEP).

**By back-extrapolation since no separate figure reported for CFC-113 (included with CFCs).

***Includes 5 ODP tonnes from an aerosol project (ADCO) which will be submitted separately.

4. ODS solvents are mainly used in Egypt in electronics, optics, metal cleaning and formulation of cleaners. The 2003 reported consumption of ODS solvents (44.8 ODP tonnes) represents less than 3 per cent of the total 2003 reported consumption of ODSs.

5. During the preparation of the project, it was found that one company (ADCO), was using 5 ODP tonnes of CFC-113 for the preparation of metered dose inhalers. Therefore the CFC-113 consumption by ADCO is not part of the terminal phase-out project.

Solvent phase out projects already approved for Egypt

6. The Executive Committee has approved the following seven investment project proposals in the solvent sector that have been implemented with a total phase-out of 14.5 ODP tonnes of CFC-113 and 14.5 ODP tonnes of TCA:

- (a) Conversion of cleaning processes from 1,1,1 TCA to aqueous cleaning at Islamic Company for Industrialization (Siltal), approved by the Executive Committee at its 18th Meeting. US \$48,784 was allocated to UNIDO for its implementation. The project has been completed and 2.0 ODP tonnes of TCA have been phased out;

- (b) Conversion of cleaning processes from CFC-113 and 1,1,1 TCA to semi-aqueous cleaning at Arab International Optronics, approved by the Executive Committee at its 18th Meeting. US \$48,533 was allocated to UNIDO for its implementation. The project has been completed and 1.6 ODP tonnes of CFC-113 and 0.5 ODP tonnes of TCA have been phased out;
- (c) Conversion of electronic cleaning processes from ODS solvents to non-ODS cleaning at three electronic companies (Benha Co. for Electronics Industry, A.I.O. Electronics Factory, Sakr Factory), approved by the Executive Committee at its 18th Meeting. US \$227203 was allocated to UNIDO for its implementation. The project has been completed and 12.9 ODP tonnes of CFC-113 and 0.8 ODP tonnes of TCA have been phased out;
- (d) Conversion of cleaning processes from 1,1,1 TCA to cleaning in perchloroethylene at Abbasol, approved by the Executive Committee at its 19th Meeting. US \$154,544 was allocated to UNIDO for its implementation. The project has been completed and 8.0 ODP tonnes of TCA have been phased out;
- (e) Conversion of cleaning processes from 1,1,1 TCA to aqueous cleaning at Technopol, approved by the Executive Committee at its 19th Meeting. US \$125,249 was allocated to UNIDO for its implementation. The project has been completed and 6.0 ODP tonnes of TCA have been phased out;
- (f) Conversion of TCA used for the formulation of degreasing and contact cleaners and crack detectors to new formulations with special hydrocarbons and heavy chlorinated ester at Sien, approved by the Executive Committee at its 28th Meeting. US \$231,435 was allocated to UNIDO for its implementation. The project has been completed and 8.980 ODP tonnes of TCA have been phased out;
- (g) Conversion of metal cleaning processes from TCA solvent to TCE degreasing for engineering industries at Maasara Co., approved by the Executive Committee at its 31st Meeting. US \$294,950 was allocated to UNIDO for its implementation. The project has been completed and 10.7 ODP tonnes of TCA have been phased out;

Terminal phase-out plan

7. For the preparation of the terminal phase-out project, the Ozone Unit and the UNIDO consultant worked closely with the responsible Ministries, importers and end-users to quantify the remaining applications for ODS solvents. The potential ODS solvent consuming companies were surveyed through a questionnaire; selected users were visited by a local consultant and by a UNIDO representative.

8. Based on the survey conducted, the following enterprises and end-users were found to still be using ODS solvents:

CTC solvent

9. The following two enterprises are using CTC in their processes:
- (a) El-Asher Copper Products, with an average 2001-2003 CTC consumption of 6.6 ODP tonnes used to clean copper tubing prior to heat treatment; and
 - (b) Morgan Chemical Co., with an average 2001-2003 CTC consumption of 8.4 ODP tonnes used for the application of wax coating to calcium carbonate filler.
10. The 2003 reported CTC consumption for the two enterprises is 11.8 ODP tonnes. The remaining small CTC consuming enterprises will be identified and invited to participate in technical workshops since they will not receive direct financial assistance for their conversions.
11. The project proposes the conversion of El-Asher Copper Products from CTC to perchloroethylene and includes an open top degreaser and a water chiller. The project proposes the conversion of Morgan Chemical Co. from CTC to a wet process for coating calcium carbonate to make a white reinforcing rubber filler. Conversion includes a new stainless steel emulsifying unit, a blender and rotary or spray drier.
12. The estimated cost of the conversion of the three enterprises is US \$210,230 with the following cost breakdown:

Company	Capital costs (US \$)	Operating costs (US \$)	Total costs (US \$)	CE (US\$/kg)
El-Asher Copper Products	77,880	139	78,019	11.82
Morgan Chemical Co.	114,840	17,371	132,211	17.17
Total	192,720	17,510	210,230	15.93

TCA solvent

13. TCA is mainly used by three enterprises, namely GEITC, TCL, and 5H, for formulation of solvent blends for electrical, metal, household and other cleaning applications.
14. The project proposes the conversion of the three industries as follows:
- (a) For GEITC, with a TCA consumption of 8.0 ODP tonnes used in the formulation of cleaners, a new process will be installed to make two new surfactants needed for the substitute formulations using polybutylene glycol ether solvent. The conversion includes installation of a mixer, a reactor, filling machine, heat exchanger, a chiller, a settling tank and boiler;
 - (b) For TCL, with a TCA consumption of 9.2 ODP tonnes used in the formulation of cleaners, a new process will be installed to make two new surfactants needed for the substitute formulations using butylene glycol ether solvent. The conversion includes installation of a mixer, a reactor, filling machine, heat exchanger, a chiller, a settling tank and boiler; and

- (c) For 5H, with a TCA consumption of 1.5 ODP tonnes used in the formulation of cleaners, new formulations based on isopropyl alcohol will be developed. The conversion includes a ventilation system, three flame-proof motors and explosion-proofing of the workshop.

15. The estimated cost of the conversion of the three enterprises is US \$603,423 with the following cost breakdown:

Company	Capital costs (US \$)	Operating costs (US \$)	Total costs (US \$)	CE (US \$/kg)
GEITEX	272,525	-6,467	266,058	32.23
TCL	274,065	15,536	289,601	31.57
5H	67,100	-19,336	47,764	31.84
Total	613,690	-10,267	603,423	15.93

CFC-113 solvent

16. The remaining use of CFC-113 (10 ODP tonnes) is for cleaning live electrical equipment. During the preparation of the project proposal 34 small-size enterprises were identified. The phase out of CFC-113 by these users together with other users that may subsequently be identified, will be through a technical assistance programme at a total cost of US \$50,000.

Retroactive funding for CANCO.

17. During the preparation of the project proposal in 2004, it was found that until 1993, CANCO an aerosol manufacturing plant had used 4.5 ODP tonnes of TCA and 120 ODP tonnes of CFC-12 in its products. The enterprise converted on its own initiative and at its own expense to non-ODS technology.

18. CANCO was the first aerosol manufacturer in Egypt that converted from CFCs to hydrocarbon grade aerosol propellant technology. TCA as a solvent was replaced by isoparaffin. Major investment costs associated with the conversion included: an LPG storage tank (US \$183,000), an LPG tank trailer (US \$150,000), an LPG vessel (US \$35,000), two automatic water baths (US \$130,000), an automated gasser (US \$ 30,000), a conveyor (US \$18,000), a destenching column (US \$ 10,000), a gas detection (US \$17,000) and fume hoods (US \$10,000). Annual operating savings were calculated at US \$22,300.

19. UNIDO and the Government of Egypt regard this as a retroactive project spanning the solvent and aerosol sectors and therefore requested an additional US \$477,311 for this retroactive project. The cost-effectiveness value of the project is US \$3.83/kg.

Management and execution

20. Implementation of the project will need to be closely co-ordinated with the various policy, regulatory, fiscal, awareness and capacity-building actions that the Government of Egypt is taking in order to ensure that the implementation of the phase-out project is consistent with the Government priorities. Furthermore, in view of the performance-based targets needed to be

achieved, the implementation of the project will need to be closely and efficiently managed and will introduce additional co-ordinating, reporting and monitoring activities.

21. Therefore, it is proposed that the terminal phase-out project be managed by a Policy and Management Support Committee. The total cost for the management of the project is US \$100,000.

22. The Government of Egypt is requesting disbursement of the project cost as follows:

Year	ODS phase-out target (ODP tonnes)	Remaining consumption (ODP tonnes)	Total cost (US\$)
2005	25	39.8	840,964
2006	14.8	14.8	600,000
2007	0	0	0
Total			1,440,964

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

23. The Secretariat reviewed the project proposal in the light of the relevant ODS consumption reported by Egypt under Article 7, projects in the solvent and aerosol sectors approved for Egypt, the rules of the Multilateral Fund and relevant decisions of the Executive Committee.

ODS solvent consumption

24. The Secretariat pointed out that the 2003 CTC consumption reported by Egypt under both Article 7 and the report on progress with implementation of its country programme is 12.9 ODP tonnes and not 11.8 ODP tonnes indicated in the proposal.

25. It is reported in the project that a company (ADCO) is currently consuming 5 ODP tonnes of CFC-113 for MDI production. The Secretariat pointed out, however, that it was not aware of any reference to the use of CFC-113 for MDIs and it has not been evident in any Fund-related MDI projects or activities.

Technical issues

26. The Secretariat raised several technical issues with UNIDO regarding the conversion of the enterprises covered under the terminal phase-out project. Specifically:

- (a) TCL company: The flammability of alternative solvents proposed and the associated requirements for expensive explosion-proof electrics and installation requirements on the basis of combustible substances; the request for reaction vessels to make certain chemicals in fairly small quantities which represent very laborious and expensive processes; the capacity of the proposed replacement

equipment that may be about four times the current production level; and the request for explosion-proof equipment for certain chemicals that are not normally considered as flammable or combustible;

- (b) GEITEX company: The equipment is said to have been installed in 1995. Specific and verified information about the date of installation should be provided in order to substantiate that the requirements of Decision 17/7 have been met (the Executive Committee decided not to consider any projects to convert any ODS-based capacity installed after 25 July 1995). Technical issues are similar to the issues raised under the TCL company;
- (c) 5H company: The proposed use of substitutes do not to perform well for engine cleaning; and the request for the ventilation system (twice the cost of all the original equipment) is high for what appears to be a small factory;
- (d) Morgan company: The cost-effectiveness of this project is much higher than values so far approved in similar CTC projects. Other technical options may be available as an alternative to replacing most of the baseline equipment. Some proposed equipment is designed specifically for the food, pharmaceutical and cosmetic industries and is therefore expensive. Equivalent industrial grade equipment may be available;
- (e) El-Asher company: There appears to be scope for more cost-effective approaches to the specifications of some of the equipment. An issue concerning technological upgrade was also raised since the existing equipment is indicated as being an open top cold dip degreaser which appears to be a simple tank.

Retroactive funding

27. In relation to the proposal for retroactive funding for CANCO, the Secretariat pointed out to UNIDO that the request was not eligible for the following reasons:

- (a) Egypt reported in its country programme that the use of CFCs as a propellant was banned in new enterprises with effect from 1991 by Ministerial Decree 977 issued in 1989;
- (b) UNIDO's report to the 10th Meeting of the Executive Committee (July 1993) concerning Egypt's institutional strengthening project indicated that consumption in the aerosol sector was already zero. Subsequently, the final report of Phase III of institutional strengthening project also included the information that enterprises in Egypt converted to the new ODS phase-out technology on their own initiatives;
- (c) It is impractical to attempt to establish the consumption data, baseline status and other eligibility requirements for determination of incremental costs eleven years after completion of a conversion; and

- (d) The selection of a single enterprise for retroactive funding would be inequitable to the remainder of the industry in the country as well as to other sectors in various Article 5 countries where most or all of the sector phase-out occurred through enterprise initiatives.

Level of funding request

28. Considering the relatively small size of the sector plan and consequent level of cost, the Secretariat indicated that it may be more appropriate to seek the entire funding in a single tranche, and without a separate agreement. The conditions relevant to this being the final phase-out in the sector could be contained in a draft decision.

29. The remaining cost and eligibility issues are being discussed with UNIDO and additional advice will be provided to the Executive Committee.

RECOMMENDATIONS

Pending.
