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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Forty-first Meeting
Montreal, 17 - 19 December 2003

PROJECT PROPOSAL: ROMANIA

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

Solvent

- Terminal umbrella project for phase-out of ODS solvents

UNIDO

**PROJECT EVALUATION SHEET
ROMANIA**

SECTOR: Solvents ODS use in sector (2002): 11.1 ODP tonnes

Sub-sector cost-effectiveness thresholds: N/A

Project Titles:

(a) Terminal umbrella project for phase-out of ODS solvents

Project Data	Multiple
	Terminal Umbrella
Enterprise consumption (ODP tonnes)	11.1
Project impact (ODP tonnes)	11.1
Project duration (months)	12
Initial amount requested (US \$)	250,833
Final project cost (US \$):	
Incremental capital cost (a)	196,525
Contingency cost (b)	19,652
Incremental operating cost (c)	4,438
Total project cost (a+b+c)	220,615
Local ownership (%)	100
Export component (%)	0
Amount requested (US \$)	220,615
Cost effectiveness (US \$/kg.)	19.88
Counterpart funding confirmed?	N/A
National coordinating agency	Ministry of Agriculture, Forestry, Waters and Environment
Implementing agency	UNIDO

Secretariat's Recommendations	
Amount recommended (US \$)	220,615
Project impact (ODP tonnes)	11.1
Cost effectiveness (US \$/kg)	19.86
Implementing agency support cost (US \$)	19,855
Total cost to Multilateral Fund (US \$)	240,490

PROJECT DESCRIPTION

1. UNIDO has submitted a terminal umbrella project to the 41st Meeting on behalf of the Government of Romania to phase out an estimated 11.1 ODP tonnes of CTC in the solvent sector. UNIDO indicates that based on the average of 2000-2001, the CTC consumption of Romania was 289.3 ODP tonnes out of which 11.1 ODP tonnes was eligible for funding. The rest of the consumption (278.2 ODP tonnes) was in applications that are not yet included in the list of approved process agent applications.

2. The terminal umbrella project consists of two sub-projects as listed below.

Sub-project	CTC ODP tonnes	Project cost US \$	Cost-effectiveness US \$/kg
Conversion of cleaning installation from CTC to tetrachloroethylene (PER) at S.C. Arpechim	4.5	101,233	22.49
Awareness and training programme on ODS solvent phase-out for small-scale enterprises (SMEs) in Romania	6.6	149,600	22.67
Total	11.1	250,833	22.60

Conversion of cleaning installation from CTC to tetrachloroethylene (PER) at S.C. Arpechim

3. S.C. Arpechim is a petrochemical complex and manufacturer of industrial gases, including oxygen and nitrogen which it uses in its own production and also distributes to customers in 50 litre gas cylinders. Annual production of oxygen and nitrogen is 32.85 million and 131.4 million cubic metres respectively. The main equipment for the manufacture of the gases is the compressor. CTC is used as cleaning solvent to degrease the movable parts and bodies during periodic maintenance and repair of the compressors.

4. The company is reported to have used 6.7 tonnes of CTC in 2000. In order to reduce the CTC consumption in degreasing operations it built pipelines to connect its ethylene oxide production plant and oxygen production plant, thus reducing CTC consumption by half in 2001 and 2002. However, in 2003 the company plans to conduct maintenance and repair works at one oxygen production plant and an increase in the CTC consumption by 1.5 tonnes to about 4.0 tonnes is foreseen. 67% of the total CTC consumption is used for cleaning of gas cylinders and 33% for cleaning compressors and compressors' parts.

5. The annual production of oxygen and nitrogen and solvent consumption is given in the table below.

Year	Oxygen/Nitrogen production in cubic metres	CTC consumption in ODP tonnes
1999	140,000,000	6.23
2000	170,000,000	6.70
2001	157,000,000	3.20
2002	164,000,000	2.50

6. The compressor housing and contaminated moving parts are cleared manually by wiping and brushing while compressor moving parts such as pistons, cooling coils, safety valves, etc. are cleaned in open air plastic tanks. The gas cylinders are also cleaned through essentially manual operations. Contaminated CTC is discarded while waste water is channelled into the company's water treatment plant. It is proposed to replace the use of CTC with tetrachloroethylene and replace the existing equipment with an open top tetrachloroethylene degreaser at the cost of US \$30,000 together with distillation unit and solvent filling and recovery unit at US \$18,000 and US \$10,000 respectively. Other items of capital cost add up to about US \$30,000. The project's cost is as follows:

Incremental capital cost	US \$98,697
Incremental operating cost	US \$2,536
Total project cost	US \$101,233

CTC consumption	4.5 ODP tonnes
Cost-effectiveness	US \$22.50/kg

Awareness and training programme on ODS solvent phase-out for small-scale enterprises (SMEs)

7. The objective of the programme is to phase out a total of 6.6 ODP tonnes consumed by 40 SMEs through training workshops on ODS replacement technologies and through national awareness programme at a total cost of US \$149,600.

8. The costs of the training and awareness programme include the following:

International experts	US \$60,000
Travel and per diem for participants	US \$27,000
Rental/telecommunication	US \$9,000
Sub-total	US \$96,000
Awareness programme	US \$40,000
Contingency	US \$13,600
	US \$149,600

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

9. The Fund Secretariat raised a number of issues regarding the incremental costs of the projects, particularly the incremental capital cost component of the Arpechim project and the various individual cost items of the technical assistance project. With regard to the Arpechim project, while the effort of the company to reduce the consumption of CTC at the plant was recognized, UNIDO and the Secretariat explored conversion approaches that would enable the company to carry out its metal cleaning activities in an occupationally safe environment but in a more cost-effective manner. Thus some of the items of equipment that could potentially result in technology upgrade were eliminated from the incremental cost calculation. With regard to the technical assistance, it was agreed to maintain the costs as proposed by UNIDO in view of the scope of the seminar and the possible need for international experts in two different sectors, solvent and process agent. Following these discussions the total cost of umbrella project was agreed as US \$220,615. The breakdown of the costs of the two components of the umbrella project is as follows:

Arpechim project		US \$71,015
Awareness and training programme for SMEs		US \$149,600
	Total	US \$220,615

RECOMMENDATIONS

10. The Fund Secretariat recommends blanket approval of the terminal umbrella project for phase-out of ODS solvents for Romania with the funding level and the associated agency support cost as indicated in the table below.

	Project Title	Project Funding (US\$)	Support Cost (US\$)	Implementing Agency
(a)	Terminal umbrella project for phase-out of ODS solvents	220,615	19,855	UNIDO
