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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Thirty-seventh Meeting
Montreal, 17-19 July 2002

PROJECT PROPOSAL: YUGOSLAVIA

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

Refrigeration

- Umbrella refrigeration project 2, replacement of refrigerant CFC-12 with HFC-134a and foam blowing agent CFC-11 with HCFC-141b in the manufacture of commercial refrigeration equipment at three enterprises

UNIDO

PROJECT EVALUATION SHEET YUGOSLAVIA

SECTOR: Refrigeration ODS use in sector (1996): 449 ODP tonnes

Sub-sector cost-effectiveness thresholds: Commercial US \$15.21/kg
(Rigid Foam US \$7.83/kg)

Project Titles:

- (a) Umbrella refrigeration project 2, replacement of refrigerant CFC-12 with HFC-134a and foam blowing agent CFC-11 with HCFC-141b in the manufacture of commercial refrigeration equipment at three enterprises

Project Data	Commercial
	Three enterprises
Enterprise consumption (ODP tonnes)	11.14
Project impact (ODP tonnes)	10.90
Project duration (months)	28
Initial amount requested (US \$)	150,109
Final project cost (US \$):	
Incremental capital cost (a)	131,500
Contingency cost (b)	10,130
Incremental operating cost (c)	8,479
Total project cost (a+b+c)	150,109
Local ownership (%)	100%
Export component (%)	0%
Amount requested (US \$)	150,109
Cost effectiveness (US \$/kg.)	13.80
Counterpart funding confirmed?	Yes
National coordinating agency	Federal Ministry Development Science & Environment
Implementing agency	UNIDO

Secretariat's Recommendations	
Amount recommended (US \$)	150,109
Project impact (ODP tonnes)	10.90
Cost effectiveness (US \$/kg)	13.80
Implementing agency support cost (US \$)	19,514
Total cost to Multilateral Fund (US \$)	169,623

PROJECT DESCRIPTION

Sector Background

- Latest available total ODS consumption (1999)	568.10 ODP tonnes
- Baseline consumption of Annex A Group I substances (CFCs)	849.20 ODP tonnes
- Consumption of Annex A Group I substances for the year 1999	548.60 ODP tonnes
- Baseline consumption of CFCs in refrigeration sector	Not Available ODP tonnes
- Consumption of CFCs in refrigeration sector in 1996	449.00 ODP tonnes
- Funds approved for investment projects in refrigeration sector as of March 2002	US \$2,438,297.00
- Quantity of CFC to be phased out in investment projects in refrigeration sector as of March 2002	154.50 ODP tonnes
- Quantity of CFC phased out from approved projects in the refrigeration sector	0.00 ODP tonnes
- Quantity of CFC to be phased out in projects submitted to the 37 th Meeting	10.90 ODP tonnes

1. The refrigeration sector in Yugoslavia is comprised of one manufacturer of domestic appliances (Obod) and seven major manufacturers of commercial refrigeration equipment which received assistance from the Multilateral Fund. There remains seven smaller commercial refrigeration enterprises. The total consumption of CFCs in Yugoslavia in 2000 was estimated at 996 ODP tonnes. According to information from the Government of Yugoslavia, the major part of this consumption is attributed to the refrigeration sector.

Three enterprises

2. The current project will phase-out 7.6 ODP tonnes of CFC-11 and 3.8 ODP tonnes of CFC-12 in the manufacture of commercial refrigeration equipment at three enterprises (AD Thermoplastica, Frigo Jagodina and Electrofrigo). This will be achieved by converting from CFC-11 to HCFC-141b as the foam blowing agent and from CFC-12 to HFC-134a as the refrigerant. The enterprises are involved in the manufacture of various models of commercial refrigerators and walk-in coolers, air-conditioning equipment for buses and trucks and insulation panels for cold storage. The enterprises employ low-pressure dispensers for foaming operations in the baseline, as well as charging, evacuation and leak detection equipment in handling CFC-12 refrigerant.

3. The project includes incremental capital costs requested for modification of low-pressure foaming machines, necessary retrofitting of vacuum pumps and replacement of charging boards and leak detectors. Other costs include allocations for re-design and prototyping. Incremental operating costs are requested for a period of six months at Frigo Jagodina, and three months at Electrofrigo to cover the higher cost of chemicals and components. No incremental operating costs are requested at AD Thermoplastica. The total eligible grant for Frigo Jagodina has been determined applying the cost-effectiveness threshold in the rigid foam sector for production of insulation panels.

Justification for the use of HCFC-141b

4. Justification for the use of HCFC-141b based on technological and economic analysis of each enterprise's operations is provided in the project document. UNIDO indicated that the choice of HCFC-141b as interim technology was made by the enterprises following a discussion with them on available alternatives and relevant decisions of the Executive Committee regarding the use of HCFC-141b as interim substitute foam blowing agent.

5. In accordance with relevant decisions of the Executive Committee on the use of HCFCs, a letter of transmittal from the Government of Yugoslavia endorsing the use of HCFC-141b by the companies has been submitted and is attached.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

6. The Fund Secretariat and UNIDO have discussed and agreed on the costs of the projects.

RECOMMENDATIONS

7. The Fund Secretariat recommends blanket approval of the project for the Three Enterprises with the levels of funding and associated support costs as indicated in the table below.

	Project Title	Project Funding (US\$)	Support Cost (US\$)	Implementing Agency
(a)	Umbrella refrigeration project 2, replacement of refrigerant CFC-12 with HFC-134a and foam blowing agent CFC-11 with HCFC-141b in the manufacture of commercial refrigeration equipment at three enterprises	150,109	19,514	UNIDO

8. The 10.9 ODP tonnes to be phased out by the project should be deducted from Yugoslavia's national aggregate consumption. As of writing of this document, the level of Yugoslavia's starting point consumption for determining its national aggregate consumption was still under discussion.
