UNITED
NATIONS

EP

United Nations
Environment
Programme

Distr.
LIMITED

UNEP/OzL.Pro/ExCom/37/41
20 June 2002

ORIGINAL: ENGLISH

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

PROJECT PROPOSALS: IRAN

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

Foam

• Conversion of the use of CFC to LCD in the manufacture of flexible foam at Abre Baspar foam company	Germany
• Phasing out of ODS in the manufacture of flexible slabstock foam through the use of liquid CO2 blowing technology at Esfanj Shirvan Co.	UNIDO
• Conversion from CFC-11 to pentane technology in the manufacture of integral skin PU foam at Jahad Tahghihat Group	Germany
• Conversion from CFC-11 to fully water-based technology in the manufacture of flexible moulded PU foam at Nikou Esfandj	Germany
• Conversion from CFC-11 to fully water-based technology in the manufacture of flexible moulded PU foam at Phira Khodro	Germany
• onversion from CFC-11 to fully water-based technology in the manufacture of flexible moulded PU foam at Sanayeh Dashboard Iran	Germany
• Conversion from CFC-11 to n-pentane in the production of rigid foam panels at Yakhchavan Co.	UNIDO

PROJECT EVALUATION SHEET
IRAN

SECTOR: Foam ODS use in sector (2001): 1,515.10 ODP tonnes

Sub-sector cost-effectiveness thresholds:

Flexible	US $6.23/kg
Integral Skin	US $16.86/kg
Rigid	US $7.83/kg

Project Titles:

(a) Conversion of the use of CFC to LCD in the manufacture of flexible foam at Abre Baspar foam company
(b) Phasing out of ODS in the manufacture of flexible slabstock foam through the use of liquid CO2 blowing technology at Esfanj Shirvan Co.
(c) Conversion from CFC-11 to pentane technology in the manufacture of integral skin PU foam at Jahad Tahghihat Group
(d) Conversion from CFC-11 to fully water-based technology in the manufacture of flexible moulded PU foam at Nikou Esfandj
(e) Conversion from CFC-11 to fully water-based technology in the manufacture of flexible moulded PU foam at Phira Khodro
(f) Conversion from CFC-11 to fully water-based technology in the manufacture of flexible moulded PU foam at Sanayeh Dashboard Iran
(g) Conversion from CFC-11 to n-pentane in the production of rigid foam panels at Yakhchavan Co.

Project Data	**Flexible slabstock**	**Flexible slabstock**	**Integral skin**				**Rigid**
	Abre Baspar	**Esfanj Shirvan**	**Jahad**	**Nikou Esfandj**	**Phira Khodro**	**Sanayeh Dashboard**	**Yakhchavan**
Enterprise consumption (ODP tonnes)		91.13					73.58
Project impact (ODP tonnes)	77.00	91.13	23.00	18.60	20.20	22.00	73.58
Project duration (months)	16	18	18	18	18	18	30
Initial amount requested (US $)	470,616	522,112	367,222	261,880	259,928	292,976	568,116
Final project cost (US $):							
Incremental capital cost (a)	550,000	600,000	366,000	140,000	130,000	136,000	478,150
Contingency cost (b)	55,000	47,500	36,600	14,000	13,000	13,600	46,015
Incremental operating cost (c)	-134,384	-125,388	1,222	107,880	116,928	143,376	7,673
Total project cost (a+b+c)	470,616	522,112	403,822	261,880	259,928	292,976	531,838
Local ownership (%)	100%	100%	100%	100%	100%	100%	100%
Export component (%)	0%	0%	0%	0%	0%	0%	0%
Amount requested (US $)	470,616		367,222	261,880	259,928	292,976	531,838
Cost effectiveness (US $/kg.)	6.09	5.73	15.97	14.08	12.87	13.32	7.23
Counterpart funding confirmed?		Yes					Yes
National coordinating agency	Ozone Layer Protection Center	Department of Environment	National Ozone Office				Department of Environment
Implementing agency	Germany	UNIDO	Germany				UNIDO

Secretariat's Recommendations							
Amount recommended (US $)			335,249	228,310			
Project impact (ODP tonnes)			23.00	18.60			
Cost effectiveness (US $/kg)			14.58	12.27			
Implementing agency support cost (US $)			43,582	29,680			
Total cost to Multilateral Fund (US $)			378,831	257,990			

PROJECT DESCRIPTION

Sector background*

- Latest available total ODS consumption (2001)	5,890.78 ODP tonnes
- Baseline consumption of Annex A Group I substances (CFCs)	4,571.70 ODP tonnes
- Consumption of Annex A Group I substances for the year 2001	4,204.75 ODP tonnes
- Baseline consumption of CFCs in foam sector	2,400.00 ODP tonnes
- Consumption of CFCs in foam sector in 2001	1,515.10 ODP tonnes
- Funds approved for investment projects in foam sector as of end of March 2002	US $ 8,577,666
- Quantity of CFC approved to be phased out in investment projects in foam sector as of end of March 2002	2,187.90 ODP tonnes
- Quantity of CFC phased out from approved investment projects in the foam sector as of end of March 2002 (including CFC phased out in projects not yet reported as completed)	1,200.00 ODP tonnes
- Quantity of CFCs in approved ongoing investment projects in the foam sector as of end of March 2002	987.90 ODP tonnes
- Quantity of CFCs remaining to be phased out in the foam sector as of end of March 2002	527.20 ODP tonnes
- Quantity of CFCs to be phased out in investment projects being submitted to the 37th ExCom (July 2002).	325.51 ODP tonnes
- Quantity of CFCs remaining to be phased out in the foam sector by the end of 2001	201.69 ODP tonnes

* Based on data submitted to the Fund Secretariat by the Government of the Islamic Republic of Iran on 26 May 2002

1. The latest available foam sector ODS consumption data reported by the Islamic Republic of Iran for the year 2001 was 1,515.10 ODP tonnes. The foam projects being submitted for consideration at the 37th Meeting for Iran account for 325.51 ODP tonnes. Their approval will result in total amount of 1,313.41 ODP tonnes that have been funded but not yet implemented. On the basis of 2001 sector consumption of 1,515.10 ODP tonnes, the remaining unfunded consumption in the sector would be 201.69 ODP tonnes.

Flexible Slabstock

Abre Baspar and Esfanj Shirvan

2. Abre Baspar and Esfanj Shirvan consumed 77 tonnes and 91.13 tonnes of CFC-11 respectively in 2001 in the production of slabstock foam for mattresses and furniture applications. Abre Baspar operates a locally-made Maxfoam type foam machine, while Esfanj Shirvan operates a 1975 PLA-MA machine. The companies will convert their production to the use of liquid carbon dioxide technology. The total incremental capital cost of Abre Baspar including 10% contingency amounts to US $605,000, including US $470,000 for LCD system with ancillary facilities and US $80,000 for trials, training and technical support. The total incremental capital cost of conversion for Esfanj Shirvan including 10% contingency amounts to

US $647,500 which includes US $330,000 for the LCD system, US $225,000 for other ancillary facilities, and US $45,000 for trials, technology transfer and training. Incremental operating savings of US $134,384 and US $125,388 are realized in the Abre Baspar and Esfanj Shirvan projects, respectively. The requested project costs are US $470,616 and US $522,112 for the Abre Baspar and Esfanj Shirvan projects, respectively. The Abre Baspar project is expected to be completed in 1 year and 4 months, while Esfanj Shrivan will be completed in 1 year and 6 months.

Integral Skin Foam

3. Projects for four companies in the integral skin foam sub-sector (Jahad Tahghighat, Nikou Esfandj, Phira Khodro, Sanayeh Dashboard) are submitted by the Government of Germany for bilateral cooperation with the Government of the Islamic Republic of Iran. All four companies are reported to use imported premixed polyol in their foam production.

Jahad Tahghighat

4. Jahad Tahghighat consumed 23 ODP tonnes of CFC-11 in 2001. The company manufactures automobile parts such as sun visors, arm rests, steering wheels, dashboards for automobile manufacturers including Daewoo, Kia, Land Rover, Nissan and Renault. It currently operates two low-pressure dispensers installed in 1990 and 1991. The enterprise will phase out the use of CFC-11 by converting the production of steering wheels to pentane and of other products to water-blown technology. The total incremental capital cost of the project is US $325,249 covering the replacement of one low pressure dispenser with pentanized high pressure dispenser, premixing unit, and cost of fire prevention measures as well as the retrofit of the other low-pressure dispenser, mould heating system, mould upgradation, trials, technical assistance and training. Incremental operating cost of US $43,249 is requested. The project is expected to be completed in 18 months.

Nikou Esfandj

5. Nikou Esfanj, established in 1991, produces very low density (8-15 kg/m^3) calcium carbonate filled foam cushions for automobile front and rear seats, bicycle seats and furniture applications. The company uses a Hennecke high pressure foam machine which is partly functional due to its age, and also not suitable for use of fillers. It has a second Russian low pressure machine. Nikou is reported to be using very thin (about 0.8 mm thick) plated sheet steel moulds. The company consumed 18.60 ODP tonnes CFC-11 in 2001. It will convert its operations to cold cured moulded foam production. The incremental capital costs include the costa of retrofits of two dispensers (US $40,000), mould upgradation (US $70,000), mould heating system (US $10,000), trials (US $6,000), technical assistance and training (US $8,000). Incremental operating cost of US $80,910 is requested.

Phira Khodro, Sanayeh Dashboards

6. Phira Khodro was established in 1991. It produces semi-rigid foam for energy absorbing components of automobiles, while Sanayeh, established in 1992, produces dashboards, glove box cover and sound absorbing carpet also for the automobile industry. Phira Khodro uses two

locally-made low pressure machines while Sanayeh uses one each Cannon high pressure and low pressure dispensers as well as a locally-made low pressure dispenser. Phira Khodro uses epoxy filled moulds supported by aluminium housing while Sanayeh uses a mix of epoxy and aluminium moulds. Phira Khodro and Sanayeh consumed 20.2 ODP tonnes and 22 ODP tonnes respectively, in 2001. The capital cost of conversion of the two projects include retrofit of the low pressure dispensers at US $20,000 per dispenser, mould heating system (US $20,000 for Phira Khodro and US $12,000 for Sanayeh). Trials (US $8,000 for Phira Khodro and US $9,000 for Sanayeh) and technical assistance and training (US $10,000 each). Incremental operating costs of US $87,696 and US $107,532 are requested for Phira Khodro and Sanayeh respectively.

Rigid Foam

Yakhchavan

7. Yakhchavan Co., established in 1981, manufactures rigid polyurethane foam panels for industrial applications, such as sound and heat insulation, residential and office buildings, mobile cabins, etc. The company is reported to have consumed 73.58 ODP tonnes CFC in 2000 for the production of 126,000 m^2 of panels of thickness 8-12 cm. The company operates one Viking and one locally-made low pressure dispenser, both installed in 1984. It uses CFC-11 which is premixed with polyol in-house using a 1,000 ℓ locally-made premixer. The company will convert the production to the use of n-pentane as the auxiliary blowing agent. The cost of conversion includes n-pentane storage tank and ancillary facilities (US $33,000) the cost of replacement of the two low pressure dispensers (US $160,000) with a deduction of US $20,000 for old age, premixing unit (US $60,000), ventilation, gas sensors and fire protection system including independent safety inspection and certification for a total of US $175,000 commissioning, trials (US $17,000) and delivery, freight and insurance US $22,150. Incremental operating cost of US $7,673 is requested.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

Flexible Slabstock Foam

8. In view of the on-going study to re-examine the LCD technology and guidelines and in the absence of new guidelines, the Secretariat and the implementing agencies agreed to review the two LCD projects against the background of actual costs of capital items as provided in firm quotations of LCD projects under implementation in Iran and as necessary in comparison with other firm quotations of competing suppliers and in a manner that ensured that the core equipment and other major cost items in the two projects were consistent with each other. It was also agreed that the disbursement of any amounts approved for the two projects should be contingent on eventual consideration by the Executive Committee of the report of the study to re-examine the LCD guidelines.

9. The required documents which were received by the Secretariat close to the time of dispatch of documentation are under review. Consequently, the costs of the projects are still under discussion between the Secretariat and the implementing and bilateral agencies (UNIDO and GTZ). The outcome of these discussions will be communicated to the Sub-Committee on Project Review.

Integral Skin Foam

10. The Secretariat and GTZ have discussed and agreed on two of the projects in this sub-sector, namely the projects for Jahad Tahghighat and Nikou Esfandj as follows:

	ICC including 10% contingency US $	**IOC US $**	**Project Grant US $**	**Cost-effectiveness US $/kg**
Jahad Tahghighat	321,200	43,249	335,249	14.58
Nikou Esfandj	147,400	80,910	228,310	12.27

11. Agreement has not been reached on the two other projects in the sub-sector, namely Phira Khodro and Sanayeh. With regard to these two projects, outstanding issues relating to requests for upgrading their epoxy and metal moulds are not resolved. The Secretariat advised GTZ that the cost of upgrading such moulds is not an eligible incremental cost.

12. The project of Phira Khodro was submitted as an integral skin foam project. Discussion with GTZ and clarifications provided to the Secretariat showed that the company produces semi-rigid foam of density 35 kg/m^3. The Secretariat advised GTZ to revise the costs of the project consistent with the rigid foam sub-sector.

13. The Secretariat's calculation of the eligible project costs, taking into account comments in paragraphs 12 and 13 above resulted in the following.

Enterprise	**Project impact (ODP tonnes)**	**ICC including 10% contingency (US $)**	**IOC (US $)**	**Total project cost US $**	**Eligible grant US $**	**Cost-effectiveness US $/kg**
Phira Khodro	20.2	83,600	87,696	171,296	158,166	7.83
Sanayeh	22.0	78,100	107,532	185,632	186,532	8.44

Rigid Foam

Yakhchavan

14. The company is reported to have used 73.584 ODP tonnes of CFC-11 in the year 2000 to produce 126,000 m^2 of insulation panels for different applications. The Secretariat had difficulty in verifying the CFC consumption claimed in the project based on the production data provided in the project document. UNIDO was requested to clarify whether the company's reported ODS consumption of 73.584 tonnes was based on calculation using the amount of foam produced or

on the actual amount of CFC-11 purchased and used in production, and if the latter was the case, to share with the Secretariat the information provided by the company, such as invoices.

15. UNIDO subsequently provided invoices for purchases of chemicals by the company in 2001. The invoices showed that the company purchased 97.35 tonnes of CFC-11 in 2001. However, they also showed that the company purchased 35 tonnes of polyol and 40 tonnes of isocyanate (TDI) in the same year.

16. UNIDO indicated in the project document that for every 100 tonnes of isocyanate used by the company in the production of foam 66.8 tonnes of the polyol and 28.5 tonnes of CFC-11 are required. In such case, if the total purchase of TDI by the company in 2001 was 40 tonnes it would mean that only 11.4 tonnes of CFC-11 was actually used by the company in its foam production. Thus, if such was the case, the eligible grant for the project would be US $89,262 instead of US $531,838 being requested.

17. Since the information from UNIDO was received late at the Secretariat it has not been possible for the Secretariat to seek further clarifications from UNIDO as of this writing. The discussion of the project will therefore continue and the outcome of such discussion communicated to the Sub-Committee on Project Review.

RECOMMENDATIONS

18. The Fund Secretariat recommends blanket approval of the Jahad Tahghighat and Nikou Esfandj projects with the levels of funding and implementing agency support costs as indicated in the table below.

	Project Title	Project Funding (US$)	Support Cost (US$)	Implementing Agency
(c)	Conversion from CFC-11 to pentane technology in the manufacture of integral skin PU foam at Jahad Tahghihat Group	335,249	43,582	Germany
(d)	Conversion from CFC-11 to fully water-based technology in the manufacture of flexible moulded PU foam at Nikou Esfandj	228,310	29,680	Germany

---

Ref: 02/6267
Date: 2 June 2001

Islamic Republic of Iran
Department of Environment
Ozone Layer Protection Unit

In the name of God

37th Meeting of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol

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 THE ISLAMIC REPUBLIC OF IRAN

The Government of Islamic Republic of Iran requests GTZ and UNIDO to submit the projects listed in Table 1 below to the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol for consideration at its 37th Meeting.

Section I: ODS Consumption Data

1. The ODS consumption figure of the projects 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 indicates a commitment to ensure that the validated phase-out figure was realized and yielded a sustained reduction of 324.51 ODP tons from the current sector consumption of 1,515.1 ODP tons.

Table 1: Projects to be Submitted to the 37th Meeting of the Executive Committee

Project Title/Sector	Type of ODS	Consumption in sector MT (2001)	Amount to be Phased Out (ODP Tonnes)	Implementing Agency
Foam Sector				
Phasing out CFC-11 in flexible foam manufacturing at Abre Baspar with the use of liquid Co2 blowing technology	CFC-11	1,515.1	77	GTZ
Phasing out CFC-11 in flexible moulded PU foam manufacturing at Sanaye Dashboard Yaran with the use of Water-based technology	CFC-11	1,515.1	22	GTZ

Phasing out CFC-11 in flexible moulded PU foam manufacturing at Pira Khodro with the use of Water-based technology	CFC-11	1,515.1	20.2	GTZ
Phasing out CFC-11 in flexible moulded PU foam manufacturing at Jahad Tahghighat Group with the use of pentane technology	CFC-11	1,515.1	23	GTZ
Phasing out CFC-11 in flexible moulded PU foam manufacturing at Nikou Esfandj with the use of Water-based technology	CFC-11	1,515.1	18.6	GTZ
Phasing out CFC-11 in the rigid PU foam panels manufacturing at Yakhchavan with the use of n-pentane technology	CFC-11	1515.1	72.58	UNIDO
Phasing out CFC-11 in flexible slabstock PU foam manufacturing at Esfanj Shirvan with the use of LCD technology	CFC-11	1515.1	91.13	UNIDO
Total	CFC-11	1,515.1	324.51	GTZ/UNIDO

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.

Name and signature of person in charge:

Yousef Hojjat

Designation: Ozone National Project Director and Deputy Head of DOE
Date:
Address:

Environment Research Center, Pardissan Park. Hemmat Highway,
Ozone Layer Protection Unit
PO. Box 14665/159
Tehran - IRAN

Telephone: *+98 21 826 1116*

Fax: *+98 21 826 1117*

E-mail: *Ozone@accir.com*