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EXECUTIVE COMMITTEE OF
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PROJECT PROPOSALS: COSTA RICA

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

Refrigeration:

- Implementation of the refrigerant management plan: incentive programme for the commercial, industrial, and fishing fleet refrigeration end-user sub-sector UNDP
- Implementation of the refrigerant management plan: technical assistance for the refrigeration servicing sub-sector UNDP
- Implementation of the refrigerant management plan: technical assistance for certification and licensing of refrigeration technicians UNDP
- Implementation of the refrigerant management plan: technical assistance for training of customs officers UNDP
- Implementation of the refrigerant management plan: technical assistance for strengthening of legal framework UNDP
- Implementation of the refrigerant management plan: technical assistance for information and awareness UNDP
- Implementation of the refrigerant management plan: ensuring the effectiveness of all the project proposed with the RMP UNDP

PROJECT EVALUATION SHEET COSTA RICA

SECTOR: Refrigeration ODS use in sector (2002): 137.4 ODP tonnes

Sub-sector cost-effectiveness thresholds: N/A US \$/kg

Project Titles:

- (a) Implementation of the refrigerant management plan: incentive programme for the commercial, industrial, and fishing fleet refrigeration end-user sub-sector
- (b) Implementation of the refrigerant management plan: technical assistance for the refrigeration servicing sub-sector
- (c) Implementation of the refrigerant management plan: technical assistance for certification and licensing of refrigeration technicians
- (d) Implementation of the refrigerant management plan: technical assistance for training of customs officers
- (e) Implementation of the refrigerant management plan: technical assistance for strengthening of legal framework
- (f) Implementation of the refrigerant management plan: technical assistance for information and awareness
- (g) Implementation of the refrigerant management plan: ensuring the effectiveness of all the project proposed with the RMP

Project Data	Refrigerant management plan						
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
Enterprise consumption (ODP tonnes)							
Project impact (ODP tonnes)	36.5	46.0					
Project duration (months)	36	36	48	24	36	48	48
Initial amount requested (US \$)	249,500	308,200	126,000	80,000	40,000	100,000	63,000
Final project cost (US \$):							
Incremental capital cost (a)							
Contingency cost (b)							
Incremental operating cost							
Total project cost (a+b+c)	200,500	180,000	100,000	90,000	0	0	60,000
Local ownership (%)	100%	100%	100%	100%	100%	100%	100%
Export component (%)	0%	0%	0%	0%	0%	0%	0%
Amount requested (US \$)	200,500	180,000	100,000	90,000	0	0	60,000
Cost effectiveness (US \$/kg.)	6.85	3.91					
Counterpart funding confirmed?							
National coordinating agency	Ministry of Environment						
Implementing agency	UNDP						

<i>Secretariat's Recommendations</i>							
Amount recommended (US \$)	200,000	180,000	100,000	90,000	0	0	60,000
Project impact (ODP tonnes)	36.5	46.0					
Cost effectiveness (US \$/kg)	6.85	3.91					
Implementing agency support cost(US \$)	18,000	16,200	9,000	8,100	0	0	5,400
Total cost to Multilateral Fund (US \$)	218,000	196,200	109,000	98,100	0	0	65,400

PROJECT DESCRIPTION

Background

1. The Government of Costa Rica submitted for consideration by the Executive Committee at its 41st Meeting the refrigerant management plan (RMP) update project proposal.

Servicing sector

2. The 2002 CFC data reported by the Government of Costa Rica under Article 7 was 137.4 ODP tonnes used for servicing refrigeration equipment (including 0.8 ODP tonnes in the commercial manufacturing sub-sector). The CFC baseline for compliance is 250.2 ODP tonnes.

3. The distribution of CFC consumption by type of refrigeration equipment is presented in the table below:

Sector	Installed capacity (ODP tonnes)	Annual use (ODP tonnes)	%age
Domestic refrigeration	110.3	11.0	9.3%
Commercial refrigeration	43.3	10.8	9.1%
MAC	106.9	32.1	26.9%
Fishing fleet	14.4	63.9	53.5%
Refrigerated transport	1.9	0.3	0.2%
Industrial refrigeration	2.1	1.2	1.0%
Total	278.9	119.3	100.0%

4. The refrigeration maintenance and servicing sector are divided into two areas of specialization, namely domestic, commercial and air conditioning equipment servicing workshops and MAC and refrigerated transport servicing workshops. The maintenance of industrial refrigeration equipment is, in the majority of cases, the responsibility of the maintenance department of the industrial company.

5. There are approximately 1,000 active refrigeration technicians in the country, including technicians with a formal education and those who have only received on-the-job training. There are 300 established servicing workshops servicing domestic, commercial, air conditioning and MAC systems.

6. According to the survey conducted for the preparation of the RMP proposal, 64 tonnes of CFC-12 (53.6 per cent of the total consumption) are used for servicing the fishing fleet. While the total amount of CFC-12 charged in 69 industrial and semi-industrial fishery vessels is only 3.95 tonnes (57 kg/vessel), the annual amount of CFCs used for servicing them is 64 tonnes (almost one tonne/vessel). This excessive consumption is associated with, amongst others, high leakage rates of the systems, lack of devices to mitigate vibrations in the systems, lack of maintenance associated with the critical economic situation of the sector, and no remaining operating life for a large number of the systems.

7. Based on the National Public Registry of Personal Property of the total vehicles in operation (472,670), about 133,450 are fitted with a CFC-12 MAC unit and 30 per cent of them are serviced annually (about 32 ODP tonnes of CFC-12). The MAC servicing sector is concentrated in San Jose, where approximately 50 workshops have been identified.

8. There are two professional refrigeration technicians associations in the country: the Costa Rican Association of Refrigeration and Air Conditioning Technicians (established in 1977), promoted with the national programme for recovery and recycling of refrigerants approved by the Executive Committee at its 8th and 20th Meetings; and the Association of Air Conditioning Technicians that Protect the Ozone Layer, that was promoted by the demonstration project on MAC and refrigerated transport approved by the Executive Committee at its 19th Meeting, and was formed by the 14 workshops that participated in the project (currently, this association is making efforts to attract new members).

9. The current prices of refrigerants are: US \$3.25/kg for CFC-12, US \$6.24/kg for HFC-134a and US \$2.67/kg for HCFC-22. Between 2000 and 2003, the price of CFC-12 has increased (from US \$2.69/kg to US \$3.25/kg) while the price of HFC-134a has decreased (from US \$7.28/kg to US \$6.24/kg). The increased in the price of CFCs (approximately 25 per cent in 2003), is due to the expectation of a lower import quota. This tendency is expected to continue.

ODS regulations

10. The following legal instruments constitute the framework that governs the implementation of the Montreal Protocol in Costa Rica:

- (a) Laws 7228 and 7223 (May 1991) that approved the country's adhesion to the Vienna Convention and the Montreal Protocol, respectively;
- (b) Law 7808 (July 1998), by which the London and Montreal amendments to the Montreal Protocol were ratified; and
- (c) Technical note No. 38 (1998) from the Customs Department, requiring a license from the Ozone Unit for imports of ODS. This import licensing system does not include a quota system, which is being implemented by the Ozone Unit in a discretionary way.

11. Since 2000, the Ozone Unit, drafted a "Super Decree" with several instruments, *inter alia*, an ODS import licensing and quota system; ban imports of CFC-based refrigeration equipment; ban imports of chemical, medical or cosmetic products containing CFCs as propellant, except for MDIs, ban registration of new companies that produce, import or export ODSs; establishment of a Consultative Ozone Committee with representatives from the Ministries of Environment, Health, Agriculture, Public Works, Foreign Affairs, Foreign Trade, Treasure, and Customs Department; develop a set of sectoral regulations (refrigeration, aerosols, MB); and create a Committee for MB phase out.

12. However, there were difficulties in obtaining approval of the decree. The Ozone Unit is currently in the process of dividing the decree and establishing a formal process for consultation with the specific sectors involved.

Projects previously approved

13. The Executive Committee has approved the following projects in the refrigeration sector in Costa Rica:

- (a) National programme for recovery and recycling of refrigerant (UNDP) comprising 120 recovery units and 6 recycling centres and 6 training workshops for service technicians. A total of 18 ODP tonnes of CFC has been phased out;
- (b) Elimination of CFC-11 and CFC-12 in the manufacture of domestic refrigerators at Atlas Eléctrica S.A. (UNDP). The project has been completed with a total phase out of 27 ODP tonnes of CFCs;
- (c) Demonstration project on MAC and refrigerated transport (bilateral cooperation by the United States) to provide recycling equipment (from UNDP's Phase II Global MAC Project), follow up on data collection, training on HFC-134a equipment, develop and demonstrate an approach to recover a portion of any operating cost savings realized by the equipment recipients. The project has been completed;
- (d) Phase-out of CFC-11 and CFC-12 by conversion to HCFC-141b and HFC-134a respectively in the manufacture of commercial refrigeration equipment at Refrigeración Hermanos González, S.A. (UNDP). The project has been completed with a total phase out of 4.4 ODP tonnes of CFCs;
- (e) Phase-out of CFC-11 and CFC-12 by conversion to HCFC-141b and HFC-134a respectively in the manufacture of commercial refrigeration equipment at Refrigeración Wimmer Hnos., S.A. (UNDP). The project has been completed with a total phase out of 5 ODP tonnes of CFCs; and
- (f) Phase-out of CFC-11 and CFC-12 by conversion to HCFC-141b and HFC-134a respectively in the manufacture of commercial refrigeration equipment at Refrigeración Omega, S.A. (UNDP). The project has been completed with a total phase out of 4 ODP tonnes of CFCs.

Compliance strategy

14. Costa Rica will need to reduce CFC consumption by 12.15 and 87.62 ODP tonnes in 2005 and 2007, respectively to achieve the Montreal Protocol's phase out targets. In this regard, the Government' compliance strategy, driven mainly by industry, is based on:

- (a) Technical and financial assistance to the servicing sector, to reduce unnecessary CFC consumption;

- (b) Reinforcement of ODS legislation, to improve the ODS Import Licensing System, reduce the dependency on CFC-based equipment, and regulate operations of the servicing sector;
- (c) Awareness and information to the industry sector, taking into consideration the country's commitments to protect the ozone layer; and
- (d) Monitoring and controlling the compliance strategy to ensure the expected results.

15. The CFC compliance strategy will be implemented through a RMP project consisting of the following seven sub-projects:

- (a) Incentive programme for commercial, industrial, and fishing fleet refrigeration end-user sectors (US \$249,500), to provide an economic incentive to end-users that will replace or retrofit their CFC-based equipment;
- (b) Technical assistance for the refrigeration servicing sub-sector (US \$308,200), including a recovery and recycling programme covering 50 per cent of the fishing fleet; complement the MAC and the commercial refrigeration recovery and recycling programmes previously approved; assistance programme for promoting the use of nitrogen as a flushing agent, and assistance for the storage of non-recyclable CFC12 until a permanent solution could be found;
- (c) Technical assistance for certification of refrigeration technicians (US \$126,000), to establish a "refrigeration technician certification and licensing system" and enforcement system, to encourage the use of good refrigeration servicing, maintenance and containment practices by refrigeration technicians;
- (d) Technical assistance for training of customs officers in monitoring and controlling CFC imports (US \$80,000), through better implementation of the CFC Import Licensing System, detection of illegal imports of CFC, and providing ODS identification kits;
- (e) Technical assistance for strengthening the legal framework (US \$40,000), to support the RMP proposal and achieve a better control of CFC imports and exports, reduce dependency on CFCs, and reduce consumption of CFCs through better refrigeration maintenance and servicing practices;
- (f) Technical assistance for information and awareness (US \$100,000), to provide information and raise the awareness and commitment of all stakeholders concerning the Montreal Protocol obligations and the RMP project; and
- (g) Monitoring programme (US \$63,000), to ensure the effectiveness of all the RMP proposed activities, by periodic verification of project results, analysis of problems encountered and application of corrective measures.

16. The total cost of the RMP project has been estimated at US \$966,700.

17. The Costa Rica RMP project was submitted with an official letter from the Government of Costa Rica (from the Ministry of the Environment and Energy), stating the Government's commitment to achieve at least the 50 per cent reduction in consumption of CFCs by 2005 and the 85 per cent reduction by 2007.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

18. The Secretariat noted the thorough analysis undertaken by the Government of Costa Rica with the assistance of UNDP, resulting in submission of a comprehensive, detailed and well prepared project proposal.

Status of legislation

19. The Secretariat pointed out that according to Decision 31/48, relevant ODS legislation should be prepared at the time of the preparation of the project proposal to avoid any delays in the implementation of the RMP. With the funding approved for the preparation of the Costa Rica RMP project, it would have been expected that the ODS regulations would have been already in place; therefore, the request for strengthening the legal framework (US \$40,000) was ineligible. On this basis, UNDP withdrew the request for this activity.

MAC and fishing vessels

20. Taking into consideration the excessive amount of CFCs used for servicing fishing vessels (about 16 times the refrigerant system's charge) and the relatively small number of vessels with a CFC-based refrigeration system (69 units), the Secretariat suggested that UNDP examine the merits of providing more resources for eligible activities to phase out the CFC consumption in this sub-sector (e.g., technical assistance to enhance the operation of the refrigeration systems in the vessels; basic tooling for servicing the refrigeration systems during fishing operations; re-orienting the incentive programmes towards the fishing vessels needs). It was also noted that if these vessels ceased using CFCs, Costa Rica would be able to nearly achieve the 2007 CFC phase-out target.

21. The Secretariat and UNDP also discussed issues related to the long long-term sustainability and cost effectiveness of the incentive programme for end-users, as presented (US \$47.00/kg to US \$62.50/kg).

22. Subsequently, UNDP informed the Secretariat that the Government of Costa Rica will endeavour to give priority to the fishing sector, and submitted a revised project proposal, addressing the issues raised by the Secretariat. The revised proposal consists of the following activities:

- (a) Incentive programme for the commercial, industrial, and fishing end-user sector (US \$200,000);
- (b) Technical assistance for the refrigeration servicing sub-sector (US \$180,000);

- (c) Technical assistance for certification of refrigeration technicians (US \$100,000);
- (d) Technical assistance for training of customs officers (US \$90,000); and
- (e) Monitoring the activities included in the RMP project (US \$60,000).

23. The Secretariat proposed that UNDP should have flexibility in utilizing the resources available under the incentive programme for end-users and the technical assistance for the refrigeration servicing sub-sector (approximately US \$380,000) when specific needs arise during project implementation (e.g., to provide more recycling machines in the event of a steep rise in the price of CFCs, or to purchase basic service tools should technicians experience difficulties in implementing good practices). Thus, the objective would be to continuously monitor and survey the needs of technicians and adapt the project accordingly.

24. The revised project is in accordance with the provisos of Decision 31/48.

RECOMMENDATION

25. The Fund Secretariat recommends blanket approval of the projects at the funding level indicated below, on the understanding that:

- (a) The Government of Costa Rica would have flexibility in utilizing the resources available under the incentive programme for end-users and the technical assistance for the refrigeration servicing sub-sector, to address specific needs that might arise during project implementation;
- (b) To the extent possible, the incentive programme for end-users and the technical assistance for the refrigeration servicing sub-sector would be implemented in stages so that resources can be diverted to other activities, such as additional training or procurement of service tools, if the proposed results are not achieved; and
- (c) UNDP would provide appropriate monitoring throughout project implementation

Project Titles	Project Funding (US\$)	Support Cost (US\$)	Implementing Agency
Implementation of the refrigerant management plan: incentive programme for the commercial, industrial, and fishing fleet refrigeration end-user sub-sector	200,000	18,000	UNDP
Implementation of the refrigerant management plan: technical assistance for the refrigeration servicing sub-sector	180,000	16,200	UNDP
Implementation of the refrigerant management plan: technical assistance for certification and licensing of refrigeration technicians	100,000	9,000	UNDP
Implementation of the refrigerant management plan: technical assistance for training of customs officers	90,000	8,100	UNDP
Implementation of the refrigerant management plan: ensuring the effectiveness of all the project proposed with the RMP	60,000	5,400	UNDP
