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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 PROPOSALS: BRUNEI DARUSSALAM**

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

Refrigeration

- Implementation of the refrigerant management plan: technical assistance for the refrigeration service and MAC sectors UNDP
- Implementation of the refrigerant management plan: monitoring of the activities included in the RMP UNEP
- Implementation of the refrigerant management plan: customs training UNEP
- Implementation of the refrigerant management plan: training of trainers in good refrigerant management practices and national technicians training UNEP

**PROJECT EVALUATION SHEET  
BRUNEI DARUSSALAM**

PROJECT TITLES		BILATERAL/IMPLEMENTING AGENCY
(a)	Implementation of the refrigerant management plan: technical assistance for the refrigeration service and MAC sectors	UNDP
(b)	Implementation of the refrigerant management plan: monitoring of the activities included in the RMP	UNEP
(c)	Implementation of the refrigerant management plan: customs training	UNEP
(d)	Implementation of the refrigerant management plan: training of trainers in good refrigerant management practices and national technicians training	UNEP

<b>NATIONAL CO-ORDINATING AGENCY</b>	NOU, Ministry of Development
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**LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN PROJECT**

**A: ARTICLE-7 DATA (ODP tonnes, 2002, as of October 2004)**

Annex A Group I CFCs	43.40		
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**B: COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes, 2003, as of July 2004)**

ODS Name	Sub-sector/quantity	Sub-sector/quantity	Sub-sector/quantity	Sub-sector/quantity.
CFCs	66.87			

<b>CFC consumption remaining eligible for funding (ODP tonnes)</b>	78.20
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CURRENT YEAR BUSINESS PLAN ALLOCATIONS		Funding US \$	Phase-out ODP tonnes
	(a)	226,000	10.0
	(b) to (d)	150,000	--

PROJECT TITLE:	(a)	(b)	(c)	(d)
<b>ODS use at enterprise (ODP tonnes):</b>		40.14		
<b>ODS to be phased out (ODP tonnes):</b>		*		
<b>ODS to be phased in (ODP tonnes):</b>		n/a		
<b>Project duration (months):</b>	29	36	24	24
<b>Initial amount requested (US \$):</b>	434,430	23,500	40,000	62,000
<b>Final project cost:</b>				
Incremental Capital Cost (US \$)	385,000			
Contingency (10%) (US \$)	5,000			
Incremental Operating Cost (US \$)				
Total Project Cost (US \$)	390,000	22,000	34,000	50,000
<b>Local ownership (%):</b>	100	100	100	100
<b>Export component (%):</b>	0	0	0	0
<b>Requested grant (US \$):</b>	390,000	22,000	34,000	50,000
<b>Cost-effectiveness (US \$/kg):</b>		n/a		
<b>Implementing agency support cost (US \$):</b>	29,250	2,860	4,420	6,500
<b>Total cost of project to Multilateral Fund (US \$):</b>	419,250	24,860	38,420	56,500
<b>Status of counterpart funding (Y/N):</b>		n/a		
<b>Project monitoring milestones included (Y/N):</b>		Y		

<b>SECRETARIAT'S RECOMMENDATION</b>	Blanket approval at the costs indicated above
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\* To achieve compliance with the 2005 and 2007 Montreal Protocol limits (CFC baseline is 78.20 ODP tonnes)

## PROJECT DESCRIPTION

1. The Government of Brunei Darussalam submitted a refrigerant management plan (RMP) project for consideration by the Executive Committee at its 44th Meeting.

### ODS consumption

2. CFCs are the only ODS currently consumed in the country. In 2003, about 40.1 ODP tonnes of CFC-12 were consumed for servicing domestic refrigerators (0.6 ODP tonnes), commercial and industrial refrigeration systems (0.5 ODP tonnes) and MAC units (39.0 ODP tonnes). The CFC baseline for compliance is 78.2 ODP tonnes.

3. Given the climatic conditions in Brunei Darussalam, almost all vehicles are equipped with MAC units. In 2002, nearly 110,000 vehicles were fitted with a functional CFC-12-based MAC unit. The country has recently imposed restrictions on importing cars that are over five years old.

4. Currently, there are 6 CFC-11-based and 50 CFC-12-based chillers in operation in the country, mainly used for chilling and cooling food processing and distributing plants. Most of these chillers are expected to be phased out in the next few years, so no specific funding request is sought for their replacement. Most of the newly installed equipment is based on either HCFC-22 or other non-ODS refrigerants.

5. The refrigeration servicing sector consists of 100 workshops servicing domestic and commercial refrigeration equipment, 6 workshops servicing industrial refrigeration systems and 300 MAC workshops, with 500 technicians. The service workshops have both locally trained technicians and foreign technicians. Technicians' skill level ranges from unskilled to trained. There are three major training institutions for technicians in Brunei Darussalam. However, the institutions have limited training courses or equipment for training in non-ODS technologies.

6. Over the last three years, the price of CFC-12 has been in the range of US \$3.00/kg. The price of HFC-134a has decreased from about US \$10.00/kg in 2001 to US \$6.00/kg in 2003. The price difference between CFCs and HFCs is expected to decrease in the near future.

### ODS legislation and policy framework

7. At its 26th Meeting, the Executive Committee approved funding for the establishment of the Ozone Unit in Brunei Darussalam. Since then, the Ozone Unit has assisted in the development of ODS-related legislation and in conducting the survey used to prepare the RMP project.

8. The Government of Brunei Darussalam has developed a licensing system for ODS imports and a quota system, which have yet to be approved. The Government is currently discussing ratification of the relevant amendments to the Montreal Protocol.

9. The ODS phase-out strategy proposed by the Government is based on the following policy framework:

- (a) Implementation of an import quota system, starting in 2005. An Approval Permit system to control the import of ODS through permit holders only will be introduced;
- (b) Ban on installation of ODS-based industrial refrigeration equipment, starting in 2005, and compulsory dismantling of CFC-based industrial refrigeration equipment by the end of 2007;
- (c) Ban on import or export of any CFC-based MAC and CFC-based equipment, starting in 2005, and ban on import or export of CFC-based compressors, starting in 2007; and
- (d) Compulsory training and certification of refrigeration service technicians by the end of 2005.

#### Sub-projects in the RMP

10. The RMP project, as submitted, consists of the following sub-projects:

- (a) Training of trainers in good refrigeration practices (US \$62,000): to train 15 refrigeration technicians and engineers as trainers, who will train the country's service technicians, primarily in good practices, the use of non-ODS refrigerants, recovery and recycling operations and MAC retrofits;
- (b) Training for enforcement officials (US \$40,000): to train 40 customs officers to ensure proper enforcement of the import/export regulations, the ban on import of ODS-based equipment, and economic incentives/disincentives. This training programme will be implemented after regulatory instruments are implemented;
- (c) Technical assistance for the refrigeration servicing and MAC sub-sectors (US \$434,430): to provide equipment to ensure correct servicing of refrigeration equipment including recovery and recycling of CFC-12, to establish a retrofit incentive programme addressing the MAC sub-sector, and to train refrigeration service technicians on the correct retrofitting of MAC systems and the use of recovery and recycling machines; and
- (d) Monitoring activities (US \$23,500): to monitor the activities proposed in the RMP project.

11. The Brunei Darussalam RMP project was submitted with an official letter from the Government of Brunei Darussalam stating the Government's commitment to achieve, without further requests for funding, 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 RECOMMENDATION

### COMMENTS

12. The Secretariat notes that the 2003 CFC consumption in Brunei Darussalam (40.1 ODP tonnes) was 38.1 ODP tonnes below Brunei Darussalam's CFC baseline consumption (e.g., 78.2 ODP tonnes). The Secretariat also notes that the project proposal has been submitted in accordance with the provisos of Decision 31/48 and subsequent decisions taken by the Executive Committee regarding RMP proposals.

#### Ratification of the Amendments to the Montreal Protocol

13. According to the latest status of ratification of the Montreal Protocol issued by the Ozone Secretariat (as of 23 August 2004), Brunei Darussalam has not ratified any of the amendments to the Protocol.

14. The Executive Committee has taken two decisions on funding projects for Article 5 countries that have not yet ratified the London Amendment to the Montreal Protocol. Through its Decision 29/21, the Executive Committee decided to approve funding for the projects and activities submitted by countries which had not ratified the London Amendment, on the understanding that a letter would be sent to those countries urging them to take the necessary action to ratify the London Amendment as rapidly as possible; and through its Decision 40/35, the Committee decided to require from Parties an official commitment in writing to ratify the London Amendment to the Montreal Protocol before funding could be approved for their projects.

15. In this regard, the Secretariat sent, on 30 August 2004, an official letter to the Government of Brunei Darussalam requesting an update on the status of ratification of the London and subsequent Amendments to the Montreal Protocol by Brunei Darussalam.

16. On 5 October 2005, the Secretariat received a letter from the Director of the Department of Environment, Parks and Recreation of the Ministry of Development of Brunei Darussalam indicating that the Government "intends to ratify the London Amendment to the Montreal Protocol. Pursuant to this, we are currently in the process of preparing a permit system to control imports and exports of ODS which will facilitate control measures on consumption for three new substances, namely other halogenated CFCs (Annex B, Group I substances), carbon tetrachloride (Annex B, Group II) and methyl chloroform or 1,1,1-trichloroethane (Annex B, Group III)". Subsequently, UNEP advised the Secretariat that it believed that ratification of the London Amendment would be done in the first half of 2005.

#### Issues related to CFC consumption

17. The Secretariat discussed with UNDP and UNEP issues related to the calculation of the level of CFC consumption in Brunei Darussalam, including the number of CFC-based MAC systems still in operation, the average amount of refrigerant used for servicing MAC units and whether CFC-12 is being used for servicing non-CFC based MAC systems.

18. In this regard, UNDP and UNEP informed the Secretariat that, of the 212,000 vehicles registered at the Land Transport Department, over 110,000 are estimated to have a functional CFC-based MAC unit.

19. The Secretariat was also informed that it could be assumed that in Brunei Darussalam, there will be a certain number of technicians servicing HFC-134a MAC units with CFC-12. However, owing to the fact that labour charges for such servicing are relatively high in the country, it is doubtful that this is general practice.

#### Policy-related issues

20. The Secretariat sought an explanation on the status of development of ODS regulations in Brunei Darussalam, in particular, a licensing system for ODS imports and the quota system. The Secretariat drew the agency's attention to relevant decisions by the Executive Committee, through which the recovery and recycling component as well as the end-users retrofit incentive programme of the RMP could not commence until legislation controlling CFC imports was in place and measures had been taken to ensure that the local market prices of CFCs and non-ODS refrigerants were similar.

21. During a mission to Brunei Darussalam in March 2004, UNDP's representative was informed that the legislation was in its final stages and should be passed during 2004. Subsequently, the Government of Brunei Darussalam advised UNEP that the legislation will be in place in 2004. The actual implementation of the MAC recovery/recycling and retrofit incentive programmes would not be due to commence until the beginning of 2005. By that time, registered refrigerant importers would have been notified of import quotas.

#### Issues related to the activities proposed in the RMP

22. The Secretariat discussed with UNEP and UNDP issues related to the activities proposed in the RMP project. Specifically, discussion took place on the need for two training programmes proposed, one under UNEP's implementation to provide good servicing practices to the country's service technicians (US \$62,000), and another included in the technical assistance programme for the MAC sector under UNDP's implementation (US \$71,000); the sustainability of the proposed retrofit of 10,000 CFC-MAC units retrofitted to HFC-134a refrigerant taking into consideration the high price differential between refrigerants; and the estimated lifetime of the CFC-based MAC units, taking into account the climatic conditions in the country. All of these issues were addressed and further documented by UNDP and UNEP. The level of funding was also adjusted (the revised cost of the project is consistent with Decision 31/48).

23. The Secretariat proposed that UNDP should have flexibility in using the resources available under the recovery and recycling and end-users incentive programmes 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. Subsequently, UNDP and UNEP agreed to adopt this approach, and revised the sub-projects of the RMP as follows:

- (a) Training of trainers in good refrigeration practices (US \$50,000);
- (b) Training for enforcement officials (US \$34,000);
- (c) Technical assistance for the refrigeration servicing and MAC sub-sectors (US \$390,000); and
- (d) Monitoring activities (US \$22,000).

## RECOMMENDATION

24. The Secretariat recommends blanket approval of the project, with associated support costs at the funding level shown in the table below, on the understanding that:

- (a) The Government of Brunei Darussalam would have flexibility in using the resources available under technical assistance for the refrigeration servicing and MAC sub-sectors to address specific needs that might arise during project implementation;
- (b) To the extent possible, technical assistance for the refrigeration sector sub-project would be implemented in stages so that resources could be diverted to other activities, such as additional training or procurement of service tools, if the proposed results are not achieved. This should not commence until the legislation controlling CFC imports was in place and measures have been taken to ensure that the local market prices of CFCs and non-ODS refrigerants are at least similar; and
- (c) UNDP and UNEP would provide appropriate monitoring throughout project implementation.

	<b>Project Title</b>	<b>Project Funding (US\$)</b>	<b>Support Cost (US\$)</b>	<b>Implementing Agency</b>
(a)	Implementation of the refrigerant management plan: technical assistance for the refrigeration service and MAC sectors	390,000	29,250	UNDP
(b)	Implementation of the refrigerant management plan: monitoring of the activities included in the RMP	22,000	2,860	UNEP
(c)	Implementation of the refrigerant management plan: customs training	34,000	4,420	UNEP
(d)	Implementation of the refrigerant management plan: training of trainers in good refrigerant management practices and national technicians training	50,000	6,500	UNEP

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