MULTILATERAL FUND UNDER THE MONTREAL PROTOCOL

MEMORANDUM AND RECOMMENDATION

OF THE DIRECTOR

EAST ASIA AND PACIFIC COUNTRY DEPARTMENT III

OF THE

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

TO THE

REGIONAL VICE PRESIDENT

ON A

PROPOSED OZONE PROJECTS TRUST FUND GRANT

IN THE AMOUNT EQUIVALENT TO US$17.0 MILLION

TO

THE REPUBLIC OF INDONESIA

FOR A

MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES PHASE OUT PROJECT

OCTOBER 21, 1994

Environment Unit
Country Department III
East Asia and Pacific Region

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization.
CURRENCY EQUIVALENTS
(As of February, 1994)

Currency Unit = Rupiah (Rp)
US$1.00 = Rp 2105
Rp 1 million = US$475

FISCAL YEAR
April 1 - March 31

WEIGHTS AND MEASURES

1 meter (m) = 3.28 feet
1 kilometer (km) = 0.62 miles
1 hectare (ha) = 10,000 square meters = 15 mu
1 kilogram (kg) = 2.204 pounds
1 metric ton (MT) = 2,204.6 pounds

ABBREVIATIONS AND ACRONYMS

BI Bank Indonesia
EIA Environmental Impact Assessment
GOI Government of Indonesia
ICB International Competitive Bidding
MP Montreal Protocol on Substances that Deplete the Ozone Layer
MPEC Executive Committee of the Multilateral Fund for Implementation of the Montreal Protocol
MPF Multilateral Fund for Implementation of the Montreal Protocol
MOF Ministry of Finance
MT Metric Tons
ODS Ozone Depleting Substances
OTF Ozone Projects Trust Fund
PPA Project Preparation Advance
SME State Ministry of Environment
TA Technical Assistance
UNDP United Nations Development Programme
UNEP United Nations Environment Programme
UNIDO United Nations Industrial Development Organization
REPUBLIC OF INDONESIA

MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES PHASE OUT INVESTMENT PROJECT

Project and Grant Summary

Recipient

Republic of Indonesia

Project Description

This project would assist Indonesia to achieve its 1997 ODS phase out target by: (i) establishing an efficient mechanism for selecting and implementing MP projects through local institutions; and (ii) financing the incremental costs of conversion to non-ODS technology for a group of priority, cost effective subprojects to reduce ODS consumption in the country.

Executing Agency

State Ministry of Environment (SME) with assistance from Bank UPPINDO

Beneficiaries

Local Enterprises which are phasing out ODS; SME and Bank UPPINDO as executing agencies

Amount

US$17.00 million

Terms

Grant

Financing Plan

Component

US$ million

Financing Requirements:

Subprojects 22.42
Project Preparation Advance 0.25
Technical assistance 0.10
Financial agent fee 0.51
Total 23.28

Financed by:

Ozone Projects Trust Fund (OTF) 17.00
OTF Project Preparation Advance 0.25
Total OTF 17.25
Enterprise funds 6.03
Total 23.28

Economic Rate of Return

N/A

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization.
MEMORANDUM AND RECOMMENDATION OF THE DIRECTOR
OF COUNTRY DEPARTMENT III
TO THE REGIONAL VICE PRESIDENT
EAST ASIA AND PACIFIC REGION

1. I submit for your approval the following memorandum and recommendation on a proposed Ozone Projects Trust Fund Grant to the Republic of Indonesia (the Recipient) for US$17.0 million, to help finance a project to meet Indonesia’s plans for phasing out its consumption of ozone depleting substances (ODS). The total grant funding for the project is US$17.25 million, including US$0.25 million for the ODS Project Preparation Advance (OTF 05-21929).

Background

2. Indonesia ratified the Montreal Protocol on Substances that Deplete the Ozone Layer (MP) in June 1992 and the government is committed to phasing out consumption of ozone depleting substances (ODS) by 1997, well ahead of the 2010 MP deadline for developing countries. With total ODS consumption below 0.3 kg per capita, the country is eligible for funds from the Ozone Projects Trust Fund (OTF) which the Bank administers and which is instituted by funds provided by the Multilateral Fund for Implementation of the MP (MPF) to cover the incremental costs of ODS phase out activities. To minimize economic disruption that could result from constrained supplies of ODS and overall phase out costs, Indonesia has decided to accelerate phaseout activities and aims for complete phaseout by 1997. Conservation measures and substitute technologies are commercially available for most major ODS uses in Indonesia. To meet its aggressive phase out schedule, Indonesia will require technical assistance to develop a phaseout strategy and to strengthen the institutions that will implement an action plan, as well as financial assistance to acquire and adopt substitute technologies. The Bank is working with the Government of Indonesia (GOI) to develop a series of projects to utilize MPF resources to realize the goals of the GOI’s ODS phase out program. This proposed project would be the first such operation.

3. The government is committed to developing and implementing a cost effective ODS phase out program and has established a National Committee for Protection of the Ozone Layer and ODS Phase Out chaired by the State Ministry of Environment (SME) which is advised by a Technical Team with participants from BAPFENAS, the Departments of Trade, Industry, Foreign Affairs and Agriculture, BAPEDAL (the Environmental Impact Management Agency) and the Indonesia Chamber of Commerce. In addition, SME has set up an Ozone Layer Protection Unit which acts as Secretariat to the Technical Team and oversees day to day activities of implementing Indonesia’s ODS phase out program. During preparation of the government’s Country Program for the Phase Out of ODS Under the MP (ODS CP), which includes Indonesia’s policy, strategy, costs and action plan to eliminate ODS consumption (provided technical and financial assistance are forthcoming), the Technical Team established five sector groups to formulate sector specific phase out strategies and action plans for refrigeration and air-conditioning, foams, aerosols, solvents and fire protection (halons).

4. In 1992, Indonesia consumed about 7,800 metric tons (MT) of ODS, all imported, primarily in refrigeration and air-conditioning (32% weighted for ozone depletion potential-ODP), aerosols (30% ODP), foams (16% ODP), fire protection - halons (15% ODP), and solvents (7% ODP). Except for the aerosol sector, for which growth in ODS consumption is frozen as a result of a Ministry of Health Decree to ban ODS use in production of cosmetic aerosols, consumption of ODS is increasing at about 12% per annum on average.
5. Indonesia’s ODS Country Program (CP), which describes the GOI’s plan to eliminate ODS consumption by 1997, was endorsed by the Minister for Environment in February 1994 and was approved by the Executive Committee of the MPF (MPEC) during its March 1994 meeting. The ODS CP was prepared with UNDP support using MPEC-approved funds and Bank assistance. The ODS CP outlines a phase out strategy which will rely on voluntary actions by industry in response to both government promotion of the 1997 phase out target as well as constrained supplies of ODS which are occurring as a result of international MP controls on ODS production. The five sector groups established by the Technical Team, which include government, industry and trade association participants, will continue to liaise between industry and the Technical Team to help promote the GOI’s 1997 phase out target and assist in identification of appropriate phase out technologies and specific phase out investment operations. In addition, the GOI is studying provisions to adjust import duties on ODS and non-ODS chemicals and equipment to further induce adoption of ODS substitutes. Should these measures fail to achieve phase out targets established in the CP, the GOI will consider limiting ODS imports through a quota system. SME will work with the Customs department to closely monitor ODS imports and consumption.

6. The Bank, through an Ozone Projects Trust Fund (OTF) Project Preparation Advance (PPA) and direct support, is helping the GOI prepare investment subprojects to execute the ODS CP sector action plans for household refrigeration, foams, fire protection and solvents. The Bank is also working with the government to prepare projects for eliminating ODS consumption in the aerosol sector. UNDP is providing institutional strengthening support to SME’s Ozone Unit and is working with the Technical Team to develop halon banking and recycling projects as well as projects to phase out ODS in the commercial refrigeration and air-conditioning sector. In addition, SME is coordinating ODS phase out technical assistance from UNEP for refrigeration and air-conditioning servicing, and from the Australian and Japanese governments with which it is jointly hosting workshops on technical alternatives to ODS.

**Project Objectives and Approach**

7. The objective of the project is to support the GOI’s proposed program to phase out ODS by 1997. The project strategy is to provide funding from OTF through SME, who will be assisted by a local bank, Bank UPPINDO, in the administration of subgrants to ODS users. These grants will cover the incremental costs to firms of introducing ozone protecting technologies as an incentive for early adoption.

8. The proposed approach is to: (i) establish an efficient mechanism for selecting and implementing MP projects through local institutions; (ii) assist SME to oversee the preparation of subproject proposals through direct Bank support and an OTF-PPA; and (iii) finance the incremental costs of conversion to non-ODS technologies for a group of priority, cost effective subprojects to reduce ODS consumption in the country. The investment project would be organized as an umbrella financial agreement executed by SME with assistance from Bank UPPINDO, the selected local financial agent, in administration of subgrants to project beneficiaries. The Technical Team, with guidance from the five sector groups, is overseeing the selection and preparation of subprojects in about three tranches including execution of the US$250,000 OTF Project Preparation Advance. Funding approval for an initial group of six subprojects — prepared with direct Bank support — was given by the MPF Executive Committee (MPEC) at its November, 1993 meeting. As subsequent subproject proposals are completed and endorsed by GOI and the Bank, they will be submitted to the MPEC for approval. The OTF-PPA funded "Feasibility for Use of Non-ODS Technology in Indonesia" will result in about 12 more subproject proposals. Additional project preparation resources will be requested from MPEC as required to support preparation of additional proposals for
subprojects under this project. Proposals approved by the Technical Team will be pre-appraised by Bank UPPINDO and submitted to the Bank for MPEC approval. Eligibility criteria for approval of proposals by the Technical Team and MPEC will be those specified for subprojects in Annex 2.

**Project Description, Costs and Financing**

9. The project comprises subproject preparation, subproject investments and technical assistance. Under an OTF-PPA, SUCOFINDO has been selected to prepare 20 subproject concepts, and to finalize 12 for preappraisal. Additional PPA will be requested from MPEC as required. The project will support 25-30 subprojects in several tranches and will cover all major ODS use sectors in Indonesia including refrigeration and air-conditioning, foams, fire protection (halons), aerosols and solvents. Subprojects will assist beneficiaries with technology transfer, design, safety, training, and implementation. The first group of six subprojects, covering foams and aerosols where unit abatement costs for ODS are relatively low, and for which MPEC approved US$4.56 million in grant funds to cover incremental costs, represents about 25% of the total project. A list of proposed subprojects, including detailed summaries of the first group of six subprojects, is attached in Annex 1. The project also includes US$50,000 of technical assistance (TA) already approved by MPEC for the strengthening of Bank UPPINDO's technical capabilities in project review and supervision. The TA work program will include hiring international or local consultants to transfer knowledge about non-ODS technologies while assisting in subproject appraisal and supervision, and will also cover participation in local, regional or international conferences on ODS phaseout technologies. SME, which will coordinate implementation of the proposed project, has established an "Ozone Unit" to guide and monitor the country's overall ODS phase out program and act as coordinator for related investment operations, using US$315,000 in institutional strengthening funds from the MPF through UNDP. Subject to MPEC approval, the Bank would provide about US$50,000 as additional, TA to SME to cover travel and other direct expenses related to selection and monitoring of subprojects, as well as for workshops to promote non-ODS technologies and successes of ODS phase out activities.

10. Estimated total project costs are US$23.28 million, including US$0.51 million financial agency fee. Of this amount, about US$17.25 million, including the US$250,000 PPA, is expected to be eligible as incremental costs for MPF grant funding through the OTF. The balance will be financed from commercial sources or from the beneficiaries own funds. Project costs and the financing plan are shown in Schedule A. During negotiations, assurances were obtained from the Recipient that funds for incremental costs will be channeled to project beneficiaries as grants through SME.

11. Incremental costs for this project are defined by Bank and MPEC guidelines as the net present value of incremental economic project costs (investment plus operating costs net of operating benefits) discounted at 10% in real terms. This amount is then adjusted to reflect the local share of ownership (see Annex 2). Following current MPF practice, reimbursement for incremental operating costs for subprojects is limited to four years. In cases where an enterprise is eligible for less than 100% grant financing of the investment, and the enterprise requires an incentive for early adoption of ODS phaseout technology, it may, at the discretion of MPEC, be eligible for an additional amount so as to enable it to realize an acceptable rate of return compared to the risk of the project. An overall contingency allowance of 15% and a financial agent fee of 3% have been included in the grant amount. The contingency will be allocated, as needed, by the Bank, to cover any justified subproject cost increases. If any one subproject shows a cost increase in excess of MPF guidelines (i.e., US$500,000 increase), the subproject would be resubmitted to MPEC for re-approval.
12. The State Ministry of Environment (SME) in its role as chairman of the inter-agency National Committee on Ozone Protection and ODS Phaseout will act on behalf of GOI as executing agency for the Montreal Protocol ODS Phase Out Investment Project (ODS Project) and will ensure that subprojects are consistent with the ODS Country Program and meet eligibility criteria for projects financed by the MP Fund. The National Committee Technical Team, with assistance from the five sector groups it established, will oversee and promote subproject identification and preparation. Daily operations of the Technical Team will be handled by the Ozone Unit located at SME. To manage the ODS phase out projects and Indonesia’s overall ODS phase out program efficiently, assurances were obtained from the Recipient that SME will maintain the Ozone Unit, with adequate staffing and funds, and with functions and responsibilities satisfactory to the Bank, and that SME will ensure that subprojects are consistent with the country’s ODS Country Program.

13. SME has, with Bank concurrence, selected Bank UPPINDO to assist in financial administration of grants to project beneficiaries including appraisal of subproject proposals, overseeing disbursement and procurement, and the supervision of subproject implementation. To ensure prompt funds transfer, it was agreed that Bank UPPINDO would facilitate the disbursement process by tracking disbursement requests and ensuring consistency of the requests with subproject agreements, but that grant funds will actually be disbursed through SME by the Ministry of Finance (MOF) or through Bank Indonesia (BI), as appropriate, directly to subproject beneficiaries. Bank UPPINDO will receive a fee equivalent to 3% of grants for its services, of which it will receive one third (=1%) following approval of subproject appraisal reports by SME and the Bank, and two-thirds (=2%) upon disbursement of the grants to the subprojects. Bank UPPINDO would be guided by subproject eligibility, appraisal and financing criteria for Montreal Protocol projects (summarized in Annex 2) and would operate under terms and conditions defined in Annex 3. Assurances were obtained from the Recipient that it will engage Bank UPPINDO as financial agent for the project under terms and conditions satisfactory to the Bank.

14. The Grant Agreement between the Government and the Bank, the Project Implementation Agreement between the SME and Bank UPPINDO, including Operating Procedures and Guidelines acceptable to the Bank, and the subgrant agreements between SME and the participating enterprises will describe the responsibilities of each party. The subgrant agreement for each subproject will, inter alia, require each participating enterprise to complete the subproject satisfactorily and to maintain satisfactory financial viability using indicators as agreed with the Bank. Signing of the Project Implementation Agreement between the SME and Bank UPPINDO, satisfactory to the Bank, is a condition of grant effectiveness. During negotiations, assurances were obtained from the Recipient that subgrant agreements with each participating enterprise will include terms and conditions acceptable to the Bank, including those described in paragraph III (5) of Annex 3.

15. SME will be responsible for monitoring the overall project and attaining the ODS phase out commitments. The Bank will supervise the project, including approval of each subproject and monitoring SME, the Ozone Unit and Bank UPPINDO’s activities. SME and Bank UPPINDO will prepare semi-annual reports for submission to the Bank. Subproject completion reports, approved by SME, will be furnished to the Bank promptly upon completion of subprojects. Final operation reports, also approved by SME, will be furnished to the Bank two years after subproject completions for those subprojects with incremental operating costs. Financial audit reports of the Grant will be prepared according to standard OTF requirements. In addition, technical audit reports of subproject implementation will be prepared by independent consultants and submitted.
simultaneously to SME and the Bank at six month intervals, contingent upon the approval of funds for this purpose by the MPEC.

16. Procurement of goods and services will be in accordance with Bank Procurement Guidelines. Bank UPPINDO will satisfy itself that the goods and services to be purchased are for the investment subprojects and are reasonably priced, by ensuring that the grant recipient has canvassed the main sources of supply and purchased from the most advantageous source. Consultants will be selected in accordance with the Guidelines for the Use of Consultants. A Special Account, with an initial deposit of up to US$1.5 million, would be established at BI to facilitate disbursement of OTF grants as outlined in Annex 3. MOF would submit requests for replenishment of the Special Account based on a Statement of Expenditures for contracts with a value of up to US$200,000. Project funds are expected to be fully committed by January 1995 and are expected to be fully disbursed by June 30, 1998. Procurement procedures, ceilings for prior review, and the disbursement schedule are given in Schedule B. The timetable for processing the project is given in Schedule C and a detailed project schedule is provided in Annex 4.

**Project Sustainability**

17. The proposed ODS Phase Out project will be implemented within the institutional and policy framework described in Indonesia's ODS Country Program, which was approved by MPEC at its March 1994 meeting, and is considered sustainable. Indonesia is committed to the phase out of ODS as required in its obligations under the MP. Moreover, the project will assist the Government in establishing an efficient mechanism for developing and funding subprojects to initiate and sustain its ODS phase out action plans. During negotiations, assurances were obtained from the Recipient that SME will inform the Bank from time to time about implementation of the ODS Country Program. Limited availability of ODS and ODS dependent components will work to ensure sustained future use of ODS recycling equipment and non-ODS technology.

**Environmental Aspects**

18. The overall project objective is protection of the environment by reducing emissions of ODS. However, the change to non-ODS technologies or substitution of ODS with other chemicals may involve other environmental risks. Subprojects may employ flammable substitutes or, in the case of solvent subprojects, increase waste water. In accordance with the Bank's guidelines, satisfactory safety and environmental precautions are being incorporated into subproject design. Participating enterprises will be responsible for providing environmental impact assessments (EIAs) as required by Indonesian law. SME will work with BAPEDAL to ensure that EIAs are prepared for those subprojects which require them. EIAs will be submitted with subproject appraisal reports to the Bank for approval. The project is classified as a Category B in accordance with OD 4.01.

**Project Benefits**

19. The project will help the Government implement an accelerated ODS phase out program by providing financing for priority subprojects which will result in the phase out of approximately 3,000 MT of ODS annually (3,200 ODP-weighted MT or about 50% of Indonesia's total ODP-weighted consumption of ODS). The project will enable export-oriented firms to maintain their export markets by adjusting in a timely manner to non-ODS products as requested by importers from industrialized countries. In addition, the project will help domestic firms minimize the potential economic disruptions of constrained ODS supplies.
Project Risks

20. Private firms' lack of interest in ODS phase out investments because of low financial benefits could become a risk. The project will address this risk by providing grant funding which will compensate for financial, market, and technical risks of proposed investments and will provide acceptable returns on investments of participating enterprises. Financial incentives will be complemented by regulations and non-financial incentives to be determined by the National Committee. SME has limited experience in implementing investment subprojects, which could delay processing of subproject proposals and disbursement requests. To minimize this risk, SME will contract a financial agent familiar with World Bank operation procedures to assist in financial administration of subprojects. This project will provide technical training to the financial agent, Bank UPPINDO, to familiarize project staff with ODS industries and non-ODS phase out options. In addition, UNDP is providing institutional strengthening to SME to coordinate implementation of the ODS CP, including investment operations under this project. This project will supplement UNDP's support by providing funds to strengthen SME's capability to identify and monitor subprojects.

Lessons from Previous Bank Experience

21. Projects utilizing OTF resources are being developed concurrently in Mexico, Brazil, Philippines, Thailand, China, Malaysia, Turkey, and other countries. Several country studies have been completed which identify ODS consumption patterns and phaseout strategies. In addition, implementation arrangements based on environment ministry implementation with local financial agent assistance in fund administration have been established for most ODS phase out operations. The findings of the country studies and experience in setting up implementation arrangements were considered in the design of the proposed project. In particular, to minimize delays in disbursement of approved MP funds, this project adopted the recently developed "umbrella" structure which establishes a framework for processing a large number of small sub-components under one project. In addition, the project team was pro-active in initiating subproject preparation, making use of experts in the dynamic ODS substitute fields to help SME identify sectors for which cost effective phase out options are available and to provide information about those options to ODS consuming enterprises.

Rationale for Funding from the Montreal Protocol Interim Multilateral Fund

22. As noted above, GOI has ratified the MP and is committed to a successful phase out program in advance of MP requirements for developing countries. The project is consistent with the Implementation Guidelines and Criteria for OTF funding established by the MPEC.

Agreed Actions

23. Prior to negotiations, the Recipient furnished to the Bank for concurrence:

(a) draft Operating Procedures and Guidelines for Bank UPPINDO; and

(b) draft Work Program for the First Year of the Ozone Unit Operation.

24. During negotiations, the Bank obtained assurances from the Recipient that:

(a) funds for incremental costs will be channeled to project beneficiaries as grants through SME (para. 10);
(b) SME will maintain the Ozone Unit, with adequate staffing and funds, and with functions and responsibilities satisfactory to the Bank (para. 12);

(c) SME will ensure that subprojects are consistent with the country’s ODS Country Program (para. 12);

(d) SME will engage Bank UPPINDO as financial agent for the project under terms and conditions satisfactory to the Bank (para. 13);

(e) SME will enter into a subgrant agreement with each project beneficiary under terms and conditions acceptable to the Bank, including those described in paragraph III (5) of Annex 3 (para. 14);

(f) SME will inform the Bank from time to time about implementation of the ODS Country Program (para. 17); and

25. The following will be a condition of effectiveness of the Grant:

signing of a Project Implementation Agreement satisfactory to the Bank between the SME and Bank UPPINDO that describes the responsibilities of Bank UPPINDO under the Grant Agreement (para. 14).

Recommendation

26. I am satisfied that the proposed Grant would comply with the relevant provisions of the Ozone Projects Trust Fund in Resolution 91-5 of the Executive Directors, and I recommend that the Regional Vice President approve it.

Marianne Haug
Director
Country Department III
East Asia and Pacific Region

Attachments

Washington, D. C.
October 21, 1994
### Project Costs

<table>
<thead>
<tr>
<th>Project Costs</th>
<th>Total Project Costsa</th>
<th>Investment Costs</th>
<th>Net Recurring Costs (4 Yrs)b</th>
<th>Proposed OTF Grantc</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPA</td>
<td>0.25</td>
<td>0.00</td>
<td>0.00</td>
<td>0.25</td>
</tr>
<tr>
<td>TA-Bank UPPINDO &amp; SME</td>
<td>0.10</td>
<td>0.00</td>
<td>0.00</td>
<td>0.10</td>
</tr>
<tr>
<td>Approved Subprojects</td>
<td>4.87</td>
<td>3.85</td>
<td>0.46</td>
<td>4.42</td>
</tr>
<tr>
<td>Future Subprojects</td>
<td>17.55</td>
<td>15.13</td>
<td>0.10</td>
<td>11.97</td>
</tr>
<tr>
<td>Financial Agent Fee</td>
<td>0.51</td>
<td>0.00</td>
<td>0.00</td>
<td>0.51</td>
</tr>
<tr>
<td><strong>TOTAL Project</strong></td>
<td><strong>23.28</strong></td>
<td><strong>18.98</strong></td>
<td><strong>0.56</strong></td>
<td><strong>17.25</strong></td>
</tr>
</tbody>
</table>

a/ Including 15% contingency.  
b/ Discounted at 10%.  
c/ Eligible incremental cost = incremental cost multiplied by the share of local ownership, including 15% contingency.

### Financing Plan

<table>
<thead>
<tr>
<th>Source</th>
<th>US$ million equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTF Grant</td>
<td>17.25</td>
</tr>
<tr>
<td>of which PPA</td>
<td>0.25</td>
</tr>
<tr>
<td>Commercial loans or enterprise funds</td>
<td>6.03</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>23.28</strong></td>
</tr>
</tbody>
</table>
Summary of Proposed Procurement Arrangements

Bank UPPINDO will be responsible for ensuring that participating enterprises follow the agreed procurement guidelines. Total procurement will amount to US$17.0 million for about 25-30 subprojects whose procurement will be administered following international competitive bidding (ICB) using Bank Standard Documents, or the procurement practices of private industry in Indonesia which the Bank has examined and found acceptable, consisting at a minimum of the following:

Goods

(i) contracts over US$2 million equivalent (excluding proprietary packages) would be procured under ICB procedures, under which preference for eligible domestic bidders should be allowed in the evaluation of goods (15%);

(ii) contracts between US$200,000 and US$2 million equivalent would be procured on the basis of comparison of price quotations solicited from at least three qualified suppliers from at least two countries;

(iii) contracts below US$200,000 equivalent would be procured on the basis of comparison of price quotations solicited from at least three qualified suppliers; and

(iv) direct contracting will be used for proprietary packages.

Consultants

(i) Consultants shall be engaged on the basis of the "Guidelines for the Use of Consultants by World Bank Borrowers and the World Bank as Executing Agency" dated August 1981.

Prior Review

Prior review is required on the following contracts and bid packages:

(i) over US$250,000 equivalent for goods;

(ii) for consultants’ contracts, over US$100,000 equivalent for firms and US$50,000 for individuals; and

(iii) for proprietary technology and equipment.
Disbursement Table

Withdrawal of the Proceeds of the OTF Grant

1. The table below sets forth the Categories of items to be financed out of the proceeds of the OTF Grant, the allocation of the amounts of the OTF Grant to each Category and the percentage of expenditures for items to be financed in each Category:

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount of the OTF Grant Allocated (Expressed in Dollar Equivalent)</th>
<th>% of Expenditures to be Financed</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Goods, consultants’ services and training for Subprojects</td>
<td>16,390,000</td>
<td>100%¹</td>
</tr>
<tr>
<td>(2) Goods, consultants’ services and training for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Technical Assistance to SME</td>
<td>50,000</td>
<td>100%</td>
</tr>
<tr>
<td>(b) Technical Assistance to Bank UPPINDO</td>
<td>50,000</td>
<td></td>
</tr>
<tr>
<td>(2) Bank UPPINDO fee</td>
<td>510,000</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>17,000,000</td>
<td></td>
</tr>
</tbody>
</table>

¹. In accordance with the Bank’s Operational Policy OP 10.21, paragraph 4, dated November 1993, the proceeds of the grant may be used to pay for taxes on locally supplied goods that can be obtained off the shelf.

Disbursement Schedule

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual</td>
<td>1.88</td>
<td>8.08</td>
<td>3.54</td>
<td>2.25</td>
<td>1.25</td>
</tr>
<tr>
<td>Cumulative</td>
<td>1.88</td>
<td>9.96</td>
<td>13.50</td>
<td>15.75</td>
<td>17.00</td>
</tr>
<tr>
<td>Cumulative</td>
<td>11</td>
<td>59</td>
<td>79</td>
<td>93</td>
<td>100</td>
</tr>
</tbody>
</table>
**Timetable of Key Project Processing Events**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date/Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation (time taken)</td>
<td>25 months</td>
</tr>
<tr>
<td>Prepared by</td>
<td>SME and the Bank</td>
</tr>
<tr>
<td>First Presentation to the Bank</td>
<td>October 1992</td>
</tr>
<tr>
<td>Departure of Bank Appraisal Mission</td>
<td>January, 1994</td>
</tr>
<tr>
<td>Date of Negotiations</td>
<td>June 6, 1994</td>
</tr>
<tr>
<td>Planned Date for Effectiveness</td>
<td>December 31, 1994</td>
</tr>
<tr>
<td>Planned Completion Date</td>
<td>June 30, 1998</td>
</tr>
</tbody>
</table>

This report is based on the findings of an appraisal mission, which visited Indonesia in February 1994, comprising Jessica Poppele (Ozone Operations Coordinator, Asia Region and Task Manager), Abyd Karmali (Engineer, Consultant), Bala Nathan (Aerosol Specialist, Consultant), Paul Martin (Economist, Consultant) and Kunrat Wirasubrata (Operations Officer, Indonesia Resident Mission). Peer reviewers were Donald Brown (Industrial Specialist), Bilal Rahill (Environmental Specialist), Laura Tlaiye (Environmental Specialist) and Charles Di Leva (Lawyer). In addition, Maritta Koch-Weser (Division Chief, Environment and Natural Resource Division), and Ken Newcombe (Chief, Global Environment Coordination Division) reviewed the technical content of the project. Marianne Haug (Director, EA3) and Richard A. Calkins (Chief, EA3EN) have endorsed the project.
## Pre-Appraised and Anticipated Subprojects - Summary Table and Descriptions

<table>
<thead>
<tr>
<th>Company</th>
<th>End Use</th>
<th>Indonesian Ownership (%)</th>
<th>ODS Consumption in 1992 (MT ODS)</th>
<th>ODS Used (type)</th>
<th>ODS Reduction End of 1995 (MT ODS)</th>
<th>Investment Cost (US$ million)</th>
<th>Net Recurring Costs (4 years) (US$ million)</th>
<th>Proposed OTP Grant (US$ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Tranche</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tulus Bakti Sempurna</td>
<td>Non-Insul. Foam</td>
<td>100</td>
<td>100</td>
<td>CPC-12</td>
<td>95</td>
<td>0.075</td>
<td>0.276</td>
<td>0.420</td>
</tr>
<tr>
<td>Foamindo Industri</td>
<td>Non-Insul. Foam</td>
<td>51</td>
<td>80</td>
<td>CPC-11</td>
<td>80</td>
<td>0.307</td>
<td>(0.015)</td>
<td>0.176</td>
</tr>
<tr>
<td>Dasa Windu</td>
<td>Non-Insul. Foam</td>
<td>100</td>
<td>125</td>
<td>CPC-11</td>
<td>122</td>
<td>0.620</td>
<td>0.843</td>
<td>1.753</td>
</tr>
<tr>
<td>Istiri Multatama</td>
<td>Non-Insul. Foam</td>
<td>50</td>
<td>120</td>
<td>CPC-12</td>
<td>120</td>
<td>1.300</td>
<td>(0.647)</td>
<td>0.390</td>
</tr>
<tr>
<td>TA for Small Foam</td>
<td>Non-Insul. Foam</td>
<td>N/A</td>
<td>200</td>
<td>CPC-11</td>
<td>100</td>
<td>1.351</td>
<td>0</td>
<td>1.600</td>
</tr>
<tr>
<td>TA for Aerosol Fillers</td>
<td>Aerosols</td>
<td>N/A</td>
<td>1,000</td>
<td>CPC-12</td>
<td>1,000</td>
<td>0.201</td>
<td>0</td>
<td>0.258</td>
</tr>
<tr>
<td><strong>Subtotal First Tranche</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.854</td>
</tr>
<tr>
<td><strong>Second Tranche</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Provisional)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAPs Purification Facility</td>
<td>Aerosols</td>
<td>100</td>
<td>400</td>
<td>CPC-12</td>
<td>400</td>
<td>0.425</td>
<td>0</td>
<td>0.500</td>
</tr>
<tr>
<td>TA for Bank UPPINDO</td>
<td>All End Uses</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.050</td>
<td>0</td>
<td>0.050</td>
</tr>
<tr>
<td>TA for SME</td>
<td>All End Uses</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.050</td>
<td>0</td>
<td>0.050</td>
</tr>
<tr>
<td>Eriangga</td>
<td>Non-Insul. Foam</td>
<td>100</td>
<td>100</td>
<td>CPC-11</td>
<td>100</td>
<td>0.550</td>
<td>(0.250)</td>
<td>0.365</td>
</tr>
<tr>
<td>Royal Abadi</td>
<td>Non-Insul. Foam</td>
<td>100</td>
<td>120</td>
<td>CPC-11</td>
<td>120</td>
<td>0.350</td>
<td>(0.150)</td>
<td>0.235</td>
</tr>
<tr>
<td><strong>Subtotal Second Tranche</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.425</td>
</tr>
<tr>
<td><strong>Third Tranche</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Provisional)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MACs Recycling</td>
<td>Air Conditioning</td>
<td>100</td>
<td>1,536</td>
<td>CPC-12</td>
<td>350</td>
<td>0.500</td>
<td>0</td>
<td>0.600</td>
</tr>
<tr>
<td>8 Household Refrigerator Manufacturers (1st phase)</td>
<td>Refrigeration</td>
<td>N/A</td>
<td>290</td>
<td>CPC-12</td>
<td>CPC-11</td>
<td>9.000</td>
<td>0</td>
<td>6.250</td>
</tr>
<tr>
<td>2 Foam Manufacturers</td>
<td>Non-Insul. Foam</td>
<td>N/A</td>
<td>120</td>
<td>CPC-11</td>
<td>120</td>
<td>0.600</td>
<td>0.200</td>
<td>0.700</td>
</tr>
<tr>
<td>3 Electronics Companies/</td>
<td>Solvent Cleaning</td>
<td>N/A</td>
<td>N/A</td>
<td>CPC-113/</td>
<td>120</td>
<td>1.200</td>
<td>0</td>
<td>0.700</td>
</tr>
<tr>
<td>3 Fire Extinguisher Man.</td>
<td>Fire Protection</td>
<td>N/A</td>
<td>50</td>
<td>H-1211</td>
<td>50</td>
<td>0.600</td>
<td>0</td>
<td>0.500</td>
</tr>
<tr>
<td><strong>Subtotal Third Tranche</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11.900</td>
</tr>
<tr>
<td><strong>Fourth Tranche</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Provisional)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Foam Manufacturers</td>
<td>Non-Insul.</td>
<td>N/A</td>
<td>180</td>
<td>CPC-11</td>
<td>180</td>
<td>0.900</td>
<td>0.300</td>
<td>1.420</td>
</tr>
<tr>
<td>2 Fire Extinguisher Man.</td>
<td>Fire Protection</td>
<td>N/A</td>
<td>66</td>
<td>H-1211</td>
<td>66</td>
<td>0.900</td>
<td>0</td>
<td>1.070</td>
</tr>
<tr>
<td><strong>Subtotal Fourth Tranche</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.890</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18.979</td>
</tr>
</tbody>
</table>

1. Net present value (NPV) of first four years of operating costs/savings discounted at 10%. Negative numbers indicate operating savings.
2. Grant amount equals incremental costs multiplied by percent Indonesian ownership. Includes 15% contingency and 3% financial agent fee.
3. This reduction was achieved in 1992. This subproject will ensure its continuation by creating a safe environment for using hydrocarbon aerosol propellants.
Description of First Tranche Subprojects
(Pre-Appraised and MPEC approved)

Implementation of this group of sub-projects is expected to begin in December, 1994.

NON-INSULATING FOAMS

PT Tulus Bakti Sempurna

The approved total cost for this sub-project is US$420,000 in OTF grant financing to phase out 95 ODP-weighted MT in the production of extruded polystyrene (EPS) and polyethylene (EPE) foam sheet at PT Tulus Bakti Sempurna by converting its foam production line to HCFC-22. The enterprise will use an external process specialist to supervise and to assist the conversion and start-up to capitalize on existing accumulated experience in the use of HCFC-22 for the production of EPS/EPE. Tulus recognizes that HCFC-22 is a temporary solution and plans to eventually convert to HFC-134a with its own funds. The approved grant amount considers that Tulus is 100% Indonesia-owned.

PT Foamindo

The approved total cost for this sub-project is US$176,000 in OTF grant financing to phase out 80 ODP-weighted MT in the production of flexible polyurethane foam (slabstock and molded) by converting to methylene chloride (slabstock) and water-blown foam (molded). The enterprise will use support from a process specialist to convert foam formulations and to train personnel in the safe handling of methylene chloride and in the use of vacuum cooling equipment. The approved grant amount considers that Foamindo is 51% Indonesian-owned.

PT Dasa Windu

The approved total cost for this sub-project is US$1.733 million in OTF grant financing to phase out 122 ODP-weighted MT in the production of several polyurethane foams. The project will start with modification and replacement of its existing equipment where necessary to allow the introduction of new non-ODS technologies. The approved grant amount considers that Dasa Windu is 100% Indonesian-owned.

PT Intitri Muliatama

The approved total cost for this sub-project is US$390,000 to phase out 120 MT of CFC-12 in the production of EPS and EPE foam sheet at P.T. Intitri Muliatama, Jakarta Indonesia by converting to the maximum extent possible to carbon dioxide supplemented by HCFC-22. The enterprise will work under license from DOW Chemical for the carbon dioxide technology and use support from an international process specialist to implement the use of HCFC-22. The approved grant considers that the enterprise is 50% Indonesian-owned. This will be the first project in an Article 5 country that will use the new technology developed by DOW. The project will therefore serve as a demonstration model for future utilization of this technology in other projects under the Montreal Protocol Multilateral Fund.
Foams Technical Assistance Program for Small Users

The approved total cost for this sub-project is US$1.6 million to phase out about 100 ODP-weighted MT of CFC-11 at approximately 50 small companies in the non-insulating foam sector in Indonesia. These companies use CFCs as blowing agents to manufacture flexible polyurethane foam (slabstock) using batch processing. The sub-project will involve preparing a technical assistance video to help convey to participating enterprises the technical and policy aspects of the phaseout program. The program will be managed by the Association of Foam Indonesia (AFI) under the supervision of the Indonesian Technical Team headed by SME. Companies will convert their operations from CFC-11 to methylene chloride. Those enterprises manufacturing low density foams will also receive vacuum cooling equipment to ensure a successful conversion.

AEROSOLS

Aerosols Safety and Technical Assistance Program

The approved total cost for this sub-project is US$238,000 to ensure the safe and effective use of hydrocarbon aerosol propellants (HAPs) at eighteen large aerosol product manufacturing plants in Indonesia. These companies have already begun to shift from CFCs to HAPs and in 1992 reduced their consumption of CFCs by about 1,000 ODP MT. However, because high quality hydrocarbon aerosol propellants (HAPs) are not yet widely available in Indonesia, CFCs are still being used in some product applications. These enterprises are suffering from the poor quality of the available hydrocarbons and are losing market share to those that still use CFCs. A complementary project proposal is being prepared to ensure that aerosols companies have access to an adequate supply of high quality HAPs.

While the project will not directly phase out the use of CFCs at the larger companies, it will ensure that they use HAPs in a safe and effective manner. At present, plants that have converted to hydrocarbons have inadequate flammability safeguards in place to prevent a major accident involving HAPs. In the long-run, improvements in manufacturing safety is key to minimizing the possible dislocation to the Indonesian aerosol industry resulting from the potential impacts of a major accident involving HAPs. The proposal will set up a safety and technical assistance program that will include plant safety audits, a training program, investments in safety equipment, and information awareness directed at smaller companies and consumers of aerosols products.

FINANCIAL AGENT TECHNICAL ASSISTANCE

The approved total cost for this technical assistance project is US$50,000, which is designed to build up the FA’s technical expertise for the appraisal and supervision of ODS phaseout projects through training of the FA’s staff. The Financial Agent (FA) will be responsible for channeling funds from the World Bank administered Ozone Projects Trust Fund (OTF) to eligible subprojects. Three principal functions will be performed by the FA, including: (i) appraisal of subproject proposals; (ii) disbursement of OTF grants to subprojects; and (iii) supervision of subproject implementation. While the FA has substantial experience with the financial aspects and the general technical aspects of subprojects, it lacks technical capability in the specific field of ODS phase out projects to adequately appraise and supervise such projects. The TA will address this issue through on the job training by local and foreign consultants, and participation in seminars and workshops.
Description of Provisional Second Tranche Subprojects

Implementation of this group of sub-projects is expected to begin in January, 1995.

NON-INSULATING FOAMS

PT Royal Abadi Sejahtera

This sub-project will likely request US$237,000 in OTF grant financing to phase out 120 ODP-weighted MT in the production of flexible polyurethane foam (slabstock) at Royal Abadi by converting the foam blowing agent from CFC-11 to methylene chloride combined with increased water levels. To eliminate scorching during the production of low density foams, the additional process heat that is generated will be removed by a vacuum cooling system. The enterprise will use support from an international foam process specialist to convert the foam formulation and to train personnel in the safe handling of methylene chloride. The proposed grant amount considers that Royal Abadi is 100% Indonesia-owned.

PT Erlangga Trimunuggal Kusumah

This sub-project is still being finalized. It will likely request OTF grant financing of approximately US$350,000 to phase out 100 ODP-weighted MT in the production of flexible polyurethane foam (slabstock and molded) by converting to methylene chloride (slabstock) and water-blown foam (molded). The enterprise will use support from a process specialist to convert foam formulations and to train personnel in the safe handling of methylene chloride and in the use of vacuum cooling equipment. The proposed grant amount considers that Erlangga is 100% Indonesian-owned.

AEROSOLS

HAPs Purification Facility

This sub-project is still being finalized. The goal of the project is to ensure a supply of high quality hydrocarbons from Pertamina for aerosol fillers. It will likely request OTF grant financing of approximately US$500,000. Together with the safety and technical assistance program submitted for consideration of funding in the first group, this sub-project will be critical in ensuring the long-term conversion of aerosol fillers from CFCs to HAPs and further reduce CFC-12 consumption by about 1,500 ODP MT.

TECHNICAL ASSISTANCE FOR STATE MINISTRY OF ENVIRONMENT

The objective of the proposed US$50,000 technical assistance project is to assist SME in covering travel and other direct expenses related to selection and monitoring of subprojects as well as for workshops to promote non-ODS technologies and successes of ODS phase out activities.
Description of Provisional Third Tranche Subprojects

Implementation of this group of sub-projects is expected to begin in February, 1995.

The third group will likely include about 12 subprojects to eliminate about 750 ODP MT and will require US$8.71 million in OTF financing. These sub-projects will include mobile air conditioning recycling (US$0.6 million), first phase conversions for eight household refrigerator manufacturers (US$6.2 million), conversions for two non-insulating foam manufacturers (US$0.7 million), conversions for three halon fire extinguisher manufacturers (US$0.5 million), and conversions for three solvent users in the electronics and/or metal cleaning industry (US$0.7 million).

Description of Provisional Fourth Tranche Subprojects

Implementation of this group of sub-projects is expected to begin in April, 1995.

The fourth group will likely include about 5 subprojects to eliminate about 450 ODP MT and will require US$2.5 million in OTF financing. These sub-projects will likely include conversions for three non-insulating foam manufacturers (US$1.4 million) and conversions for two halon fire extinguisher manufacturers (US$1.1 million).
Draft Sub-Project Eligibility, Funding and Appraisal Criteria

This annex outlines major criteria for evaluation of subprojects financed by the Ozone Projects Trust Fund (OTF). These criteria should serve as a basis for the preparation of projects to phaseout ozone depleting substances (ODS) and to evaluate eligibility and funding:

A. SUBPROJECT AND FUNDING ELIGIBILITY

1. Selection. Subprojects should be on priority list as given in the Country Program for Phase Out of Ozone Depleting Substances (CP) or confirmed by the Technical Team of the National Ozone Committee as essential to achieve CP objectives. Subprojects should have direct and demonstrable results in reducing ODS consumption in the country. They should be cost effective and based on environmentally sound technologies that can be substituted for the ozone depleting substances (ODS) controlled by the Montreal Protocol, or that can be used to recycle ODS or substitutes, taking into account the national industrial policy of the Country.

2. Eligibility. Enterprises that produce or consume ODS are eligible for the incremental costs of phaseout as defined below, taking into consideration enterprise ownership and the market for its goods or services as follows:

   (a) Ownership. An enterprise/subproject is eligible for funding in direct proportion to local ownership percentage of the enterprise.

   (b) Market (Exports). In terms of market, a subproject is eligible for funding unless it is located in a "free zone" and its products for export only.

3. Financing. Montreal Protocol funds processed through the World Bank’s Ozone Projects Trust Fund (OTF) are on the basis of grants to enterprise/agency/institution implementing subprojects. Grants are calculated in economic terms for the "incremental costs" as elaborated below. Methodology for calculating incremental costs should be consistent with eligibility as defined by Montreal Protocol Fund Executive Committee (MPEC) and with the Bank’s interpretation of incremental costs.

   Determination of Incremental Costs:

   (a) Incremental costs are defined as the net present value of incremental economic subprojects costs (investment capital plus operating costs net of operating benefits) discounted at 10% in real terms (constant prices). When appropriate, projecting operating benefits, risks associated with technology, market and financial factors of undertaking the subproject should be taken into consideration.

   (b) In cases where the subproject proponent has to put up capital (from its own resources or commercial loans) to co-finance part of the project costs, the necessity for providing sufficient incentive to undertake the subproject should be considered, i.e., enterprise obtains an acceptable return on its own capital. The Grant amount could then be determined in such a way that the economic rate of return (ERR-internal rate of return calculated in economic terms) on the risk capital is 10% (real terms). For comparison, a financial rate of return (FRR-internal rate of return calculated in
financial terms) for the subproject should also be calculated. If the financial rate of return differs substantially from the ERR (e.g., because of major distortions of market prices) and would be unacceptably low for the enterprise, the grant amount may be determined based on a minimum FRR. Such situations should be raised as issues in the Subproject Appraisal Reports. The minimum FRR should be determined based on an objective assessment of the country’s local financial sector and should correspond to the best judgement of a reasonable return on capital expectation within the country’s industrial sector. In many cases subproject proponents will view ODS phaseout investments as necessary business costs and may not require financial incentives in addition to grants for incremental costs.

Reimbursement:

Present informal MPEC guidelines limit reimbursements for recurring costs net of operational savings to 4 years. Reimbursements for longer periods would have to be approved on a case by case basis. Direct taxes (import, excise, etc) are not eligible for reimbursement. However, normally UN/Bank projects would be exempt from such taxes. (The issue of taxes should be addressed in the appraisal process and if an issue, raised in the Project Summary and Bank project documents).

4. **Policy Considerations.** The purpose of the MP Fund is to encourage countries/enterprises to undertake operations quickly to correct an external environmental problem, and to compensate for direct costs incurred by those operations. Overall economic/industrial policy reform is excluded from consideration by the MP. Guidelines and policies required to develop and implement the country’s ODS phaseout program are to be addressed in the ODS Country Program that is approved by the MPEC. However, policies that directly affect the successful implementation of the subproject should be identified and addressed in the Bank project approval process, preferably before the subproject is submitted to the MPEC.

**B. ELEMENTS OF THE SUBPROJECT APPRAISAL**

The subproject feasibility and appraisal reports should include:

(a) Project scope - including full description, technology, source of supply; divided into: (a) component relating to ODS phaseout; and (b) other components, such as expansion of output or product upgrading. For subprojects relying on consultants for technical assistance, the appraisal will include a list of consultants and their CVs.

(b) Schedule and quantity of ODS (expressed as ODS and ODP) phaseout directly attributed to subproject, on annual and total basis.

(c) Project costs, divided into: (a) one-time capital and training costs; (b) incremental recurring costs/savings such as operating costs/savings; and (c) incremental benefits such as additional revenues according to standard project analysis methodology.

(d) Review of technical feasibility of subproject, including safety provisions, should be undertaken to determine the soundness of the technical proposal in terms of the enterprises basic technical capability. Appraisal of the non-ODS technology selection will be completed by the World Bank’s Ozone Operations Resource Group.
(e) Economic and financial analysis of the subproject should be undertaken according to standard Bank methodology. Any significant difference between the IRR in calculated in financial and economic terms should be explained. Any policy distortion that affects the successful implementation of the subproject or affecting the implementation of the country’s ODS CP should be identified, analyzed and appropriate recommendations made.

(f) Financial analysis of enterprise. A set of minimum financial indicators to ensure enterprise viability and its ability to implement the subproject successfully should be determined based on local conditions and should be consistent with commercial financial practice in the country.

(g) Financing arrangements, sources and terms and conditions, divided into: (a) incremental costs related to ODS phaseout to be financed as a grant from the OTF; (b) amount to be provided by the enterprise form its own resources; and (c) local and/or foreign loans to be financed through commercial loans from local and/or foreign institutions (at commercial interest rates), should be shown and confirmed.

(h) Project implementation arrangements including management, engineering and technology acquisition, procurement, installation, operation, marketing and schedule for all implementation steps should be included in the appraisal report. Procurement and selection of consultants should follow procedures consistent with the relevant Bank Guidelines. For subprojects which include environmental concerns, an appropriate evaluation in accordance with local regulations will be included in the Subproject Appraisal Report.

(i) Reporting requirements by the subproject proponent would include progress reports to the financial agent according to the practice applied by in similar World Bank funded projects. As a minimum, the enterprise would submit periodic project progress reports and project completion reports. For subprojects which include incremental operating cost payments, beneficiaries would submit annual operation reports until disbursement is complete.

(j) Cost effectiveness. The "unit abatement cost" (UAC) is an indicator of the cost effectiveness in terms of ODS reduction. The UAC is the annual cost required to remove one kilogram of ODS weighted for its ODP value. The most cost effective subprojects, those with the lowest unit abatement cost, should in most cases be done ahead of projects with a higher UAC. Developments and improvements in ODS replacement technologies are on-going and subprojects with a high cost for ODS reduction may become cheaper in the future as more experience is gained with replacement technologies. It should noted, however, that UAC is only one indicator of cost effectiveness for ODS phaseout projects. Other considerations, such as cumulative ODS savings, are also important effectiveness indicators.
UAC Calculation Formula:

\[ A = \frac{C(F) + (OC-OS)}{W} \]

where:

- \( A \) = Unit abatement cost, US$/kg ODP saved/year (at full operation)
- \( C \) = Incremental capital cost, including all initial one time costs such as technology, training
- \( F \) = Capital recovery factor; the annualized capital cost charges, discounted at a standard discount rate of 10% per year, over the economic life of the project.
- \( OC \) = Annual Operating Costs at full operation
- \( OS \) = Annual Operating Benefits at full operation
- \( W \) = Quantity of ODS saved annually expressed as ODP units

The unit abatement cost calculation is also used to give a relative ranking of projects across countries and within the same sector. The lower unit abatement costs correspond to the higher priority in terms of cost effectiveness. The unit abatement cost is calculated at standard discount rates to facilitate cross country comparisons.
Proposed Implementation and Funds Transfer Framework

Overall Responsibilities

The State Ministry of Environment (SME) in its role as chairman of the inter-agency National Committee on Ozone Protection and ODS Phaseout will act on behalf of the Government of Indonesia (GOI) as implementing agency for the ODS Phase Out Investment Project (ODS Project) and will ensure that subprojects are consistent with the Country Program on Substances that Deplete the Ozone Layer (CP) and meet eligibility criteria for projects financed by the Multilateral Fund for Implementation of the Montreal Protocol (the MP Fund). The Technical Team under the National Committee will oversee and promote subproject identification and preparation. Daily operations of the Technical Team will be handled by the Ozone Layer Protection Unit located at SME. SME has appointed Bank UPPINDO to assist in administration of grants from the World Bank’s Ozone Projects Trust Fund (OTF) through the Ministry of Finance (MOF) to subproject beneficiaries approved by the Technical Team, The World Bank and the MP Fund Executive Committee (MPEC), including appraisal of subproject proposals, overseeing disbursement and procurement, and the supervision of subproject implementation. SME will supervise Bank UPPINDO’s activities including visits to subproject sites. Specific sign-off responsibilities and the processing leading up to the finalization of subgrant agreements are summarized in Figure 1, at the end of this annex.

I. Processing Steps Prior to Funding Approval by the MPEC:

1. **Subproject Preparation.** The Technical Team will promote subproject preparation by coordinating dissemination of information to enterprises that consume ODS, including information about: (i) alternative technologies; (ii) MP Fund eligibility and financing criteria; and (iii) the MP Fund application process. Enterprises will be responsible for preparing pre-investment studies and funding proposals. The Technical Team will also coordinate activities among implementing agencies, including designation of projects to agencies by subsector, or other division, that will ensure efficient use of project preparation resources. The Bank will provide resources for project preparation as approved by MPEC.

2. **Preliminary Technical Review.** Subproject preparation will include a preliminary technical review of project concepts from the appropriate technical expert in the World Bank’s Ozone Operations Resource Group (OORG). Copies of project concepts submitted for OORG review and OORG comments will be provided to Bank UPPINDO, the World Bank and the Technical Team.

3. **Local Endorsement.** The Technical Team, after reviewing subproject proposals and OORG comments, will endorse proposals that are sound and conform to priorities established under the Indonesian Country Program for the Phase Out of ODS.

4. **Subproject Appraisal.** Bank UPPINDO, the project financial agent (FA), will appraise subprojects based on agreed criteria in accordance with the Bank Proforma Subproject Appraisal Report format, ensuring that all technical issues raised by OORG reviewer (preliminary review) have been addressed. The Technical Team will review appraisal reports and submit them along with subproject feasibility studies to the World Bank.
(5) **Technical Review and Bank Endorsement.** The Bank will oversee final OORG technical reviews of subproject proposals (appraisal reports and feasibility studies) and endorse each subproject to ensure that it is consistent with guidelines for the MP Fund.

II. **MPEC Approval.** The Bank will submit subprojects to the MPEC in groups. The first groups of subprojects up to US$17 million in grant funds will comprise the ODS project. Although subprojects will be submitted in groups under one umbrella project, the MPEC will review and approve each subproject individually.

III. **Processing Steps Following Funding Approval by the MPEC:**

(1) **Grant Agreement.** Following MPEC approval of at least 20% of the total amount to be channeled under the ODS project, or US$3.4 million, an "umbrella" Grant Agreement will be signed between the Bank and MOF.

(2) **PIA for Financial Administration Services.** SME will sign a Project Implementation Agreement agreeable to the Bank with Bank UPPINDO describing the bank's responsibilities under the ODS project including, subproject appraisal, procurement and disbursement oversight, and supervision.

(3) **Final Subproject Appraisal.** In accordance with priorities established by the Technical Team, Bank UPPINDO will prepare final Subproject Appraisal Reports for approved subprojects considering any MPEC comments. Bank UPPINDO will submit them to both SME and the Bank for approval, together with draft subgrant agreements based on a model acceptable to the Bank.

(4) **Bank Review and Sub-Grant Approval.** The Bank will review each Subproject Appraisal Report and draft subgrant agreement to ensure consistency with eligibility criteria and MPEC approval.

(5) **Subgrant Agreements.** After Subproject Appraisal Reports are approved by SME and the Bank, SME will finalize subgrant agreements. SME and the beneficiary will sign agreements after they are reviewed by Bank UPPINDO. The subgrant agreement will commit the beneficiary to undertake the necessary activities agreed upon in the subproject proposal in order to achieve the intended ODS reduction or elimination. Terms, conditions and schedule for disbursement would be included in the subgrant agreement.

(6) **Disbursement:**

(a) **Between World Bank and MOF:** The World Bank proposes to transfer an initial amount up to US$1.5 million to a Special Account which MOF would open. The minimum amount for replenishment of the Special Account would be US$300,000, provided funds were approved by MPEC and transferred to the OTF. Requests for replenishment would be based on Statement of Expenditures (SOEs) for contracts for goods with a value of up to US$250,000 each. The World Bank would accept requests for direct payment or L/Cs to supplier of goods or services (not through Special Account) only
above a minimum of US$300,000. Such requests would be processed through BI following BAPPENAS approval (Form 2).

(b) Between MOF, BI, Bank UPPINDO and Beneficiary: Disbursement requests will be passed by the beneficiary to Bank UPPINDO who will, after confirming requests consistency with subproject agreements, process appropriate disbursement applications. Disbursement applications will be passed through SME to MOF or BI, as appropriate, for payment processing. (Special Account requests will be handled by MOF and direct payment or L/C requests will be handled by BI). Bank UPPINDO may authorize disbursement up to US$250,000 per contract (except consultant contracts), to the beneficiary for eligible expenses without prior review by the World Bank. Disbursement will follow the guidelines established in the Disbursement Handbook published by the World Bank in 1992. Details of the disbursement procedures will be included in a Disbursement Letter to be issued by the World Bank.

(c) Disbursement for operating costs: For projects with incremental operating costs (as opposed to investment costs), Bank UPPINDO will propose in the Subproject Appraisal Report a disbursement plan in two or more tranches. Release of the tranches would be based on receipt of progress reports satisfactory to Bank UPPINDO.

(7) Procurement. Beneficiaries will ensure that procurement under the project follows agreed guidelines. They will, with assistance from technical consultants provided for in the grant as required, and/or with guidance from Bank UPPINDO, arrange procurement (international and local) for the packages in each subproject. Bidding documents will be prepared based on model bidding documents acceptable to the World Bank (e.g., standard Bank bidding documents). Bank UPPINDO will review compliance with the agreed procedures.

(8) Subproject Implementation. Each beneficiary will be responsible for subproject implementation in accordance with the subgrant agreement. Beneficiaries will be responsible for preparing quarterly progress reports, progress completion reports and project operational reports for subprojects receiving incremental operating cost payments and submitting them to Bank UPPINDO. Bank UPPINDO will review reports and pass a copy to SME. In cases where multiple disbursement tranches have been agreed, the beneficiary would submit one progress report prior to each tranche release.

(9) Subproject Supervision and Reporting. Bank UPPINDO will have prime responsibility for supervising implementation of subprojects until all disbursements have been made. Bank UPPINDO will receive technical support for subproject supervision from the Technical Team and from consultants provided for in its technical assistance component. Bank UPPINDO will submit semi-annual reports on the status of the grant disbursements and the progress of the subprojects to SME and the World Bank until grant is fully disbursed. Bank UPPINDO's responsibility for subproject supervision ends after full disbursement and approval of the project completion report. The National Committee has the right to monitor the progress of OTF funded subprojects in fulfillment of its overall responsibility for implementation of the ODS Phaseout Country Program.
Auditing:

(a) MOF will have an annual audit report of the Special Account prepared by an independent auditor acceptable to the World Bank. The audit report, including a separate opinion on SOEs used as a basis for disbursement, would be submitted to Bank within six months of the end of the GOI's fiscal year.

(b) Contingent upon the approval of additional funds for this purpose by the MPEC, SME will appoint an independent consultant acceptable to the Bank to perform technical audits of the subproject investments. The Terms of Reference for the consultant will be submitted for the approval of the Bank, and the consultant will be appointed in December 1994. Three audit reports will be submitted simultaneously to SME and the Bank at six monthly intervals, the first in June 1995. Each report will include an independent opinion of the implementation of the subprojects as specified in the subgrant agreements, and the extent to which ODS have been successfully phased-out.

Compliance:

(a) If the Bank determines at any time that an unjustified payment has been made from the Special Account, the MOF will ensure that an equal amount is deposited into the Special Account.

(b) If the Bank or SME determines that any part of a subgrant has been used in a manner other than specified in the subgrant agreement, the enterprise will refund the amount together with interest calculated as a moving average of the SBI rate over the relevant period.
## Figure 1

Summary of Processing Steps and Sign-off Responsibilities Leading to Finalization of Subgrant Agreements

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Responsible Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Prepare Subprojects</td>
<td>SUCOFINDO, Technical Team, Enterprise</td>
</tr>
<tr>
<td>3.</td>
<td>Local Endorsement</td>
<td>Technical Team</td>
</tr>
<tr>
<td>4.</td>
<td>Subproject Appraisal</td>
<td>Bank UPPINDO Technical Team - Sign-off</td>
</tr>
<tr>
<td>5.</td>
<td>Technical Review and Bank Endorsement</td>
<td>OORG The World Bank - Sign-off</td>
</tr>
<tr>
<td>6.</td>
<td>MPEC Approval</td>
<td>MPEC - Sign-off</td>
</tr>
<tr>
<td>7.</td>
<td>Final Subproject Appraisal Reports</td>
<td>UPPINDO</td>
</tr>
<tr>
<td>8.</td>
<td>Subproject Approval</td>
<td>The World Bank - Sign-off SME - Sign-off</td>
</tr>
<tr>
<td>9.</td>
<td>Subgrant Agreement</td>
<td>SME - Sign-off Enterprise - Sign-off</td>
</tr>
</tbody>
</table>
### Project Implementation

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project Implementation</td>
<td>11/1/94</td>
<td>10/5/98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TA Component</td>
<td>11/1/94</td>
<td>2/6/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>UPPINDO Work Program</td>
<td>11/1/94</td>
<td>12/26/94</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Ozone Unit Work Program</td>
<td>11/1/94</td>
<td>2/6/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Subprojects</td>
<td>11/1/94</td>
<td>10/5/98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Group 1</td>
<td>11/1/94</td>
<td>7/7/97</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Fund Utilization Sched</td>
<td>11/1/94</td>
<td>11/14/94</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Appraisal</td>
<td>11/15/94</td>
<td>12/26/94</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Sign Subgrant Agreement</td>
<td>12/27/94</td>
<td>1/9/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Implementation</td>
<td>1/10/95</td>
<td>7/7/97</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Group 2</td>
<td>11/1/94</td>
<td>2/19/96</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>MPEC Approval</td>
<td>11/1/94</td>
<td>12/26/94</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Fund Utilization Sched</td>
<td>12/27/94</td>
<td>1/9/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Appraisal</td>
<td>1/10/95</td>
<td>2/6/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Sign Subgrant Agreement</td>
<td>2/7/95</td>
<td>2/20/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Implementation</td>
<td>2/21/95</td>
<td>2/19/96</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Group 3</td>
<td>11/1/94</td>
<td>10/5/98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>OORG Review</td>
<td>11/1/94</td>
<td>11/21/94</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>MPEC Approval</td>
<td>11/22/94</td>
<td>1/2/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Fund Utilization Sched</td>
<td>1/3/95</td>
<td>1/30/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Appraisal</td>
<td>1/31/95</td>
<td>3/27/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Sign Subgrant Agreement</td>
<td>3/28/95</td>
<td>4/10/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Implementation</td>
<td>4/11/95</td>
<td>10/5/98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Group 4</td>
<td>11/1/94</td>
<td>12/29/97</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Project Prep</td>
<td>11/1/94</td>
<td>1/23/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>OORG Review</td>
<td>1/24/95</td>
<td>2/13/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>MPEC Approval</td>
<td>2/14/95</td>
<td>3/27/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Fund Utilization Sched</td>
<td>3/28/95</td>
<td>4/24/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Appraisal</td>
<td>4/25/95</td>
<td>6/19/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Sign Subgrant Agreement</td>
<td>6/20/95</td>
<td>7/3/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Implementation</td>
<td>7/4/95</td>
<td>12/29/97</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>