ABOUT...

The Asia Pacific Roundtable for Cleaner Production mission is to foster dialog among industry, government, academia, and non-government organizations in the region to address pollution problems and solutions. Roundtable goals include promoting information exchange among its members through newsletters, e-mail list servers, technical journals, special publications, conferences, and symposia. The Roundtable will utilize this website to provide tools to cleaner production practitioners and to support working groups of the Roundtable. This website is designed to provide information about the Roundtable, including membership information, the charter, bylaws, and reports. In addition, this site will convey technical and policy options to practitioners in the field, including:

- ❖····*Industry-specific cleaner production guides.*
- ❖····*Facilitated on-line dialogues on current cleaner production issues.*
- ❖· *Gateway to cleaner production roundtable sites and information.*
- ❖····*Regional meeting and training opportunities.*
- ❖····*Access to cleaner production cooperatives in other regions of the world & related links.*
- ❖····*Online software and training materials.*

e Asia Pacific is a rich and dynamic region containing diverse cultures and rapidly modernizing countries.* wever, pollution and environmental degradation caused by industrialization and urbanization has emerged as : of the region s most pressing issues.* In recent years, countries in the Asia Pacific have embraced the ıciples of cleaner production to reverse this trend.* Cleaner production is an integrated, preventive and active strategy that yields significant improvements in productivity and product quality as well as permanent, -cost reductions in waste and pollution at their source of generation.* Countries throughout the region are ılementing innovative cleaner production policies and programs to find solutions to these pressing 'ironmental challenges.

997, the first regional conference of Asia Pacific Roundtable for Cleaner Production (APRCP) was held in ıgkok, Thailand.* This widely acclaimed event brought together leaders from throughout the ion.* Participants in the conference agreed that the future actions were needed to ensure regular and ongoing :hanisms to share information on cleaner production strategies and techniques.

998, the informal network that resulted from this landmark event evolved into a new organization — the Asia :ific Roundtable for Cleaner Production (APRCP) — which was created to improve information and technology hange, and sponsor regional events and training programs.* Today, this network of leading public and private anizations that share a goal of accelerating cleaner production approaches within countries and throughout region is growing rapidly.

ıe spirit of the Bangkok conference, APRCP s approach is to promote technology and information exchange, to encourage cooperation and partnerships among government, industry, academic institutions and non-ernmental organizations.* APRCP s mission is to provide leadership and support that will enhance information and human resource development, and will strengthen public-private partnership to stimulate the promotion implementation of cleaner production strategies and technologies in the region.

a new international non-governmental and non-profit membership organization, APRCP is refining the mix of s and activities it will utilize.* An organizational charter now exists to guide APRCP s direction and future vities.* APRCP publishes a quarterly newsletter that highlights regional cleaner production initiatives and vides up-to-date news and information.* APRCP is also actively encouraging the use of Asia Pacific Cleaner duction Network (APRP-net), a promising new e-mail discussion group administered by the Thailand 'ironment Institute.* This tool allows organizations from across the region to share cleaner production-related rmation quickly and easily.

ɔe its inception, the APRCP has held three (3) successful Roundtables. First was the aforementioned 1997 ındtable (November 12-14, 1997) in Bangkok, Thailand; the Second in Brisbane, Australia last April 21-24, 9 while the most recent was in Manila, Philippines just last February 28-March 2, 201. In al three ındtables, participants--numbering around 20 or more from various countries from* around the region--were ıersed in an intensive three-day program consisting of themed parallel sessions, presentation of submitted ers, concurrent panel discussions, plant visits and other activities designed to stimulate debate and meet d-on the challenges posed by the threats to our environment.

公害防止関連の政府施策（規制基準の設定以外）

ビジョン

●Philippine Agenda21（PA21）

・1992年のリオデジャネイロにおける地球サミットで合意した地球レベルの行動計画Agenda21を受けて1996年ラモス政権時に策定。環境に配慮した持続可能な開発への取り組み・決意が述べられている。

・1992年EO(Executive Order).15により、18省庁、市民団体、業界団体等からなるPCSD(The Philippines Council for Sustainable Development）が設置され、PA21の実施、中期国家開発計画への取り込み等を行っている。

・UNDPによるPRIME Projectのmodule1において、PA21を受け、73の業界団体がそれぞれの行動計画Philippine Business Agenda21を策定している。

投資インセンティブ

●Investment Priorities Plan（IPP）

・1987年OIC（the Omnibus Investment Code）29条により毎年策定することになっており、優先事業及びインセンティブが定められている。

・所管はDTI-BOI（貿易産業省投資委員会）。

・Priority Investment Areasの中で、Environmental projectsが含まれている。

・IPP-2001の環境政策の中で、新規事業・事業の拡大にあたってのECCの確実な取得、ISO14000の取得励行が述べられている。

・外国投資ネガティブリストにおいて、「営業免許を必要とするサービス業」中にエンジニアリング、環境プランニングが含まれている。

●Philippines Economic Zone Authority （PEZA）

・原則として、生産品の100％を輸出する企業に限られ、例外的に生産品の30％まで国内販売が可能な場合もある。

訓練、コンサルタンシーサービス

＜訓練＞

●Development Academy of the Philippines（DAP）

・LGUs他政府機関の研修機関である、DAP （APOのNational Organization、フィリピン開発銀行等が出資しているGovernment Corporation、Green Productivityの実施機関）がAPO、CDG、（Carl Duisberg

Gesellchaft)、UNEP 等の支援を得て green productivity、cleaner production をテーマとするセミナー、ワークショップを実施。

●Cleaner Production Technology Center

・DOST (Department of Science and Technology) が Cleaner Production Technology Center に委託し、SMEs のクリーナープロダクション導入支援のための、「Integrated Program on Cleaner Production Technologies (IPCT)」を実施し、以下のサービスを行っている。

1. Seminars and Trainings for SMEs : ECO201 Training、CP Assessment Training、Feasibility Study Preparation Training
2. Industry Assistance : CP Assessment、Technology Review 、Feasibility Study 、Sampling、Analysis and Monitoring Fund Sourcing for CP Projects
3. Information Hub Facilities : CP Technology Database 、Books and Other Reference Materials

＜情報サービス＞

●BOI

・By-product exchange のデータベース作成、Eco-industrial park

＜環境サービス＞

●PRIME Project

・UNDP の実施する PRIME Project にて環境サービス事業者のリストを作成した。

（参考）

・1995 年のマーケット需要 US$346,000,000

1997 年 US$546,000,000

（出展：CASH IN ON THE ENVIRONMENT～INVESTMENT:PRIME Project, US DOC 1997 Environmental Business International 1995）

・環境コンサルタントサービスの需要 2000 年 2.3 十億ペソ

2010 年 4.1 十億ペソ

（出展：CASH IN ON THE ENVIRONMENT～INVESTMENT:PRIME Project）

・環境コンサルタントサービス需要の内訳（2000 年～2010 年の予測）

IEE（initial Environmental Examinations）:69.29%

Pollution Prevention/Waste Minimization:15.8%

EIA:6.03%

Compliance Audit:5.70%

Legal Advisory:2.17%

・環境エンジニアリングサービス需要の内訳（2000 年～2010 年の予測）

排水処理：80.11％

汚染防止技術：12.88％

クリーン・テクノロジー：6.61％

CP Technology Center, ITDI （Industrial Technology Development Institute）

課徴金

●LLDA

・Environment Users Fee：排水中の BOD の濃度と排出総量に応じて料金を支払う（ラグナ湖周辺のみ）

優遇融資

●Development Bank of the Philippines（DBP）

○Environmental Infrastructure Support Credit Program（EISCP） 1997-1999

・JBIC による支援。融資 50 億円、技術協力 1.47 億円

・民間企業への技術支援、DBP のキャパシティ・ビルディング、融資審査時の環境配慮等

○Industrial Pollution Control Loan Project（IPCLP）1998-

・KfW による支援。融資 9.2 百万 DM、技術協力 0.8 百万 DM

・SMEs に対する融資・技術協力、クリーナープロダクション・労働安全・衛生の導入等

●Land Bank DBP （Development Bank of Philippines）

・IBRD の出資により CLF（Countryside Loan Fund）を実施。NCR（National Capital Region）以外の地域に対し、古い設備のリハビリを含む環境負荷削減設備の導入について融資を行う。

環境影響評価

・全省庁が、事業者の環境影響評価書の作成を支援

環境会計

●The Philippine Environmental and Natural Resources Accounting Project（ENRAP）

・実施機関：DENR、National Statistical Coordination Board、 USAID

・環境会計の普及を図り、普及のための政策提言を行った。現在第 4 フェーズの段階であるが、普及は未だ不十分である。

・USAID は Philippine Institute of Certified Public Accountants を通じても環境会計の普及を図っている。

業界組織化（民間の自主的な取り組み）

●フィリピン商工会議所

・会員企業に対する、環境法・規制の内容、排水・廃棄物管理、リサイクル等多面的な情報提供、政府機関とのダイアログの実施を行っている。

●ホテル・レストラン協会

・PBE（Philippines Business for Environment）the Environment and Asia Foudation 等の支援により、ISO14000 等環境管理システムの導入マニュアルを作成し、導入を会員企業に促している。また、水利用合理化、省エネルギーにかかる情報普及も行っている。

●紙パルプ協会

・Sweden International Development Agency 等の支援を得て、会員企業に対し技術情報の提供、DENR、DBP 等環境管理関係機関とのダイアログを行っている。

・他電機産業協会、化学産業協会、建設産業協会等多数の産業団体で、ISO14000 他環境管理システムの導入、クリーナープロダクション等技術普及セミナーの実施を行っている。

公害防止法・規則

＜全般＞

●Revised Pollution Control Law　1976 年 PD984

大気、水質ほか他の汚染物質の排出基準を定めている。

●Philippine Environment POLICY　1977 年 PD（Presidential Decree）1151

・環境保護にかかる政策、目標の他プロジェクトに対する EIA（Environmental Impact Analysis）の実施、ECC（Environmental Compliance Certificate）の取得を定める。

・EIA については、要求される情報量の多さ、長期にわたる審査期間等の理由より poor acceptance/compliance が問題視されている。

●Philippine Environment CODE-Standards　1977 年 PD1152

・廃棄物・大気・水質管理にかかる基準・ガイドライン（1987 年　EO192 により見直し）、環境教育、研究、税金にかかるインセンティブ等について定められている。

●Environmental Impact Statement （EIS） System　1978 年 PD1586、1996 年 DAO（Department Administrative Order）96-37

・環境への影響が予想される事業等について EIS の提出を定めた。

・DAO96-37 により、住民参加、モニタリング、罰則等が定められた。

●Pollution Control Officers（PCO）　DAO92-26

・PCO の認定ガイドライン及び、各事業所への配置を定める。

・本法の存在を未だ知らないケースもあるため、PCO 団体が啓蒙のための研修、ワークショップ、セミナー等を実施している。

＜廃棄物関連＞

●Sanitation Code-Solid & Liquid Waste DISPOSAL 1975 年 PD856

・住民保護のため下水にかかる基準を設け、また自治体に適切な固形、液状廃棄物の処分を求めた。

●Solid Waste Disposal under LGUs　1991 年 RA7160

・廃棄物の処分は LGUs の責任である旨定めた。

●Toxic Substance, Hazardous and Nuclear Wastes　1990 年 RA6969

・毒性の物質、有害・放射性廃棄物にかかる汚染ついて罰則を課した。

●IRR for Toxic Substance, Hazardous Wastes　DAO92-29

・化学物質の輸入、製造、保管、輸送、販売、使用、廃棄等、有害廃棄物の適切な管理にかかる規制。

●Solid Waste Management Act　2001 年

・固形廃棄物管理計画・プログラム、それらの実行において包括的・統合的アプローチをとることが定められている。また、本法により国家固形廃棄物管理委員会が設立されることとなっている

＜大気汚染関連＞

●Clean Air Act（CAA）　of 1999 RA8749

・廃棄物の焼却の禁止及び適法な焼却設備への移行期間、石油製品にかかる排ガス基準を定め、DENR に対し排出課徴金制度の導入を義務づけた。

●Phase-out of Leaded Gasoline　DAO98-47

・CAA に関連し、ガソリンの無鉛化についての IRR（Implementing Rules and Regulations を定めた。

＜水質汚染関連＞

●Water Code of the Philippines　PD1067

・水資源開発、保全について定めた。

●Water Usage and Water Quality Criteria DAO90-34,35

・使用用途による水資源区分、水質基準、分析及びその指標等について定めた。

●Prevention of Marine Pollution　PD600

・魚介類保護のため固形廃棄物の海洋投棄を禁じた。

＜排出課徴金＞

●Environment Users Fee System　LLDA Board Res.96-33

・ラグナ湖への環境負荷を最小化するために、廃液・廃水排出者に対し、環境汚染費用の内部化を求め、定額の課徴金の支払いを義務付けた。

Summary Sheet for the Development Study Program for JFY 2001
A proposal submitted to Japan International Cooperation Agency

別添9

1. Project title: Development Study on Industrial Environmental Management

2. Priority issues and areas for economic cooperation

   (Area 3-1) Provision of environmental measures i.e. strengthening of administrative capacity in environmental fields, waste disposal in urban areas, and measures against industrial pollution

3. Type of study: Master Plan

4. Field of study: Industrial environmental management and industrial ecology

5. Implementing agency: Board of Investments, Department of Trade and Industry

   Roles and responsibilities:

   The Board of Investments in general, aims to increase the level of investments in the Philippines. The Board of Investments, with the Bureau of Product Standards is advocating industrial environmental management as a strategy for sustainable economic development. In this proposed project, the Board of Investments will be the lead agency that will work directly in partnership with the Japan study team.

   The Board of Investments will provide one full-time and several part-time staff for this project. Partner companies will provide counterpart in kind (e.g. staff time, meeting venues)

6. Study area

   This will be a national study that will cover the major manufacturing and agribusiness centers in Luzon, Visayas and Mindanao regions.

7. Background of the request

   The lack of environmental management and zero emission (industrial ecology) practices in the Philippines has led to persistent air and water pollution and unmanaged solid waste. Current environmental projects focus on manufacturing and tend to be site-specific, industry-specific or field-specific. This proposed project aims to develop a holistic approach by meshing environmental management with industrial ecology. It also looks into the applications of industrial ecology in agribusiness.

8. Objectives of the request

The study aims to:

- Develop an action plan to promote industrial environmental management and zero emission
- Demonstrate in a small scale how these can be implemented
- Strengthen the capability of the Board of Investments in assisting its investors in environmental management and zero emission

Beneficiaries: The project will directly benefit the Board of Investments by identifying policy directions and recommending specific actions. It will also provide on-the-job training to BOI staff in Manila and the regions, in addition to training for participants from the private sector, local government units and other government bodies like the Department of Agriculture. The project will help a number of companies through its demonstration projects. When transformed into an action project later, it is expected to benefit small and medium companies, industrial estates, agribusiness concerns and agricultural communities.

Long term goal of the study: To reduce industrial pollution in the Philippines by a measurable factor.

9. Contents of the study

Detailed study items are:

- Industrial environmental management practices in the Philippines
- Current and recent industrial environmental programmes
- Assessment of quality and quantity of reusable industrial and agricultural waste
- Potential for by-product use, including waste to energy
- Appropriate technology

The proposal includes demonstration projects in several sites to implement environmental management and industrial ecology.

Study period will be:

Apr 2001	Mobilisation of experts, consultation with government and private sector stakeholders, initial evaluation
May 2001	Inception report; start of detailed research in Metro Manila, Luzon, Visayas and Mindanao
Jun 2001	Establishment of demonstration sites
Oct 2001	Progress report
Feb 2002	First draft development study
Mar 2002	Final development study

10. Relevant Japanese cooperation project

The Japan Green Aid Plan currently provides various forms of technical assistance to Philippine companies and government bodies.

Application Form for the Development Study Program for JFY 2001

1. Project digest

1.1 Project title

Development Study on Industrial Environmental Management and Zero Emission

1.2 Location

A national study to be based in Metro Manila, Philippines. The experts will do regional consultations and gather data in the key industrial and agribusiness centres of the Luzon, Visayas and Mindanao regions of the country. Project management will determine the location and number of demonstration projects based on initial survey.

1.3 Implementing agency

1.3.1 Name of agency

Department of Trade and Industry - Board of Investments

1.3.2 Number of staff of the agency

Permanent staff: 349
Temporary and short-term staff: 6

Total 355

1.3.3 Budget allocated to the agency

PHP 192,350,000 for 2000

1.3.4 Organisation chart

See attached sheet.

1.4 Justification for the project

1.4.1 Present conditions of the sector

Philippine business is still in the early stages of adopting environmental management practices. As of July 2000, only around 50 firms are certified to ISO 14001 EMS. Many of these certified firms are large multinationals in the semiconductor and electronics industries. Only a handful consists of small companies.

Likewise, zero emission (known in the Philippines as industrial waste exchange or industrial ecology) is practiced only to a limited extent. Subsequently, hundreds of millions of pesos worth of recyclable by-products are merely wasted. The agribusiness sector is also unaware of the potential uses of its waste (e.g. rice hulls, pineapple leaves), which producers simply burn in the

11. Relevant projects of other donors, if any

- PRIME Project (United Nations Development Programme) on private sector participation in environmental management, which will end on 2001. PRIME has four main thrusts: voluntary environmental action plans through Business Agenda 21, industrial ecology, environmental management system, and environmental entrepreneurship. Being catalytic and with limited resources, the project has a highly focused target clientele and is not designed for extensive and deep nationwide implementation.

- Industrial Initiatives for a Sustainable Environment or IISE (United States Agency for International Development). IISE aims to assist companies initially in the Visayas and Mindanao regions in implementing pollution prevention and environmental management systems. The project ends in 2002.

- United States - Asia Environmental Partnership or US-AEP. This project includes greening the supply chain of companies, clean technology and support of institutional structures and environmental organisations.

- Regional Technical Assistance on Cleaner Production (Asian Development Bank). This aims to evaluate national policy on the environment, particularly in relation to cleaner production.

12. Peace and order situation of the study site: Research sites will be designated outside areas of military conflict.

13. Expected funding source: Government of Japan

open or dump and leave to decay. Manufacturers are also unaware of the potential uses of their waste for agricultural purposes (e.g. distillery wastewater for fertiliser).

Small and medium companies collectively remain a major source of pollution. The lack of environmental management and industrial ecology practices in the Philippines has led to persistent air and water pollution and unmanageable solid waste. The Board of Investments, which stimulates the industrial development of the country is aware of this and feels that it must assist investors in reducing their negative environmental impact. The Board of Investments believes that environmental management will reduce the ecological footprint of industry while improving corporate competitiveness.

1.4.2 Sectoral development policy of the national government

Since the 1970s, the Philippine government has attempted to fix industrial pollution through regulations. This approach has utterly failed. Thus the government has started experimenting with market-based instruments. An example is the Environmental Users Fee, which has proportionally reduced biological oxygen demand in the industrial effluent pouring into the Laguna de Bay, the country's largest lake.

In addition, the Department of Environment and Natural Resources has recently adopted a self-regulation stance. It launched the Philippine Environmental Partnership Program on April 2000 along with the Department of Trade and Industry, the Department of Science and Technology and several other organisations. This program aims to create a cordial atmosphere for business-government dialogue and environmental cooperation. With this partnership in place, companies will find it more attractive to invest in long-term environmental solutions (pollution prevention, environmental management systems) rather than in quick fixes (such as pollution control just to avoid fees on violations).

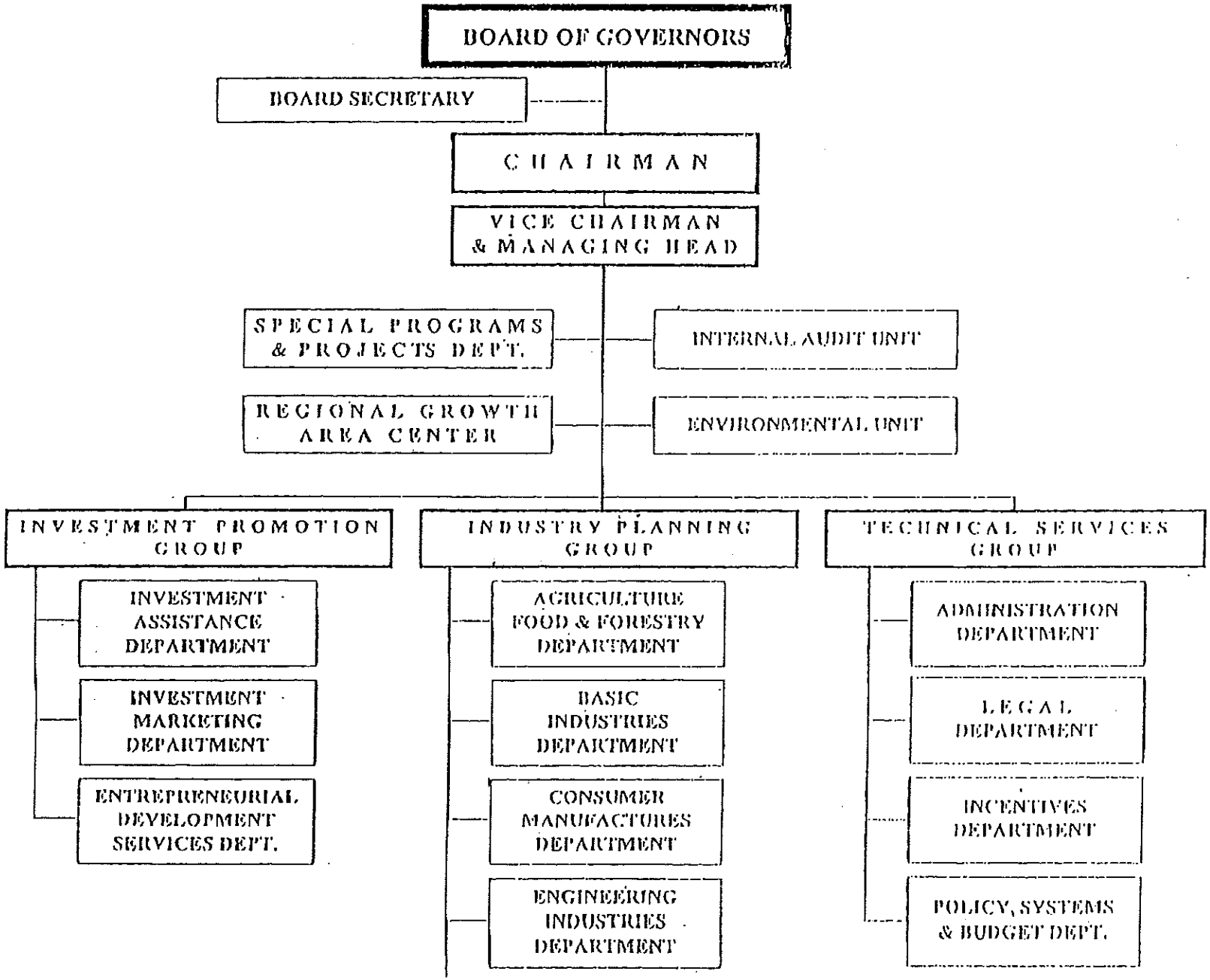
Through the PRIME Project, which started in 1998, the Board of Investments has adopted environmental management as a strategy for industry competitiveness. The PRIME Project is a four-year project on private sector participation in environmental management. It is funded by the United Nations Development Programme (UNDP) and it promotes corporate environmental responsibility.

1.4.3 Problems to be solved in the sector

The proposed study addresses the following problems:

1. Lack of awareness of small and medium companies of the positive impact of environmental management on the corporate bottom line.
2. Lack of awareness of companies of low-cost and no-cost pollution prevention solutions to environmental problems.
3. Lack of knowledge of the proper technology for pollution prevention (e.g. there are wastewater treatment facilities that turn out to be ineffective).
4. Low level of recycling of industrial by-products.
5. Low level of reuse of agricultural by-products.

THE BOARD OF INVESTMENTS



All these problems lead to poor environmental performance of companies, causing environmental degradation.

1.4.4 Outline of the project

The project focuses on environmental management and zero emission. The research will look into the following

- State of corporate environmental management practices in the Philippines
- State of industrial environmental programs in the Philippines
- Industrial and agricultural waste
- Opportunities that can be addressed

1.4.5 Purpose (short-term objective) of the project

The study aims to create a comprehensive action plan to promote industrial environmental management and zero emission

1.4.6 Goal (long-term objective) of the project

The long-term goal is to implement programs that will reduce industrial pollution in the Philippines by a measurable factor. This will be done by catalysing and supporting private sector initiatives.

1.4.7 Prospective beneficiaries

Immediate beneficiaries: Board of Investments and a number of enterprises that will participate in demonstration projects. Participants from local government and other government bodies like the Department of Agriculture will also benefit in training to be conducted.

Long-term beneficiaries:

- Small and medium enterprises
- Industrial estates
- Agribusiness firms and farming communities

1.4.8 The project's priority in the national development plan

Environmental and sustainable development are part of the Philippines 1999-2004 Medium-Term Philippine Development Plan

Environmental management is an essential part of the Philippine Agenda 21, which is the country's commitment to the global Agenda 21.

1.5 Desireable or scheduled time of the commencement of the project

April 2001 to March 2002

1.6 Expected funding source and assistance for the project

The government of Japan is requested to support the cost of deploying experts in this project, including their basic office equipment, local travel and meetings. The requested grant will include the costs for the demonstration projects. The government of the Philippines will provide counterpart personnel and office space.

1.7 Other relevant projects, if any

This proposal is a successor to the PRIME Project, which will end on December 2001. PRIME has 4 main thrusts:

- To help industry associations develop and implement their Business Agenda 21, which consists of their voluntary action plans for environmental management.
- To support pollution prevention by encouraging industrial ecology in industrial estates. The waste materials and energy of one company are used as inputs by another firm.
- To promote total quality culture, competitiveness and industry self-regulation through an environmental management system.
- To encourage entrepreneurs to invest in the growing environmental services and technology industry.

The Board of Investments is the national executing agency of PRIME. Co-implementers include two non-profit organisations (Philippine Business for the Environment and the Philippine Association of Environmental Assessment Professionals) and two government bodies (Environmental Management Bureau and Bureau of Product Standards).

PRIME's experiences will serve as an excellent jump-off point for the proposed development study.

PRIME's Business Agenda 21 (BA21) gives an indication of the environmental management status and needs of a range of industry associations nationwide. The 73 industry associations participating in the BA21 program have identified specific capability-building needs for their member companies. Given its limited resources, PRIME is mobilising technical and financial support from other projects and international development organisations to help these associations implement their BA21 in the long-term. This proposal to JICA is part of this resource mobilisation.

Likewise, the Environmental Management System (EMS) module of PRIME has a pilot implementation of ISO 14001 EMS in ten small and medium enterprises (SMEs). This module demonstrates the lessons and success factors in doing EMS in smaller companies. Being catalytic, it is limited to ten SMEs.

The Industrial Ecology module of PRIME is helping six industrial estates in the provinces of Laguna, Batangas and Bataan implement by-product exchange and industrial ecology. Similarly, the Philippine Business for the Environment also runs the Industrial Waste Exchange Project. These two efforts are limited and are focused on industrial waste. Their geographic focus is mostly around

recommend action plans by the private sector as well as policy interventions by the government.

2.2 Necessity and justification for Japanese technical cooperation

In Asia, Japan leads in terms of the number of companies that have ISO 14001 certification. The country therefore has a lot of experience in environmental management systems that can be shared with companies in the Philippines.

In addition, Japan is also a pioneer in the zero emission concept. Recognising this, the Board of Investments had engaged in 1999 the International Center for Environmental Technology Transfer in Japan to conduct a survey of selected by-product generators in the Metro Manila area. This study was done under the Japan Green Aid Plan to assist PRIME Project efforts.

Japan is also advanced in technology development for pollution prevention. This technology has contributed to the high productivity and superior environmental performance of Japanese companies. It will be worthwhile for Philippine companies to learn about applicable pollution prevention technologies from Japan.

2.3 Objectives of the study

The study aims to:

- Develop an action plan to promote industrial environmental management and zero emission
- Demonstrate how these can be implemented in both manufacturing and agribusiness sectors
- Strengthen the capability of the Board of Investments to assist its investors in environmental management and zero emission

2.4 Area to be covered by the study

This will be a national study. It will cover all major manufacturing and agribusiness centres in the country. This will provide breadth to the data.

Initial assessment of these sites will determine the focus and ultimately the demonstration sites. This will give depth to the study.

2.5 Scope of the study

The study will include the following:

- Industrial environmental management practices in the Philippines
- Current and recent industrial environmental programmes
- Assessment of quality and quantity of reusable industrial and agricultural waste
- Potential for by-product use, including waste to energy
- Appropriate technology

The activities will include demonstration projects in several sites to implement environmental management and industrial ecology. Training and partnership-building of industry and government will be important in this project.

Metro Manila in Luzon. Agribusiness by-products, which generate a significant volume in the countryside are not a major component in these projects.

Another major programme is the Industrial Initiatives for a Sustainable Environment (IISE). This is a project of the United States Agency for International Development (USAID) and it runs from 1998 to 2002. The Environmental Management Bureau is the project manager, with the Board of Investments as partner agency.

IISE originally aimed to assist 400 companies in the Visayas and Mindanao regions implement pollution prevention and an environmental management system (EMS); 200 of these firms were targeted to get ISO 14001 certification. (N.B. At the time of this writing, targets were reduced to 100 companies). IISE does not have any zero emission or industrial ecology component.

Another USAID funded project, the US-AEP also works on EMS primarily through greening the supply chain of major companies. It also introduces to Philippine companies clean technologies from the United States.

Another project is the Asian Development Bank (ADB) Regional Technical Assistance on cleaner production. This aims to evaluate national environmental policy and programs in several Asian countries, particularly in relation to cleanerproduction. The Technical Working Group for the ADB RETA in the Philippines is chaired by the Trade undersecretary of the Department of Trade and Industry. The study is implemented in 2000.

2. Terms of reference for the proposed study

2.1 Necessity and justification of the study

A holistic assessment of industrial environmental management and zero emission (industrial ecology) programs in the Philippines is needed. There is no recent in-depth Philippine study that meshes environmental management systems and zero emission.

Current and recent programs on industrial environmental management have their niches, e.g. IISE as a site-specific EMS program in Visayas and Mindanao, ADB on cleaner production, US-AEP on clean technologies and greening the supply chain, and World Bank's Metropolitan Environmental Improvement Program on urban concerns, including municipal waste.

Only the PRIME Project and the Philippine Business for the Environment have active industrial ecology activities. However, these are limited efforts and they mainly serve companies in Luzon, particularly in the Metropolitan Manila region.

In addition, previous and present programs emphasise manufacturing sectors and have minimal participation of agribusiness.

A study must therefore put together the results of these various projects, examine trends, and see how zero emission can be encouraged to complement environmental management in a large scale. The study will

2.6 Study schedule

The study is proposed to last one year:

Apr 2001	Mobilisation of experts. consultation with government and private sector stakeholders, initial evaluation
May 2001	Inception report; start of detailed research in major agribusiness and industrial areas in Metro Manila, Luzon, Visayas and Mindanao; start of training.
Jun 2001	Establishment of demonstration sites
Oct 2001	Progress report.
Feb 2002	First draft development study
Mar 2002	Final development study

2.7 Expected major outputs of the study

Inception report at the end of 1st month (10 copies), progress report in 6th month (10 copies) and final development study in 12th month (20 copies)

Replicable demonstration projects (number and locality to be determined by project management and Japanese experts)

Trained Board of Investments staff (at least 10 staff with in-depth training; and all BOI staff to have attended at least one environmental seminar to be held by Japanese experts). These staff should be able to advise investors and other businesses in possible applications of zero emission and environmental management system in their enterprises. Those with in-depth training (seminars and on-the-job training) should be able to hold lectures later on these topics for general audiences. Training will cover BOI staff in Metro Manila and regional offices.

Trained participants from selected partner companies, local government units and other government bodies like the Department of Agriculture. Number will depend on target sites that the JICA and BOI will establish after the initial evaluation.

2.8 Possibility to be implemented / Expected funding resources

There is a strong possibility for successful implementation, given the interest shown by industry in voluntary environmental management. Experiences in PRIME showed that companies voluntarily do environmental management if they know its positive impact on the bottom line. This is different from the conditions in the 1980s and 1990s when companies merely reacted to regulatory pressures.

Executing the research, particularly gathering waste characterisation data from companies is expected to be successful since the Board of Investments is perceived to be non-threatening (vis-à-vis regulatory agencies). Regional Board of Investments staff will help in facilitating the research.

The proposal is designed not to be a mere desktop study. By having demonstration sites, the research becomes action-oriented and is expected to make companies practice the concepts.

Regarding funding, the Government of Japan will be requested to sponsor the bulk of the proposed project. The Philippine government will provide counterpart staff and office space.

The private sector beneficiaries will contribute in kind (e.g. staff to implement and document EMS, meeting venues, etc). The demonstration sites will not require purchase of equipment since waste (by-product) trading and environmental management is based more on training and networking, rather than the immediate purchase of equipment.

2.9 Request of the study to other donor agencies, if any

This has not been endorsed to other funding agencies. However, this study will form a synergy with the country investments of the UNDP through the PRIME project and the USAID through the IISE and US-AEP projects.

3. Facilities and information for the study

3.1 Assignment of counterpart personnel of the implementing agency for the study

One staff of the Board of Investments Environmental Unit will be detailed full time to the project. Five staff will assist in a part-time basis.

The project overseer will be the head of the Environmental Unit.

All staff that will be assigned to the project hold a bachelor's degree. All have at least one-year experience in the Environmental Unit.

3.2 Available data related to the study

The Board of Investments possesses detailed information on the PRIME and IISE projects. Information on other environmental projects will be available at the Department of Environment and Natural Resources, Philippine Business for the Environment and the National Economic and Development Agency. Agricultural information is available at the Department of Agriculture and local government offices.

3.3 Information on the security condition in the study area

The current high security risk area in the Philippines is in Western Mindanao. However, the study areas in Mindanao will be in the agro-industrial areas of Davao, General Santos, Iligan and Cagayan de Oro, rather than in the areas of direct military activity. When necessary, a study site may be put on hold in case of increased security risk. Most of the time, though, the experts will be in Metro Manila.

In all research areas including Manila, normal precautions are expected of any expatriate for personal and property security.

4. Global issues

4.1 Environmental components

The project centers on environment and will be designed to address air and water pollution and solid and hazardous waste.

4.2 Anticipated environmental impacts by the project

This assumes that the development study will become an action-oriented program later. Pollution and solid waste are expected to be reduced in the long term. Other long-term effects are improved health of employees and communities.

4.3 Women

The project is not gender-biased. A subsequent action program arising from this development study will benefit women as employees and as residents in industrial and agricultural areas.

4.4 Project components which requires special considerations for women, if any

Not applicable. In fact, women have played a major role in managing environmental projects in the Philippines.

4.5 Poverty alleviation components of the project, if any

If the development study will become an action program later, it will contribute to poverty alleviation by making small companies more productive and by encouraging communities to participate in by-product exchange and generate entrepreneurial activities. Greatly reduced pollution will benefit worker and community health, leading to reduced health costs.

4.6 Any constraints against the low-income people caused by the project

None

5. Undertakings of the government of the Philippines

In order to facilitate the smooth and efficient conduct of the study, the Government of the Philippines shall undertake necessary measures:

- To secure the safety of the Study Team
- To permit the members of the Study Team to enter, leave and sojourn in the Philippines in connection with their assignment, and exempt them from foreign registration requirements and consular fees,
- To exempt the Study Team of taxes, duties and any other charges on equipment, machinery and other materials brought into and out of the Philippines for the conduct of the study,
- To exempt the Study Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members

of the Study Team for their services in connection with the implementation of the study,

- To provide necessary facilities to the Study Team for remittance as well as utilisation of the funds introduced in the Philippines from Japan in connection with the implementation of the study,
- To secure permission for entry into private property or restricted areas for the conduct of the study,
- To secure permission to the Study Team to take all data, documents necessary materials related to the study out of the Philippines to Japan, and
- To provide medical services as needed. Its expenses will be chargeable to members of the Study Team.

6. The Government of Philippines shall bear claims, if any arise against any member of the Japanese Study Team resulting from, occurring in the course of or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the member of the Study Team.

7. The Philippines' Department of Trade and Industry shall act as counterpart agency to the Japanese Study Team and also as coordinating body in relation with other governmental and non-governmental organisations concerned for the smooth implementation of the Study.

The Government of the Philippines assures that the matters referred to in this form will be ensured for the smooth conduct of the Development Study Team by the Japanese

Signed

Raul C Hernandez
Managing Head, Board of Investments and
Undersecretary, Industry and Investment
Department of Trade and Industry

On behalf of the Government of the Philippines

Date 3 Sept 2000

Addendum 1/2
Development Study on Industrial Environmental Management

Terms of reference of Japanese experts for study team

Minimum requirements: Experience in business environmental management
Fluency in spoken English

- Team leader (long term)

  Responsibilities:

  Oversee the development study, which will evaluate:
  - Industrial environmental management practices in the Philippines
  - Current and recent industrial environmental programmes
  - Quality and quantity of industrial and agricultural by-products ("waste")
  - Potential for by-product use, including waste to energy
  - Appropriate technology

  Program the activities of other experts
  Coordinate with institutions and companies
  Identify and oversee the demonstration projects.
  Conduct short training on zero emission and environmental management.

  Expertise required: Industrial environmental management, zero emission, research project management

- Two zero emission experts (one short term, one long term)

  Responsibilities:

  Evaluate potential for by-product use among industry and agricultural clusters particularly in north, central and southeast Luzon and the Visayas and Mindanao regions. Experts will survey available industrial and agricultural by-products.
  Establish at least one demonstration site on zero emission.
  Evaluate the feasibility of integrated resource recovery facilities.
  Conduct short training on zero emission.

  Expertise required: Zero emission, industrial environmental management

- Two environmental management experts (short term)

  Responsibilities:

  Assess industry needs and recommend action plans for environmental management.
  Collaborate in establishing at least one demonstration site on environmental management with zero emission component.
  Conduct short training on environmental management.

  Expertise required: Industrial environmental management

Note: The long term and short term experts will both conduct short training; topics will be divided among themselves based on their specific expertise.

Addendum 2/2
Development Study on Industrial Environmental Management

Estimated project costs

Experts

Salary, accommodations, per diem	(to be determined by JICA)
Japan-Philippines-Japan travel	(to be determined by JICA)
Local travel fare estimates	PHP 400,000

- Mindanao (most likely Davao, Cagayan de Oro, General Santos)
- Visayas (most likely Cebu, Bacolod, Iloilo, Tagbilaran, Tacloban)
- Other air and land trips (northern, central and southern Luzon e.g. San Fernando, Baguio, Legaspi)

Consultation and training

Regional consultations cost estimate	PHP 120,000
Training cost estimate	PHP 100,000
Local staff travel estimate	PHP 62,000
Reports, communication, office supplies	PHP 100,000

Total estimate (excluding fees, per diem and overseas travel of experts)	PHP 782,000
Equivalent to	Yen 1,845,000 (as of 31 August 00)