PD-ABW-493

# EVALUATION OF THE US-ASIA ENVIRONMENTAL PARTNERSHIP

*Submitted to:*

**U.S. Agency for International Development**

*In Response to:*

**Task Order # 05 Under Evaluation IQC**
**AEP-I-00-00-00023-00**

*Authors:*

**Donald Dembowski**
**Sean Walsh**

*Submitted by:*

**Development Associates, Inc.**
1730 North Lynn Street
Arlington, VA 22209-2023

**June 7, 2002**

A

# TABLE OF CONTENTS

# EXECUTIVE SUMMARY

## THE GOAL AND OBJECTIVES OF THE PARTNERSHIP

The US-AEP was formed in January 1992 under an Executive Order signed by President George H. Bush. The intent of the Order was to "harness U.S. expertise" and address the serious environmental problems that are emerging in a number of Asian countries due to sustained population increases, extensive urbanization, and rapid economic growth.

In its early years, the US-AEP focused on establishing a recognized presence in Asia. It developed a wide network of partners and moved aggressively to implement an action plan. In 1997, the notion of promoting "a clean revolution in Asia" surfaced and under the rubric of an US-AEP Results Framework, became the program's overall goal. Strategically, this led to efforts to forestall further deterioration of environmental conditions in Asia at all levels of engagement and to work to bring industrialization, urbanization and environmental protection programs into alignment so that sustainable growth in the Asian economies could be achieved.

In terms of program-level activities, this meant focusing program resources on the achievement of four objectives: improved public policy and environmental regulations; improved urban environmental management; improved industrial environmental performance; and the increased transfer of U.S. environmental technology, expertise, and practices to Asian countries to effect needed environmental improvements.

## PURPOSE OF THE EVALUATION

USAID is currently undergoing a process of reorganization, which has included sector portfolio reviews that are being chaired by the Deputy Administrator. The purpose of the reviews is to determine whether activities should be phased out or continued and, if continued, where in the Agency they will be managed. This evaluation is meant to help inform Agency decision making by assessing one of the ANE Bureau's largest environmental programs and by answering questions as to which US-AEP activities are of highest priority to USAID and should be continued, and which should be transferred to other agencies, modified or terminated.

## OVERALL ACCOMPLISHMENTS OF THE US-AEP

Since being formed in 1992, the US-AEP has successfully:

- helped to broaden awareness of the need to address Asia's environmental problems
- pointed up the need for assistance efforts to be targeted and focused on specific environmental problem areas if they are to be effective
- established a network of partners in both Asia and the U.S. equipped with the knowledge, resources, leadership capacity, and tools to work effectively towards solving Asia's environmental problems

- established the kind of flexible program management structure that is needed to ensure the effective implementation and coordination of environmental improvement efforts at the regional and country levels
- contributed significantly to U.S. sales of U.S. environmental technologies; through US-AEP over 700 Asian firms were successfully matched with U.S. exporters

US-AEP has formed 195 U.S.-Asia partnerships since the program began. Through its partnership with the Council of State Governments (CSG), 36 projects have been undertaken involving 23 states and 110 state agencies.

Through its partnership with the National Association of State Development Agencies (NASDA), US-AEP has provided small matching grants to small and medium-sized U.S. firms (SME's) to market their environmental goods and services in ways that build capacity in Asia. The program made grants that generated over $350 million in export revenues.

The Environmental Exchange Program (EEP) funded by the US-AEP and administered by the Institute for International Education (IIE) has facilitated meetings, tours, and information exchanges for some 4,223 Asian and American decision makers

## US-AEP REGIONAL AND FIELD-LEVEL ACCOMPLISHMENTS

### *The establishment of a Regional Environmental Center for Livestock Waste Management in Taiwan*

US-AEP led and organized a partnership of American equipment manufacturers and a consortium of five U.S. universities to design in concert with Asian participants, an innovative livestock waste treatment system that uses the latest American equipment and technology. The consortium has just completed technical performance testing of the innovative system, and has predicted that it will change the landscape of livestock management not only in the U.S. and Asia, but worldwide, in the next decade

### *The Water Efficiency Team (WET) project in Indonesia*

Initiated by US-AEP in FY 1999, the project is designed to help fragile municipal water distribution enterprises achieve financial sustainability. It attracted USAID Mission follow-on funding and to date, the project has enabled more than 370,000 community residents to receive piped water.

### *Improving air quality in Thailand*

For the past three years, the Maryland Department of the Environment has been working in partnership with the Thai Government's Pollution Control Department, USEPA, US-AEP, and the Thai government's Entrain program to design a model for air quality planning that would enable local officials in Chiang Mai to identify areas that were sources of air pollution. This would, in turn, enable community residents to take action to reduce the pollution. As a result of the success of the model, Thailand is gradually shifting responsibility for air quality management from federal control, to its provinces and municipalities.

### *Technology export opportunities*

US-AEP is continuing to alert U.S. firms regarding technology export opportunities related to implementation of the ADB-funded $175 million Pasig River Rehabilitation Project.

### *Passage of a Clean Air Act in the Philippines*

Passage of the Clean Air Act in 1999 is pressuring industry and government to take steps to decrease emissions and to increase monitoring. Under the umbrella of the Clean Air Act and the ADB-funded Metro Manila Air Quality Improvement project, US-AEP and USEPA spearheaded a public outreach campaign on the phase out of leaded gasoline and are helping to promote public acceptance of the Act

## THE EXTENT TO WHICH THE US-AEP "PARTNERSHIP APPROACH" HAS BEEN EFFECTIVE IN ACHIEVING RESULTS AND IN ADVANCING USAID DEVELOPMENT GOALS IN THE ANE REGION

US-AEP began in 1992 with a vision to approach development assistance in two new ways. One was to tie development to U.S. exports, in order to incorporate environmentally beneficial technologies from the U.S. into Asia's burgeoning stock. The second was to create partnerships that would continue to promote sustainable development, beyond the reach and longevity of development assistance programs, and thereby draw upon the resources and experience of public and private organizations that would not otherwise be engaged in the development assistance process.

The overall accomplishments cited in Sections II.A and II.B of the Main Report attest to the extent to which the US-AEP "partnership approach" has been effective in achieving these results. The approach has been particularly effective in facilitating interaction between public and private entities; in making arrangements for broad-based participation in conferences and workshops; and in expediting the replication across country lines of successful and replicable activities, such as the Regulatory Dialogue and country efforts to phase out leaded gasoline.

## THE EFFECT OF THE DECISION BY THE DEPARTMENT OF COMMERCE TO TERMINATE ITS PARTICIPATION IN US-AEP ACTIVITIES

Almost from its inception, US-AEP and the Department of Commerce (DOC) have jointly funded the Technology Representatives (Tech Reps) stationed in Asian countries. Accordingly, the effect of the decision by the DOC to terminate its participation in US-AEP activities as of September, 2002, has been to disrupt what was shaping up to be the timely emergence of the kind of institution that will be critically needed over the next several decades to address the serious environmental problems currently emerging in a number of Asian countries.

# CONCLUSIONS

The US-AEP, through its "partnership approach", has been successful in mobilizing U.S. expertise and using it effectively to address the "serious environmental problems in Asia". It has, accordingly, achieved its initial goal.

The current US-AEP strategy of directing program resources to activities whose objectives are bringing about better public policy and environmental regulation; improved urban environmental management; improved industrial environmental performance; increased transfers of environmental technology, expertise and practices through trade and investment; greater involvement of civil society in environmental matters; and improvement in energy efficiency, seems well suited to both the environmental needs of the countries in which it is operating and to its own capabilities.

The Team considers the US-AEP to have been cost effective in its operations to date, and a model for USAID advancement/achievement of its environmental goal. This judgement reflects:the US-AEP's relatively low program cost of $15 to $17million per annum.

The "clean revolution", which has emerged recently as the US-AEP's current goal, needs to be seen as a revolution – one directed at bringing equivalency to environmental concerns and putting them on a par with economic growth and social benefits requirements in the allocation of USAID development assistance resources.

## RECOMMENDATIONS AS TO FUTURE US-AEP OPERATIONS

The Evaluation Team recommends that the US-AEP program remain within the management structure of the ANE Regional Bureau for the foreseeable future. Team interviews confirmed that regional identity, and responsiveness to differences across regions have been important to the program's success. In so doing, the ANE Bureau should modify the program's organizational structure and mode of operation, as needed to convert it into a field-driven operation.

Specifically, the Team recommends that the ANE Bureau establish one or more regional US-AEP offices in Asia to provide direct supervision of contract and local staff and to continue to improve coordination with the environmental improvement programs being implemented by USAID Missions and the ADB, and by other national and international organizations operating in the region.

The Team recommends that the ETNA trade leads activity be transferred to the EGAT Bureau and merged with other such initiatives. Also, that the US-AEP continue its efforts to engage the five ADCs in environmental improvement activities in the LDCs. The ANE Bureau should ensure that the US-AEP program continues to be given the high-level of support by USAID that is required, if it is to achieve its current environmental goals and objectives.

The Evaluation Team believes that it is essential to the continued success of the US-AEP program that EPA technical staff become more active in providing information and advice to US-AEP and beneficiary countries, particularly regarding appropriate environmental technologies, and that it be more forthcoming in providing technical support services. The MOU between the US-AEP and the EPA should be updated accordingly. The Team heard a number of complimentary remarks, during its field interviews, regarding the quality of the technical services provided by EPA field staff; however, these remarks were coupled with comments to the effect that EPA field operations were not very well funded, limiting their availability.

The US-AEP Executive Director should strive to keep a narrow focus on the scope of program activities. As suggested earlier, bringing about the greater involvement of civil society in

environmental matters should be dealt with as an integral component in the five other areas of program focus, and should not be identified and managed separately. During its field visits, the Evaluation Team noted that there is considerable scope in client countries for the near-term expansion of US-AEP activities relating to the bringing about of better public policy and environmental regulations; and to the improvement of urban environmental management in Asia's rapidly expanding urban centers. In this regard, there appears to be considerable concern among Asia's urban planners that the environmental problems of the high levels of water and air pollution emanating from small and medium-scale industries in urban areas are not being adequately addressed by organizations such as the US-AEP. Steps should be taken to ensure that these problems are addressed.

# LIST OF ACRONYMS

| | |
|---|---|
| A&WMA | Air and Waste Management Association |
| ACEC | American Consulting Engineers Council |
| ADC | Advanced Developing Country |
| ADB | Asian Development Bank |
| AIT | American Institute in Taiwan |
| ANE | Asia and Near East Bureau (USAID) |
| APEC | Asia-Pacific Economic Cooperation |
| ASEAN | Association of South-East Asian Nations |
| CSG | Council of State Governments |
| CTEM | Clean Technology and Environmental Management Program |
| EGAT | Economic Growth, Agriculture, and Trade |
| EMS | Environmental Management System |
| EPA | U.S. Environmental Protection Agency |
| EPIQ | Environmental Policy Indefinite Quantity Contract |
| ETNA | Environmental Technology Network for Asia |
| EU | European Union |
| FCS | U.S. Foreign and Commercial Service |
| GDA | Globval Development Alliance |
| GIN | Greening of Industry Network |
| GTN | Global Technology Network |
| ICLEI | International Council for Local Environment Initiatives |
| ICMA | International City/County Managers Association |
| IIE | Institute for International Education |
| IIEC | International Institute for Energy Conservation |
| IPCC | Intergovernmental Panel on Climate Change |
| IQC | Indefinite Quantity Contract (USAID) |
| IR | Intermediate Result (USAID) |
| IRG | International Resources Group |
| ISO | International Organization for Standardization |
| ITRI | Industrial Technology Research Institute |
| LAC | Latin America and Caribbean Bureau (USAID) |
| LDC | Lesser Developed Country |
| LGU | Local Government Unit (Philippines) |
| MOU | Memorandum of Understanding |

| | |
|---|---|
| NASDA | National Association of State Development Agencies |
| NGO | Non-Governmental Organization |
| NPPR | National Pollution Prevention Roundtable |
| OECD | Organization for Economic Cooperation and Development |
| OPIC | Overseas Private Investment Corporation |
| OPF | Overseas Program Fund (NASDA) |
| PADCO | Planning and Development Collaborative |
| PAG | Program Advisory Group (US-AEP) |
| PROPER | Program for Performance Rating |
| PSC | Personal Services Contractor |
| PVO | Private Voluntary Organization |
| RHUDO | Regional Housing and Urban Development Office (USAID) |
| SCO | Senior Commercial Officer |
| SME | Small and Medium Enterprise |
| TDA | U.S. Trade Development Agency |
| TPCC | U.S. Trade Promotion Coordinating Council |
| TSSC | Technical Support Services Contract |
| UNDP | United Nations Development Program |
| UNEP | United Nations Environment Program |
| US&FCS | U.S. Foreign and Commercial Service (U.S. Dept. of Commerce) |
| USAID | United States Agency for International Development |
| US-AEP | United States-Asia Environmental Partnership |
| USDOC | United States Department of Commerce |
| USG | United States Government |
| WEC | World Environment Center |
| WEF | Water Environment Federation |
| WRI | World Resources Institute |
| WTO | World Trade Organization |

# EVALUATION OF THE US-ASIA ENVIRONMENTAL PARTNERSHIP

## FINAL REPORT -- MONDAY, JUNE 11TH, 2002

## I. INTRODUCTION

### A. THE GOAL AND OBJECTIVES OF THE U.S.-ASIA ENVIRONMENTAL PARTNERSHIP (US-AEP)

The US-AEP was formed in January 1992, under an Executive Order signed by President George H. Bush. The intent of the Executive Order was "to harness U.S. expertise to address the serious environmental problems in Asia". The action plan that was to be developed, pursuant to the Executive Order, was to address the four environmental problems that presented the greatest immediate threats to the region. These included water quality and wastewater management; solid and toxic waste management; air pollution from industry, transportation and energy production; and deforestation and loss of bio-diversity. The Executive Order noted that the effect of this undertaking would be to enhance export and other commercial opportunities in Asia for U.S. businesses.

The action plan was to encompass four types of activities. USG loan guarantees were to be issued and funds for feasibility studies provided to private sector firms for the development of environmental infrastructure, including the production of lead-free fuels. Environmental business centers were to be established in selected Asian countries that would feature trade exhibits on U.S. environmental equipment and services. Fellowships were to be provided for two-way exchanges of scholars and senior level managers, to identify solutions to pressing pollution and conservation problems in Asia. A regional network was to be established to help conserve Asia's biological diversity and its unique forest and marine resources.

In its early years, the US-AEP focused on establishing a recognized presence in Asia. It developed a wide network of partners who shared its objectives, and moved aggressively to develop an action plan that addressed the broad range of technical and management issues related to the four environmental problem areas noted above. In so doing, it used a variety of tools and approaches that included conferences, workshops and training seminars, technical and managerial exchanges, and small grant programs. US-AEP worked to establish close ties with the U.S. Department of Commerce (DOC) and with the U.S. Environmental Protection Agency (EPA), in order to advance the development of trade ties and environmental leadership interests between the United States and Asian countries.

Gradually, the thrust of the program was shifted from promoting trade and the sale of U.S. environmental technologies, services and equipment, to implementing discrete activities aimed at putting the region on an "environmentally sustainable pathway of long-term economic growth". In 1995, the program began to focus increasingly on pollution prevention and on promoting the use of energy-efficient products, processes, and services. It launched the Clean Technology and Environmental Management (CTEM) Program to engage Asian industries in the adoption of pollution prevention principles. Greater emphasis was given to the development of an overall policy framework for environmental improvements, and on implementing environmental policies at the

national and provincial levels. Bio-diversity was dropped from its action agenda, as were activities in the energy sector.

In 1997, the notion of promoting "a clean revolution in Asia" surfaced and, under the rubric of the US-AEP Results Framework (Exhibit 1), became the program's overall goal. Strategically, this meant that the US-AEP needed to bolster its efforts to forestall further deterioration of environmental conditions in Asia, at all levels of engagement, and work to bring industrialization, urbanization and environmental protection programs into alignment, so that sustainable growth in the Asian economies could be achieved. In terms of program-level activities, this meant focusing program resources on the achievement of four main objectives: improved public policy and environmental regulations; improved urban environmental management; improved industrial environmental performance; and the increased transfer of U.S. environmental technology, expertise, and practices to Asian countries to effect needed improvements.

Achieving these objectives also required that emphasis be given to maintaining sustained contact with the key people, institutions, and forces that constituted the drivers behind efforts to bring about the clean revolution, including in particular the leaders and residents of the communities involved. It also meant taking action to increase the capacity of Asian governments to develop sound public policies and regulatory regimes, identify options that might be pursued to solve on-site urban and industrial environmental problems; and expedite the investments and technology transfers needed to reduce urban and industrial pollution.

## B. PURPOSES OF THE EVALUATION

USAID is currently undergoing a process of reorganization, which has included sector portfolio reviews that are being chaired by the Deputy Administrator. The purpose of the reviews is to determine whether activities should be phased out or continued and, if continued, where in the Agency they will be managed. This evaluation is meant to help inform Agency decision making, by assessing one of the ANE Bureau's largest environmental programs and by answering questions as to which US-AEP activities are of highest priority to USAID and should be continued, and which should be transferred to other agencies, modified or terminated.

The US-AEP program has been subjected to several evaluative reviews and assessments over the past ten years. It underwent a comprehensive mid-term assessment in February 1995. In response to direction from the ANE Bureau, the Secretariat also organized an external review of the program that was undertaken in 1997. In addition, a management assessment of how the US-AEP operates was undertaken in September 1998, through a contract issued by USAID Office of Procurement, at the request of the Executive Director at that time. A series of reports on nine major evaluations of individual components of the US-AEP that had been conducted during the previous year, as well as a summary report of the nine evaluations, were published in June 1999. The present evaluation is focused on assessing program accomplishments since the mid-term evaluation, and covers the period from 1995 to the present.

Several of the findings contained in the Final Report of the 1995 mid-term evaluation, form a useful context to the present evaluation and bear repeating. It was noted, for example, in the Executive Summary of the mid-term evaluation, that the "US-AEP is distinct from traditional USAID programs in that it did not identify site-specific objectives against which resources could be programmed.

Instead, US-AEP concentrated on brokering linkages between U.S. businesses, government agencies, and non-governmental organizations to support the transfer of U.S. environmental technology and management skills to Asia".

It was also noted in the report that, "although US-AEP serves multiple clients – including USAID bilateral missions, Asian governments, and the U.S. private sector – the program has often been perceived as being primarily a technology transfer program, albeit one that operates within the environmental sector. This is not surprising, given that a majority of US-AEP program implementers have as their primary constituents the U.S. private sector, and that the program's most prominent presence in Asia is through the Technology Representatives, whose mandate is to support U.S. to Asia environmental technology transfer .".

Two of the main conclusions drawn by the mid-term evaluation team also bear repeating. For one, the team concluded that the "US-AEP is sufficiently novel within USAID so as to be incongruent with key elements of USAID procedure". US-AEP, by not having programmed site-specific environmental objectives, has caused some tension between it and the ANE Bureau, and has left the program vulnerable to perceptions that it lacks "a sufficiently focused strategy". Secondly, the team also noted as a second conclusion that, "there is a widespread view, shared by the (mid-term) evaluation team, that US-AEP's image and impact would benefit from additional clarity in its goals, objectives and strategy. While almost certainly requiring some narrowing of the program's scope, effort should be made to do so in ways that do not unduly limit the program's current operational flexibility and entrepreneurial character".

It is clear from the present Development Associates (DA) evaluation team's assessment of US-AEP performance that, the several shortcomings noted in the mid-term evaluation have been rectified. There is still a lingering misperception, however, that the US-AEP program is concentrated on "brokering linkages between U.S. businesses, government agencies, and non-governmental organizations to support the transfer of U.S. environmental technology and management skills to Asia".

# II. ACCOMPLISHMENTS OF THE US-AEP

## A. OVERALL ACCOMPLISHMENTS

Since being formed in 1992, the US-AEP has been successful in a variety of ways in mobilizing U.S. expertise and in focusing the program on addressing the serious environmental problems in Asia.

### *1. The US-AEP has helped to broaden awareness of the need to address Asia's environmental problems*

US-AEP has contributed to the expanded awareness of Asia's environmental problems through the use of exchanges of information, workshops, seminars, and conferences. These activities have been aimed primarily at government decision-makers. They have helped to publicize the need for governments to create an enabling environment for environmental improvement at the regional, national and local levels. Since 1997, this has been a key focus of US-AEP activities.

2. ***It has pointed up the need for assistance efforts to be targeted and focused on specific environmental problem areas - if such efforts are to be effective***

Currently, US-AEP assistance activities are focused on bringing about better public policy and environmental regulation; improved urban environmental management; improved industrial environmental performance; increased transfers of environmental technology, expertise and practices, through trade and investment; greater involvement of civil society in environmental matters; and improvements in energy efficiency.

3. ***It has established a network of partners, in both Asia and the U.S., equipped with the knowledge, resources, leadership capacity, and tools needed to work effectively towards solving Asia's environmental problems***

Almost from its inception, US-AEP has had Technology Representatives (Tech Reps), funded in conjunction with the U.S. Department of Commerce, as well as Urban Infrastructure Representatives stationed in Asian countries; it has maintained a small technical support/field headquarters office in Manila. In 1996, US-AEP signed an Inter-Agency agreement with the U.S. Environmental Protection Agency to provide technical support and leadership in the areas of policy development, regulatory support, industrial compliance and technical assistance, urban pollution reduction, and urban infrastructure. Other important partners in the US-AEP network include the Council of State Governments (CSG), and the National Association of State Development Agencies (NASDA). In recent years, US-AEP has also been successful in establishing close and mutually beneficial partnerships with the environmental offices of the Asian Development Bank in Manila and with the Environmental and Social Development Unit of the World Bank in Bangkok.

4. ***The US-AEP has employed a broad array of motivational tools to generate and sustain partner interest and participation in Asian environmental improvement activities, to ensure that resources are targeted on designated problem areas, and to promote synergism among program participants***

US-AEP has formed 195 U.S.-Asia partnerships since the program began. Over 4,300 institutions in the U.S. and Asia have participated in US-AEP exchange and study tour programs. Through its partnership with the Council of State Governments (CSG), 36 projects have been undertaken involving 23 states, 110 state agencies, 35 academic institutions, and several dozen NGOs.

Through its partnership with the National Association of State Development Agencies (NASDA), US-AEP has provided small matching grants to small and medium-sized U.S. firms (SME's) to enable them to market their environmental goods and services in ways that build capacity in Asia. The program made grants in 46 states; these grants generated over $350 million in export revenues and led to the creation of more than 850 new U.S. jobs.

The Environmental Exchange Program (EEP), funded by the US-AEP and administered by the Institute for International Education (IIE), has facilitated meetings, tours, and information exchanges for some 4,223 Asian and American decision makers. In Asia, the extent of US-AEP partners is reflected in the scores of partnership arrangements, or Memoranda of Understanding, established between American states and Asian provinces, municipalities, universities, trade associations, and

NGOs, and also joint venture arrangements between Asian and American private sector companies. All are producing a desired multiplier effect in promoting US-AEP's policy agenda and program initiatives.

### 5. *US-AEP has established the kind of flexible program management structure that is needed to ensure the effective implementation and coordination of environmental improvement efforts, at the regional and country levels*

Over time, US-AEP's mode of operation has become more focused and structured, while retaining the capacity to be flexible in situations where flexibility is required.

#### a. The Secretariat

The Secretariat provides overall policy guidance in the design of the US-AEP's diverse program and coordinates the activities of its many implementing partners. It is responsible for developing and managing the US-AEP budget. Its staff members serve as liaison with its federal agency partners, and specifically with the U.S. Department of Commerce (DOC) and the U.S. Environmental Protection Agency (EPA). One of the Secretariat's staff members serves as the Contract Technical Officer (CTO) for US-AEP partners, whose services are acquired through contracts, such as the Louis Berger Group, Inc.; the Planning and Development Collaborative (PADCO); and the Institute for International Education (IIE). Secretariat staff members serve as Country Coordinators for all US-AEP activities which are implemented in Asian countries, and in which the US-AEP maintains a presence. They also perform the day-to-day monitoring of the activities of partners, whose services have been acquired through Inter-Agency agreements and through Cooperative Agreements.

#### b. Program Advisory Groups

Four Program Advisory Groups (PAGs) advise the Secretariat and its partners on the achievement of sector program goals and objectives. Membership in the PAGs includes representatives of all the partners whose activities contribute either directly or indirectly to the achievement of each sector program's goals and objectives. Each group is chaired by a member of the Secretariat, and is required to monitor the implementation of programs and activities and advise the Secretariat on the extent to which program objectives are being achieved. The Groups also provide input to and assess country and regional strategies and work plans, to ensure that program activities are being appropriately targeted to achieve expected results.

#### c. Field staff

Technical representatives were traditionally considered to be the core of the country teams, but other modes of staffing have been worked out in different countries in response to local conditions and to job requirements. In Indonesia, because it was difficult to find and keep technical representatives, a temporary position was created to handle the most urgent tech duties (receiving visitors, advancing urgent development programs, and responding to requests from other US-AEP offices). The position gradually became known as that of the Coordinator.

***6. US-AEP has developed an overall strategic plan and country-specific strategies to guide the development and implementation of environmental improvement activities and programs***

According to the US-AEP's Policy and Procedures Handbook, US-AEP prepared a Strategic Plan in May 1995, covering the period, 1995-2000. It has not as yet been updated, however, whereas US-AEP objectives have gone through various significant changes since the Plan was developed.

As noted earlier, the US-AEP currently has only one goal - " to promote a clean revolution in Asia"; and it has only one Strategic Objective - "sustained impact on the key people, institutions, and forces that drive the movement to a clean revolution in Asia". Accordingly, the US-AEP Results Framework, which is attached hereto as Exhibit 1, also serves as the program's strategic framework.

***7. US-AEP has developed a program review system, whereby the country strategies are updated annually and accompanied by annual work plans that set forth the country-level activities that are to be implemented each year***

The DA Evaluation Team found the country strategy that had been prepared for inclusion in the FY 2001 Work Plan for Thailand, and the Work Plan itself, to provide excellent examples of how the system is supposed to work. A copy of the US-AEP Thailand Program Strategy Framework, which was incorporated in that country's FY 2001 Work Plan, is attached hereto as Exhibit 2.

***8. US-AEP has arranged for private contractors to provide the technical services and managerial support needed to assist in the implementation of the regional and country-specific strategies***

Until last September, the International Resources Group (IRG) served as the Technical Services Support Contractor (TSSC) for the US-AEP, and provided a wide range of logistic, communications, and staff support services to the US-AEP Secretariat. Although there was a dispute over the awarding of a new TSSC contract last September, which is to be re-bid - a team from The Louis Berger Group, Inc. has served in that capacity since last September.

***9. US-AEP has developed tracking systems that monitor program implementation and impact, and that provide feed back on the outcome and results of program-funded activities, enabling program managers to assess the outcome of these activities and share with others the results and best practices***

In view of the incremental approach the US-AEP takes in implementing environmental improvement activities, and in view of the disparate nature of most of these activities, the USAID R-4 Results Reporting Framework appears to be well suited to the way that the US-AEP operates. Any plan to re-institute the Framework-based reporting system, however, should ensure that site-specific indicators are substituted for those that were being used.

### *10. The US-AEP program has contributed significantly to increased sales of U.S. environmental technologies*

One of the cornerstones of the US-AEP strategy for advancing Asia's sustainable development goals is to promote the transfer of environmental technologies and practices to Asia through U.S. private sector trade and investment channels. Accordingly, US-AEP has established procedures to match the needs of Asian countries for environmental technologies with U.S. environmental technology providers.

US-AEP data indicate that, since its inception, the US-AEP Technology Transfer Trade and Investment program has matched over 700 Asian and U.S. stakeholders for the successful transfer of environmental technologies. This has been accomplished largely through training programs, workshops, exchanges, and small grants. It has been arranged through an extensive network of state trade offices, state development associations, world trade centers, and trade associations from 45 different states.

## B. US-AEP REGIONAL AND FIELD-LEVEL ACCOMPLISHMENTS

The Evaluation Team found US-AEP field-level accomplishments, in particular, as providing a good indication of the extent to which environmental problems are being successfully addressed through US-AEP activities. They also provide a good indication of the synergy developed among the U.S. and Asian partners engaged in these activities. A listing and brief summary of several recent US-AEP regional and field-level success stories is contained in Exhibits 3-8 attached hereto. Among those cited are the following:

### *1. The Asia Region*

**The establishment of a Regional Environmental Center for Livestock Waste Management in Taiwan**

In 1996, during a US-AEP needs assessment, the problem of treating livestock wastes was cited as a top environmental priority in the agribusiness sector in Asia. As a result, US-AEP led and organized a partnership of American equipment manufacturers and a consortium of five U.S. universities to design, in concert with Asian participants, an innovative treatment system that uses the latest American equipment and technology. The National Pingtung University of Science and Technology in Taiwan agreed to be the venue for the newly established Center. American equipment manufacturers contributed an estimated $500,000 of their technologies and services, while US universities contributed about $60,000 in engineering expertise. Taiwan invested nearly $2,000,000 for the construction and operation of the Center. The five American universities that participated have just completed technical performance testing of the innovative system, and have predicted that it will change the landscape of livestock management, not only in the U.S. and Asia, but worldwide, in the next decade. Further details concerning this activity are contained in Exhibit 3 and 4.

**Expanding regulatory dialogue in Asia**

Under the Environmental Regulatory Dialogue program, the US-AEP, the U.S. Environmental Protection Agency (EPA), and the World Bank and other donors are working to expand dialogue on

the adoption of improved environmental laws, policies and institutions. The individual participants and institutions involved in the program include Asian officials, judges, legislators, private sector business leaders, local groups, environmental groups, and universities. Each year US-AEP and its partners join with in-country agencies and organizations to implement a series of activities that support the development of draft laws, policies or regulatory action plans. Over the last two years, US-AEP has facilitated policy dialogue in Thailand, Vietnam, and the Philippines. While each country is at a different stage in policy formulation and implementation, due to varying legal, institutional, political and social structures - all exhibit a keen interest in having exchanges with regional and U.S. counterparts. Further details regarding this activity are contained in Exhibit 5.

**Urban environmental management networking through the Mayors' Asia Pacific Environment Summit (MAPES)**

US-AEP has been supportive of the MAPES since its inception in 1999. MAPES brings together more than 200 government officials, business representatives, and NGOs from Pacific Rim countries - to share information, best practice experiences, and strategies for improving urban environmental management. What makes MAPES unique is the tradition of those participating in the conference to pledge to undertake specific actions to improve environmental conditions in their localities. Pledges made by participants at a recent conference included commitments to build new wastewater and waste management facilities, to expand green space in their cities, and to develop long-term environmental plans for their communities.

### *2. Indonesia*

**The Water Efficiency Team (WET) project in Indonesia**

Initiated by US-AEP in FY 1999, the project is designed to help fragile municipal water distribution enterprises achieve financial sustainability. It attracted USAID Mission follow-on funding and, to date, the project has enabled more than 370,000 community residents to receive piped water. In a related project, also initiated by US-AEP, some 30 surveys of consumer preferences were conducted. The results of these surveys have formed the basis for developing more comprehensive water enterprise corporate plans. Further information regarding US-AEP water and wastewater initiatives in Indonesia are contained in Exhibit 6.

### *3. Thailand*

**Promoting dialogue on Alternative Dispute Resolution techniques in Thailand**

Under the Environmental Regulatory Dialogue program, the US-AEP and the U.S. Environmental Protection Agency (EPA) promote best practices, through exchanges between counterpart agencies, organizations and practitioners. In Thailand, despite the establishment of a comprehensive framework for environmental management, there are serious and on-going controversies related to industrial pollution, and the siting of municipal waste and water treatment facilities. Alternative dispute resolution (ADR) enables the settlement of disputes outside of the courts. Through ADR, parties resolve controversies through facilitation, mediation, or consensus building. For environmental disputes, ADR has proven to be an effective strategy for communities, industry and

government – in order to avoid costly and time-consuming litigation, and to build enduring partnerships. More details regarding this activity are contained in Exhibit 7.

**Improving air quality in Thailand (Maryland Department of Environment)**

For the past three years, the Maryland Department of the Environment has been working in partnership with the Thai Government's Pollution Control Department, USEPA, US-AEP, and the Thai government's Entrain program - to expand the capacity of the Thai federal and local environmental staff to address air quality challenges. One of the strengths of this project was the commitment to a strong partnership between the State of Maryland and Thailand. The partnership was exemplified by numerous exchanges. Over the past two years, Thai officials visited the U.S. nine times for onsite visits and training by Maryland's Department of the Environment. Maryland sent teams to Thailand five times to conduct training workshops and seminars. Due primarily to the strong partnership that developed, the project successfully met its goals. A model for air quality planning was developed to enable local officials in Chiang Mai to identify areas that were sources of air pollution, where the public could take action to reduce the pollution. As a result, Thailand gradually delegated the responsibility for air quality management from federal control to its provinces and municipalities. Further information concerning this activity is contained in Exhibit 8.

### *3. Philippines*

**Passage of a Clean Air Act**

The passage of the Clean Air Act in 1999 is pressuring industry and government to take steps to decrease emissions and to increase monitoring. Under the umbrella of the Clean Air Act and the ADB-funded Metro Manila Air Quality Improvement project, US-AEP and USEPA spearheaded a public outreach campaign on the phase out of leaded gasoline, which is helping to promote public acceptance of the Act. US-AEP and the ADB currently support efforts to ensure nationwide acceptance. US-AEP continues to assist in implementing the Clean Air Act regulations, specifically the establishment of air quality governing boards, as well as helping to develop rules and regulations for implementing the Solid Waste Act.

# III. IMPACT ON THE ENVIRONMENT AND ON ECONOMIC GROWTH IN ASIA

## A. IMPACT ON THE ENVIRONMENT

### *1. Direct environmental impacts due to US-AEP interventions*

**The long-term impact of US-AEP efforts to improve public policies and environmental regulations**

The recent ADP report, "Emerging Asia: Changes and Challenges", concludes that environmental degradation in the Asia and Pacific region has above all been a failure of policy and institutions. From this perspective, the US-AEP's efforts, along with those of the U.S. Environmental Protection

Agency (EPA), as well as the World Bank and other donors, to expand dialogue on the adoption of improved environmental laws, policies and institutions cited earlier - have been right on target.

Effective policies and laws can have far-reaching, direct, long-term impacts on the environment, human health and economic growth. The US-EAP Environmental Regulatory Dialogue is a field-based regional public policy initiative that catalyzes reform efforts, through targeted assistance to senior agency officials, legislators, environmental groups, and the media. A visit to the U.S. by Thai officials, along with follow-on workshops, contributed to the development of a ground breaking Public Consultation Law that directly engages the public in environmental decisions. Similar policy and regulatory reform efforts are also currently being pursued by US-AEP on an accelerated basis in Indonesia.

Through agency to agency exchanges with Thailand, Vietnam's National Environmental Agency is drawing on Thailand's experience and successes in this area, and is incorporating international best practices in its new Environment Fund. The Environment Fund will provide incentives for environmental investments and regulatory enforcement.

US-AEP collaboration with the Philippines Lake Laguna Development Authority has led to the implementation of an action plan for community based clean up and regulatory enforcement, through River Councils established by the Authority in 18 of the lake's 24 sub-basins. The collaborative efforts of the US-AEP and the Development Authority complement new World Bank pilot lending to strengthen the Authority's overall environmental capabilities.

**The direct impact of technology transfers and investment on economic growth and the environment**

US-AEP's Technology Trade and Investment program is driven by the needs of Asian public and private stakeholders to achieve continued robust economic growth without negatively impacting the environment. By effectively matching the U.S. environmental industry with Asian public and private sector shareholders, the program has impacted every major environmental sub-sector, from water and wastewater treatment to hazardous and medical waste, to municipal solid waste, to industrial clean production, to mobile and stationary air pollution. The program has also had a beneficial impact on the health and economic well being of a significant segment of Asia's growing population and the environment they live in. Two examples of how US-AEP has successfully matched American technologies to Asia's needs include:

- Arsenic removal from contaminated wells in West Bengal and Bangladesh, through the use of compact water treatment systems developed by an American firm.

- Use of a patented plasma technology to treat 20 thousand tons of stockpiled hazardous waste in Malaysia. This was the first use of plasma technology, which does not generate hazardous byproducts of incineration, to treat hazardous waste in Asia.

## 2. *The extent to which US-AEP has influenced decision-makers to adopt, develop and disseminate sound urban and industrial environmental management policies and practices, such as clean production*

In virtually all of the countries in which it has operated, the US-AEP has influenced decision-makers to adopt, develop and disseminate sound urban and industrial environmental management policies and practices. The results of these efforts are summarized below.

### The targeted impact on urban residents of US-AEP efforts to improve urban environmental management

US-AEP has helped to strengthen some 66 non-governmental associations (NGOs) and networks in the U.S. and Asian countries; these associations have been organized around Asian urban environmental management issues. US-AEP also supports a number of professional environmental associations, such as the Solid Waste Association of the Philippines and the Indonesia Association of Sanitation Engineers. Similar associations assisted by US-AEP in India, have a membership base of over 1,000 urban environment management groups. Many millions of urban community residents will benefit from the efforts of these groups to guide local governments in the direction of environmentally sound and sustainable economic growth.

### The success of US-AEP efforts to improve industrial environmental performance through the spread of due diligence practices

Throughout Asia, the industrial sector accounts for an increasingly larger share of overall growth, with most of that growth being financed by private sector debt financing. US-AEP has recognized that how Asian countries manage these funds is critical to sustainable development. US-AEP, acting on that insight, has nurtured multi-year partnerships with key banks and with the Association of Development Finance Institutions of the Asia Pacific, to promote environmental due diligence with investment committees. The results to date have been impressive. In the Philippines, for example, the Land Bank has set up a specific Environmental Unit tasked with environmental analysis of all project financing; expanded their capacity to finance waste and water projects; and incorporated environmental factors into its lending operations. In addition, the Development Bank of the Philippines, one of the country's largest financial institutions, is applying a code of environmental conduct for all banks that borrow from them. In Sri Lanka, credit procedures were revised at the Bank of Ceylon to include environmental factors.

### The success of US-AEP efforts to improve energy efficiency through strengthened advocacy efforts

Two new trade associations of energy efficiency companies in Thailand were created with assistance from US-AEP in FY 2000 and 2001. One, the Energy Efficiency Development Alliance (EEDA), consists of large firms while the other, the energy Conservation Entrepreneurs Association (ECEA) consists mainly of individual professionals and smaller firms providing energy efficiency services. These associations provide an established platform from which energy efficiency businesses can work with the government on public policy and publicize the advantages of efficiency to the general public. The goal of US-AEP assistance efforts is to bring these two associations to the point where

they become influential, self-sustaining forces in Thailand, advocating energy efficiency over the long term. This goal is taking shape, as the two associations are gradually being recognized by the Government of Thailand as reliable sources of expertise and advice.

## B. IMPACT ON ECONOMIC GROWTH IN ASIA

The ADP report, "Asian Environmental Outlook 2001", notes that expenditures on environmental programs in Asian countries have rarely exceeded 1 to 2 percent of their Gross Domestic Product (GDP). To meet the environmental program needs of the region, the report indicates that expenditures of at least 7 percent of the GDP will be required. It states that there is little evidence that such increases in environmental expenditures are being considered by policy makers in the region.

The ADB report further notes that informed and effective decision making requires a considerable amount of information on a wide range of environmental data and trends. However, even rudimentary environmental databases are lacking throughout the region. Systems of national accounts and other standard measures of economic performance and social well being exclude the costs and benefits associated with the use of environmental services, and thereby present a misleading picture of the economy. In any event, there appears to be little prospect that environmental accounting will become a mainstream component of development planning and national accounts in the Asia region in the near future.

In this context, the modest level of resources expended by US-AEP will likely not have a significant quantifiable impact on overall economic growth in Asia. Such impact is generally evident and usually computed on a site-specific basis. Moreover, it should be noted that the objective of the US-AEP vis-à-vis economic growth in Asia, is not so much to register measurable impact on it, one way or the other, as it is to transform the way it is achieved in terms of its effects on the environment. US-AEP's efforts are aimed at ensuring that whatever economic growth is achieved, should not be achieved at the cost of further degradation of the region's environment. .

### *1. The relationship between environmental preservation and economic growth*

As noted in the ADB's report, Asian Development Outlook 2001, current global development patterns, as perceived by the World Bank, indicate that economic globalization will intensify over the next two decades. International webs of trade, investment and market connection will deepen and become more geographically extensive. Despite concerns over globalization, international trade and market inter-connections will likely remain the development model of choice within the Asia region. The role of large, multinational corporations will continue to grow, partly through a consolidation in which industries worldwide become dominated by a smaller number of multinational corporations. Harnessing economic globalization to address the goals of poverty reduction and environmental degradation is likely to emerge as one of the greatest policy challenges facing the leaders of the ADB's developing member countries (DMCs), over the next decade.

### *2. The major direct beneficiaries of program implementation*

US-AEP has estimated that some 1,967 public and private institutions (of which two-thirds are Asian institutions) were engaged in one or more US-AEP-supported activities in FY 2001. More than half of these activities were focused in three sectors: waste water, air pollution, and industrial

environmental management. A total of 671 Asians participated in one or more US-AEP-supported educational exchanges, while 297 Asians participated in US-AEP-supported trade shows in the U.S.

An estimated 370,000 Indonesian citizens were the beneficiaries of a US-AEP program (undertaken in collaboration with USAID/Jakarta) that kept clean water flowing to fifty rural enterprises that were on the brink of bankruptcy. The citizens of Singapore will soon benefit from the construction of a new state of the art wastewater facility, for which an American company was awarded contracts to do a feasibility study and engineering design work, with US-AEP assistance.

# IV. THE EFFICACY OF THE US-AEP'S "PARTNERSHIP APPROACH"

The efficacy of the US-AEP's "partnership approach" centers around the versatility that it offers in dealing with a variety of environmental problems in a number of different cultural, economic, political, technological, and geographic settings. As indicated below, there has been a number of key adjustments over the past ten years in US-AEP's mode of operation, as it has evolved in response to changing circumstances and periodic changes in leadership. Versatility was a key factor enabling program managers to continue to operate effectively despite these adjustments.

Bearing in mind that the initial goal of the US-AEP was "to harness U.S. expertise to address the serious environmental problems in Asia", US-AEP has harnessed a broad range of U.S. expertise through its "partnership approach". While the program's American partners were of great assistance on the input side, its Asian partners were of equal value in bringing program activities to successful conclusions on the applications side.

## A. A CHRONOLOGY OF KEY ADJUSTMENTS IN THE US-AEP'S MODE OF OPERATION

Since its inception in 1992, US-AEP has been evolving in terms of its strategic objectives as well as its program focus. Initially, US-AEP placed heavy emphasis on promoting trade and investment, i.e., the sale of U.S. environmental technology, equipment and services to Asian countries. In the mid-1990s, however, a change of leadership led to a fundamental shift in program emphasis. This included an expanded focus on development programming and activities, and a new strategic focus on long-term partners. Emphasis was put on clean air, clean water, wastewater recycling, solid waste disposal, medical and hazardous waste disposal, and environmental management systems. US-AEP signed an Inter-Agency agreement with the U.S. Environmental Protection Agency to provide technical leadership in the areas of policy development, regulatory support, industrial compliance and technical assistance, and in urban pollution reduction and urban infrastructure. Under a directive from the ANE Bureau, US-AEP stopped working in bio-diversity as an area of environmental focus. It also stopped working in the energy sector.

In 1996, the Clean Technology and Environmental Management (CTEM) program was initiated by US-AEP as its industry program. The objectives of the program were to promote in-process industrial pollution prevention and the achievement of sustainable development through market mechanisms. The advent of the CTEM program placed new emphasis on activities relating to regulatory and policy issues affecting the environment. Reaching key policy-makers, and assisting them in identifying and implementing the policy changes needed to promote cleaner industrial environmental performance, became a high priority.

US-AEP introduced the idea of a sponsoring a "clean revolution" in 1997. Progress in promoting the idea is reflected in its collective endorsement by the Asia Pacific Economic Cooperation (APEC) ministers for science, technology and the environment. The Greening of Industry Network (GIN) agreed to expand its reach in 1997, authorizing the organization of its first institutional base in the developing world at Chulalongkorn University in Thailand.

Also in 1997, the ASEAN Institutes of Strategic and International Studies launched a framing activity, in collaboration with Clark University and the US-AEP Policy Group, to promote to their national policy-making constituencies the idea of industrial transformation as a development goal and environmental indicator. The National Pollution Prevention Roundtable (NPPR) replicated round tables in Indonesia and the Philippines, in both cases using the transformation agenda as the organizing premise.

In 1998, greater emphasis was given to laws and regulations, and the technical assistance to implement them. A Regional Urban Strategy was developed, with programs in five countries. Country programming was initiated, which entailed developing country strategies and annual work plans, a Results Framework, and a. Performance Monitoring Plan. MAPES was launched in 1999. US-AEP strengthened its partnership with the ADB, and began to work with the ADB on policy development and on other environmentally-related activities.

In 2001, US-AEP began working with Thammasat University in Thailand to strengthen the University's nascent environmental law graduate program, by facilitating the establishment of a partnership between its program and George Washington University's Environmental Law Program. Educational exchanges between the two universities have resulted in a formal mentoring partnership, encompassing the development of a curriculum, founding an environmental law journal, the establishment of an environmental legal clinic, student exchanges and continued staff development. The regulatory dialogue was launched in Thailand. The Department of Commerce announced that it was terminating its support for the Tech Reps in the five Advanced Developing Countries. Also in 2001, US-AEP put out bids for a new Technical Services and Support Contractor (TSSC ), in a move that would also combine most of its technical services and support requirements under one contract. And, US-AEP moved to develop new relationships with the ADCs, based on their agreeing to contribute their own resources for proposed joint activities with LDCs.

## B. THE EXTENT TO WHICH THE US-AEP "PARTNERSHIP APPROACH" HAS BEEN EFFECTIVE IN ACHIEVING RESULTS AND IN ADVANCING USAID DEVELOPMENT GOALS IN THE ANE REGION

US-AEP began in 1992 with a vision to approach development assistance in two new ways. One was to tie development to U.S. exports, in order to incorporate environmentally beneficial technologies from the U.S. into Asia's burgeoning stock. The second was to create partnerships that would continue to promote sustainable development, beyond the reach and longevity of development assistance programs, and thereby draw upon the resources and experience of public and private organizations that would not otherwise be engaged in the development assistance process.

The overall accomplishments cited in Sections II.A and II.B above attest to the extent to which the US-AEP "partnership approach" has been effective in achieving these results. The approach has been particularly effective in facilitating interaction between public and private entities; in making

arrangements for broad-based participation in conferences and workshops; and in expediting the replication, across country lines, of successful and replicable activities, such as the Regulatory Dialogue and country efforts to phase out leaded gasoline.

Having "high-profile" institutions such as the ADB and the World Bank as partners, has been rewarding and beneficial to the US-AEP. The same applies with respect to its partnerships with the U.S. Department of Commerce and the EPA, the Ford Motor Company and Hewlett-Packard. As noted earlier, the Maryland Department of the Environment worked closely with the Thai Government's Pollution Control Department, USEPA, US-AEP, and the Thai government's Entrain program in successfully expanding the capacity of Thai federal and local environmental staff to address air quality challenges. Also, notwithstanding its penchant for operating independently, to the extent that the US-AEP has achieved its targets, it has thereby also advanced USAID development goals in Asia.

Perhaps the ultimate standard by which to judge the effectiveness of the US-AEP "partnership approach", is to note that it is the model for a similar organization being developed by the European Union, that also proposes to work with key decision-makers and to provide sustainable solutions to Asia's environmental problems.

## C. THE EXTENT TO WHICH USAID'S INTERAGENCY PARTNERSHIP WITH THE DEPARTMENT OF COMMERCE AND THE ENVIRONMENTAL PROTECTION AGENCY HAVE ENHANCED THE ABILITY OF USAID TO ADVANCE US-AEP GOALS

USAID's interagency partnership with the Department of Commerce has greatly enhanced the ability of USAID to advance US-AEP goals, specifically with respect to their combined efforts to increase the transfer of U.S. environmental technology, expertise, and practices to Asian countries to effect needed environmental improvements. As indicated below, as a result of the decision by DOC to terminate its participation in US-AEP activities, it will take some time for US-AEP to regain the institutional development momentum that it had finally achieved after ten years of effort.

On the basis of interviews conducted both in Washington and in the field, the Evaluation Team has concluded that the EPA relationship with US-AEP could be made considerably more effective. This will require that the EPA be induced to establish the same degree of collaboration with US-AEP offices in other beneficiary countries, as it has in Thailand. What's needed is a composite EPA work plan of both country and regional initiatives and the greater provision of specific technical expertise targeted cooperatively by the EPA and US-AEP. Available EPA funds should go directly to EPA regional offices to ensure effective programming. Currently, EPA inputs to US-AEP activities are mainly U.S.-driven.

## D. THE EXTENT TO WHICH US-AEP LEVERAGES PRIVATE SECTOR, MULTI-LATERAL AND NON-GOVERNMENTAL INVESTMENT IN ENVIRONMENTAL MANAGEMENT; THE EXTENT TO WHICH EXCHANGES OF BEST PRACTICES AMONG U.S AND ASIAN COMPANIES, PROFESSIONAL AND INDUSTRIAL ORGANIZATIONS, GOVERNMENT AGENCIES AND LOCAL AUTHORITIES, IMPACT ON ENVIRONMENTAL MANAGEMENT

US-AEP generally asks for cash or in-kind contributions, depending upon the advancement of the country and the sector. This approach works well with the ADB and the World Bank. As to the question regarding the extent to which exchanges of best practices among U.S and Asian companies, professional and industrial organizations, government agencies and local authorities, impact on environmental management - the Evaluation Team was told that exchanges of best practices often emphasize concepts, core ideas, and approaches that can't be recognized instantly as benefits. Yet exchanges have resulted in PERPAMSI in Indonesia, for example, emphasizing consumer orientation and full cost recovery. This approach was picked up at MAPES and in Honolulu for water.

Data provided by US-AEP indicate that 195 U.S.-Asia partnerships have been formed since the program began - partnerships being defined as relationships involving a written Memorandum of Understanding, or the shared commitment of significant financial resources. Through its partnership with the Council of State Governments (CSG), 36 environmentally related projects have been undertaken involving 23 states, 11 Asian economies, 83 U.S. companies, several dozen NGOs, and 35 academic institutions. For every USAID dollar allocated to these activities, partners have contributed an average of $1.50.

The environmental management improvement results achieved through this approach have been impressive. Some 15 large U.S. companies with suppliers in Asia, have adopted programs to promote environmental management among their suppliers. Approximately 41 environmental laws and regulations have been drafted or improved by Asian governments, as a result of U.S.-AEP assistance. Working with Supreme Court justices, lawyers, legislators, and regulatory officials, US-AEP is helping pollution control efforts in Thailand, by working with advocacy groups to strengthen its regulatory capacity and enforcement, and by getting local government units and the residents of local communities involved in the process.

## E. THE EXTENT TO WHICH SUPPORT FOR NETWORKING, POLICY DIALOGUE, ROUNDTABLES, WORKSHOPS AND REGIONAL MEETINGS INFLUENCES ASIAN APPROACHES TO ENVIRONMENTAL MANAGEMENT

Optimally, these activities influence key decision-makers, by helping to develop their thinking, and eventually their actions. It is important to nurture these relationships, which requires US-AEP follow-up to ensure their continued participation in US-AEP program activities. In fact, efforts to nurture these relationships are of considerable importance, in that most regional projects are conceived, developed, and implemented in the field.

### F. THE EXTENT TO WHICH US-AEP'S IDENTIFICATION OF TRADE LEADS AND MATCHMAKING SUPPORT TO U.S. AND ASIAN COUNTRIES HAS CONTRIBUTED TO THE EXPORT OF U.S. ENVIRONMENTAL TECHNOLOGIES AND SERVICES

Through its partnership with the National Association of State Development agencies (NASDA), matching grants are provided to small and medium-sized U.S. enterprises (SMEs), to market their environmental technologies, goods, and services to Asian business firms and to government agencies in ways that increase their capacities to address environmental problems. NASDA has made grants to U.S. SMEs in 46 states. The grants have helped to generate over $350 million in export revenues and have created an estimated 850 new jobs.

### G. THE EXTENT TO WHICH US-AEP'S SUPPORT FOR ASIAN COMPANY PARTICIPATION IN U.S. TRADE SHOWS HAS CONTRIBUTED TO THE EXPORT OF U.S. ENVIRONMENTAL TECHNOLOGIES AND SERVICES

Team interviews with DOC officials indicated that there was very little "bang for the buck" in terms of satisfied U.S. clients, given the money and time spent. In addition, it was noted that a US-AEP contractor had prepared an assessment of Asian company participation. He concluded that there was much spinning of wheels, phone calls to Embassy offices, seminars, trips, a 10-day conference. There was lots of glitter, not many deals were made, and there was no bottom line. There was no monitoring of the achievement of goals, and no targets were set. Third echelon business cards were left. Money was misspent. It was a money-draining program, and nobody was volunteering to rationalize the process.

### H. THE EXTENT TO WHICH THE US-AEP APPROACH DIFFERS FROM THAT OF OTHER MECHANISMS BEING USED BY USAID TO ADDRESS SIMILAR PROBLEMS

It is very different. US-AEP is much more flexible, responsive, and innovative. It brings in more US partners, and can choose to work with the best local partners. Also, US-AEP staff members generally know a country's environmental situation better and are able to work more closely with local partners. The US-AEP approach puts more emphasis on U.S. partners, but the key difference from other USAID mechanisms is the uninterrupted years of in-country presence of US-AEP personnel and the innovative, flexible, rifle-shot, response to the environmental problems that it addresses. Moreover, US-AEP doesn't have to deal with the traditional USAID way of doing things. It is focused on "end-of-pipe" technology. It has gotten things going. It lends itself to a campaign-type approach.

## V. THE EXTENT TO WHICH US-AEP ACTIVITIES COMPLEMENT USAID COUNTRY DEVELOPMENT STRATEGIES

In Indonesia, in energy and clean air, there is close cooperation and mutual enhancement between the USAID Mission and the US-AEP. For the introduction of the State Legislative Leaders Foundation (SLLF) to Indonesia, US-AEP put in $25,000, and the Mission provided $125,000 that was administered by the US-AEP. While the USAID continues to include the SLLF in its country program, the Foundation expects to receive $150,000 from the UNDP and $25,000 from the General Electric Foundation to continue its seminars and courses for Indonesian legislative leaders. In

Indonesia, USAID has relied on the results of US-AEP projects for its own R4 results. US-AEP projects have led directly to effective USAID projects in several cases.

In Indonesia, the US-AEP strategy to increase community access to piped water, complemented the USAID's strategy of enhancing the capability of local governments to provide such access. Currently, US-AEP is seeking to help the mission by preparing a composting activity for follow-on mission funding with earmarked agricultural funds.

In the Philippines, there were a number of energy exchanges which the USAID/Philippines funded but asked the AEP to do it for them. The USAID Mission in India copied the US-AEP industry environmental program in 1996. There was an exchange buy-in to support the South Asia Regional Initiative (SARI), a broad energy program.

**How does work in developed countries (e.g., Singapore and Taiwan) further USAID development goals?**

It shows the extent to which successful environmental initiatives can impact the health and well-being of various segments of the population. For example, the Alliance to Save Energy program is now being replicated in Indonesia and Thailand.

# VI. CHANGING CONDITIONS IN ASIA AND THE RELEVANCE OF THE US-AEP MODEL

As a result of globalization, Asia is increasingly becoming a distinct economic system. The emerging political structures in Asia – ASEAN and APEC – are being built on the realities of regional economic integration. US-AEP operates in 11 Asian economies and is strategically poised to promote progress on cross-border environmental issues such as improving air quality.

An estimated 80 percent of Asian industry will be newly built in the next 20-30 years. The environmental implications of these new investments, and their benefits for the US, in terms of the export of environmental goods and services, are of major interest to USAID and to the US-AEP.

The ADB has noted that over the last two decades, Asia's developing economies have established legal systems and institutions to oversee environmental protection. However, reviews of environmental performance in the region in the late 1990s, revealed that the environmental quality would continue to deteriorate if environmental governance agencies continue to operate in a "business as usual" manner. With a few notable exceptions, Asia's developing economies have failed to make environmental protection a policy priority and have not put in place policy frameworks and institutional resources that would ensure compliance with stated environmental goals.

## A. THE APPLICABILITY OF THE US-AEP APPROACH TO OTHER REGIONS

The US-AEP approach is applicable to other regions, and there is a market for the approach in other geographic regions. However, considerable attention would need to be given to ensuring that the Asia model is appropriately adapted to the environmental, industrial, political and cultural conditions of the other regions. Asia's business culture lends itself to the current US-AEP model. In fact, the

current model, as it stands, reflects a host of modifications that have been made - as it has evolved over the past ten years.

The EcoLinks program, launched by the Eastern Europe/Eurasia Bureau in 1999, is aimed at promoting sustainable relationships among businesses, local governments, and trade associations in Eastern Europe and Eurasia. Results, to date, include success stories such as the strategic partnership formed between a Czech based company, SOKOFLOK, and LightStream Technologies of the U.S. Over 150 units of patented UV water disinfecting units will be sent to Prague for municipal and industrial applications. The units, which eliminate the need for chlorine, chemicals and mercury bulbs, represent a $10 million export sales transaction.

The US-LAC Environmental Partnership was launched by the LAC Bureau to improve the performance of targeted LAC businesses and communities. The program works to identify, introduce, and disseminate environmentally sound technologies and practices, targeting sectors such as shrimp, aquaculture, water/wastewater, and mining. In the hotel and tourism industry, the US-LAC Environmental Partnership has introduced environmentally sound best management practices, developed in Jamaica, to countries in Central America, as well as to Ecuador and Mexico.

## B. THE EFFECT OF THE DECISION BY THE DEPARTMENT OF COMMERCE TO TERMINATE ITS PARTICIPATION IN US-AEP ACTIVITIES

The effect of the decision by the Department of Commerce to terminate its participation in US-AEP activities, has been to disrupt the emergence of the kind of institution that will be critically needed over the next decade to bring balance to the conservation protection vs. economic (and population) growth duel currently raging in the Asia region. It will take some time for the US-AEP to regain the institutional development momentum that it had finally achieved after ten years of effort. As indicated in Exhibit 9, attached hereto, the economic (and population) growth forces appear to be winning in the Philippines. DOC's withdrawal from the US-AEP program will complicate efforts to restore the balance there.

## C. THE "NON-PRESENCE" ISSUE AND ITS EFFECT ON THE PARTICIPATION OF ADVANCED DEVELOPED COUNTRIES (ADCS) IN US-AEP ACTIVITIES

All five ADC countries want to buy back into the program, and have tentatively been given the go-ahead. Arrangements could be set up, through MOUs, between the US-AEP and the ADCs.

Projects launched in the ADCs have served as models for the introduction of similar projects in the six Less Developed Countries (India, Indonesia, the Philippines, Sri Lanka, Thailand, and Vietnam), in which the US-AEP has continued to operate jointly with the DOC, but primarily with USAID funds. But that situation is also changing: the DOC has announced that it plans to also disassociate itself from the US-AEP in the LDCs, effective September 30.

Accordingly, the US-AEP is currently exploring various options for continuing to engage the five ADCs in its activities in the LDCs. It is also establishing a new support structure for the continued operation of its Offices of Technology Cooperation in the six LDCs, and for continued support for a modest level of activities in two other LDCs (Nepal and Bangladesh), where there is no US-AEP staffing presence.

Over the past several months, the US-AEP has identified prominent public and private sector entities in each of the five ADCs that have expressed a strong interest in serving as US-AEP "liaison" in their countries. This has led them, in some cases, to consider establishing an alliance for joint planning purposes and to also consider providing funding from their own resources to the LDCs.

US-AEP efforts to establish a new support structure for the US-AEP Offices of Technology Cooperation in the six LDCs are just getting started. They will be focused heavily on forging a new relationship with the USAID Missions in these countries.

# VII. THE EXTENT TO WHICH US-AEP OPERATIONS HAVE BEEN COST EFFECTIVE

## A. DISCUSSION

The Evaluation Team review of US-AEP's program, operations and budget indicates that the USAEP is a cost-effective model for USAID's advancement/achievement of its environmental goals. This judgment reflects US-AEP's:

- relatively low program cost, i.e., $10 to $17million per annum, or approximately six tenths of one percent of USAID's annual budget, or equivalent to the Mongolia Mission's annual program;
- *de minimis* share of the total USAID environmental budget (i.e. approximately 2% of AID's 2002 budget request for the environmental sector, $633 million);
- relatively low cost of individual activities;
- cost sharing with partners;
- significant program accomplishments;
- significant leveraging of other donor resources.

Measuring the cost effectiveness of the USAEP is difficult. USAEP's goal and strategic objective are not easily reduced to quantification, or at least quantification which captures the essence of US-AEP's mission, i.e., to catalyze Asian governments, institutions and individuals to focus their attention and efforts on avoiding an environmental catastrophe by reducing the negative environmental consequences of economic growth.

USAEP's goal and strategic objective reflect a process or movement, rather than a discrete and static event. As such, it is best measured over time by proxies of change, i.e., activities such as the introduction of legislation and new management methods of addressing environmental issues; the introduction of new and environmentally appropriate technology; and the commitment of scarce resources to environmental issues and problems.

Program characteristics of the US-AEP that reflect its cost effectiveness, include its flexibility and ability to respond to different management and programs requirements, the degree of cost sharing with partners, its ability to leverage other funding, replication of its activities, and its ability to effectively spread or to wholesale its message.

## B. MANAGEMENT EFFECTIVENESS

The Evaluation Team believes that management effectiveness and program flexibility are organizational characteristics consistent with the concept of cost effectiveness, although they are not synonymous.

Since 1992, US-AEP has worked in a total of 13 countries, and has carried out more than 5,000 individual educational exchanges. The total cost (obligations) for US-AEP, during this period, has been approximately $168 million. USAEP has used approximately 30 separate contract or procurement vehicles to implement this program.

US-AEP has also created 292 partnerships with US and Asian institutions, and has involved 48 states in the development process in Asia.

Managing this complex effort has required US-AEP to adopt different management structures to respond to local conditions, i.e., ADCs, non-presence countries and AID Missions with different program and management interests.

The US-AEP is currently managed by a Secretariat of 8 professional and administrative staff, including 1 PSC in Asia. The Secretariat is presently supported by contracts and partners (i.e. the Council of State Governments), with a total professional and administrative staff of 77 in Washington and overseas (as of 5/1/02).

The overseas component of this contract staff is thirty-four, and it includes both professional and administrative staff assigned to Asian offices in Manila, Jakarta, Bangkok, Hanoi, Colombo and India. (See Exhibits 10 and 11 for an organizational chart and staffing pattern).

The US-AEP has operated overseas with institutional contractors (e.g., the Louis Berger Group, PADCO, IRG) and U.S. and local personal service contractors. It has shared office space with the U.S. Foreign Commercial Service. The total cost of running all field operations in all 11 US-AEP countries was $1.9 million in FY2000 ($173,000 per country).

### *Field management arrangements*

A major reason for this exceptionally low operating cost has been the extensive use of resident host country and expatriate staff. Typical salaries run from a high of $25,000 for a very senior person in India, to a low of $7,000 per annum in Sri Lanka. Locally hired, experienced expatriates are earning $40,000 to $50,000 per annum, vs. the AID average of $250,000 per annum for U.S. personnel located overseas.

US-AEP has demonstrated flexibility in developing management arrangements reflecting the local situation and AID's interest. In Thailand, US-AEP followed the lead of AID and developed a

partnership relationship with the Kenan Institute, as a follow up to the USAID Mission-run program. In Indonesia, USAEP has managed its activities, in conjunction with and support of the USAID, with joint funding of a water resources specialist in the Mission and contract staff, in the U.S. Foreign Commercial Service office (FCS). In the Philippines, USAEP has had a resident team of contractors working within the USFCS and the ADB. Collaboration with the Mission has included members of the USAEP staff working within the Mission. In the ADCs, USAEP managed its operations as an integral part of the FCS. A US PSC manages USAEP's regional activity out of Manila.

***Washington management arrangements***

The Washington based management consists of a staff of 8 direct hires forming a Secretariat, a technical support services contractor (Louis Berger), and four partner organizations. Direct hire and contractor staffs are organized into Program Advisory Groups, which provide policy and program development services.

US-AEP's Washington operation does not share the same cost effective image of the field. Washington contractor activities include program development and implementation and management services to the Secretariat. Historically, the US-AEP has used numerous U.S. contractors and partners to develop and implement its program. The number of staff represented by the Secretariat, contractors and partners, has raised questions about the cost effectiveness of US-AEP's Washington operations and which functions can reasonably be transferred to the field or eliminated. The one program, which the Evaluation Team believes can be transferred, is the ETNA Trade Links Program.

In terms of any transfer of functions and staff to the field, any reduction in Washington staff is offset by the significantly higher per person cost, if a U.S. citizen fills the overseas position. Alternatively, using the existing US-AEP model of hiring local staff and resident expatriats, the transfer of functions would result in a corresponding net cost savings.

However, care should be taken not to try to compare the US-AEP staffing with a "typical" USAID mission. US-AEP's model is labor intensive and a good deal of its efforts are directed toward working with U.S. organizations and in developing the policy and strategic framework. With a field operation staffed by host country nationals and U.S. PSCs, there is an increased burden on Washington to provide policy oversight and supervisio.

Specifically, US-AEP's mode of operation is to develop and work with numerous U.S. and Asian partners, and to implement its activities through small exchanges, conferences and workshops. The US-AEP has a multi-program focus (see Exhibit 12) including environmental policy, urban infrastucture, industry and technology transfer, and, finally, it is regional in scope.

US-AEP has not been inattentive to the issue of a large Washington based contract staff, and this issue was a major reason underlying US-AEP's effort to consolidate contractor activities and functions under one contract. As a result of this consolidation, total contractor and partner staff (Washington & Asia), has been reduced by 10 (from 53 to 43). Transferring the ETNA program to the EGAT Bureau and the termination of the of an AAS fellow position in September 2002 will reduce the Washington staff to a total of 40.

## C. PROGRAM FLEXIBILITY

Most US-AEP program initiatives are small investments (i.e. $5,000 for exchanges to $150,000 for NASDA grants and $25,000 for CSG grants), and $173,000 for a demonstration Clean Air Partnership with Chiang Mai and the Maryland Department of Environment. US-AEP activities are usually undertaken with partners as educational exchanges, conferences etc., and in some instances there are projectized efforts focused on, e.g., improved water or air quality. The relatively small investment of US-AEP funds in any one activity allows US-AEP to act as a catalyst and innovator, yet not committing the large resources typical in most AID projects. Many of US-AEP's activities are undertaken by and with private partners, and US-AEP has the flexibility to close down an activity quickly, at minimal cost.

The US-AEP program has demonstrated creativeness and flexibility in its development of programs that are complementary and supportive of different Missions, each with their own strategy and modes of operations.

US-AEP has provided direct assistance to USAID Mission projects in Indonesia, India and the Philippines, and has provided project design assistance to USAID/Cambodia.

## D. SPREAD EFFECTS

USAEP is modeled on the concept of a wholesaler of development ideas and technology. It develops partnerships that will, in many cases, continue after USAEP funding is gone, and will continue to deliver the ideas initiated by USAEP.

Examples of this cost effective technique include: the introduction of Environmental Management Systems into 12 national development banks, which deal with small and medium size businesses; the introduction of the Greening of the Supply Chain concept to 15 large corporations, which passed the concepts of more effective environmental management to more than 3800 small and medium size businesses in Philippines, India, Thailand, Malaysia and Indonesia

## E. COST SHARING

USAEP has operated under a management criterion of partners sharing in the cost of activities. Sometimes referred to as "leverage", the total cost sharing with actual partners, over the period 1992-01, is approximately $183 million (see discussion below).

As an example, USAEP's partnership with the Council of State Governments (CSG) has resulted in more than $5.2 million of partners' funds being invested in 30 projects, involving 232 states and 11 Asian economies.

## F. LEVERAGING

USAEP's leveraging of USAID Missions and other donors resources has been significant:

During the period 1992-2001, USAEP has leveraged approximately $183 million for economic and environmental development from private and governmental partners. USAID's investment through

USAEP, during this period, has been approximately $168 million. USAID has leveraged its investment ($168 million) by 109%. The amount leveraged ($183 million) represents 52% of the total USAEP program cost.

In 2001, USAEP reported leveraging $9 million from public and private sector partners, against a USAID obligation of $16 million (equal to 56% of the total USAID funding ), or 36% of US-AEP's total resources.

## G. REPLICATION

The USAEP has served as the direct model for the E&E Bureau's Eco-Links Project and for the conceptual underpinning of the Agencies Global Development Alliance. The USAEP model has also been copied, as a development tool, by the European Union (EU-ASIA PRO ECO). USAID Missions in India, Philippines, Indonesia and Bangladesh have adopted USAEP initiatives, bought into USAEP programs, or agreed to co finance USAEP activity;

## H. ILLUSTRATIVE US-AEP ACCOMPLISHMENTS AND COSTS (1995-2002)

The Evaluation Team has identified the following examples of project decisions taken by Asian decision makers, which we believe, are due, at least in part, to USAEP's efforts, and which reflect this broader program goal and objective. These achievement and benefits and the approximate costs are summarized below:

### *1. Phase Out Of Lead Free Gas*

USAEP has provided assistance to Vietnam, Philippines and Indonesia in the analysis of the problems created by leaded gas and in drafting appropriate remedial legislation. This activity was undertaken in collaboration with other donors, particularly the ADB. The direct benefits of this activity are an estimated 155 million people in Vietnam, Philippines and Jakarta, who will benefit in terms of reduced lead/blood levels and reduced respiratory illnesses. There are an additional uncounted number of beneficiaries in Laos, Cambodia and Indonesia. A related benefit of reduced blood/lead levels is a positive correlation with child mental development. The direct cost of this activity has been $252,000, through FY 2002. AEP has leveraged its inputs, with funds from the ADB and from the national governments.

### *2. Policy Dialogue*

USAEP has worked with the Governments of Thailand, the Government of the Philippines and the NGO community to strengthen the enforcement of environmental laws and to help develop innovative legal and regulatory enforcement strategies that build on international experience. Efforts in Thailand include assistance, at the national level, to the GOT - to establish a new Ministry of the Environment and, at the local/NGO level, to mobilize citizen involvement in environmental issues, enforcement of environmental laws & regulations, and increased compliance.

USAID/Cambodia's "Accelerating Economic Reform in Asia" project utilizes the expertise of USAEP contractors, based upon work done on civil society issues, under USAEP's support of environmental ministerial reform in Thailand. The benefit of this activity is an improved legal and

regulatory system for environmental issues and increased citizen participation in local governance. The USAEP Policy Dialogue activity has assisted USAID/Cambodia and the ANE Bureau. The cost of this activity has been $725,000, through FY2002.

### 3. *Greening the Supply Chain*

This activity has mobilized large international corporations, including the Ford Motor Co. and Nestle Philippine, to introduce environmental awareness and compliance to more than 3,800 small and medium industries in their supply chain. The program has also been operational in the Philippines and India. This activity has also had a direct impact on how large international and small and medium size companies in the Philippines, India, Thailand and Malaysia deal with the environmental aspects of their businesses. This has included the introduction of environmental management concepts into their operations. USAEP cost for this activity has been $312,000. USAEP leverage includes working with the Ford Motor Co. in the Philippines, where 100% of its first tier suppliers have participated in cleaner production, and it has mandated that all their suppliers must be ISO 14001 certified, by December 200. USAEP estimates that Ford has invested $60 million in its suppliers to help them achieve company environmental goals. UTC contributed $400,000 to this program, and Nike and Ford are estimated to have contributed more than $1,000,000.

### 4. *Indonesia Water Project (WET)*

USAEP has provided assistance to local water authorities to improve their management and financial conditions. The benefits of this activity have been improved water to almost 600,000 people in Indonesia. This was accomplished at a cost to USAEP of approximately $380,000. USAEP's investment led to a USAID follow on activity and investment of $6 million in technical assistance. In total, USAEP leveraged $24 million (64 times USAEP investment) from USAID, the World Bank and the Government of Indonesia.

### 5. *MAPES*

The Mayor's Asia-Pacific Environmental Summit (MAPES) and annual technical meetings bring together more than 200 to 400 local and national government officials, business representatives and non-governmental organizations - to share information, best practices, and strategies for improving urban environmental management in Asia and the Pacific. The benefits of the MAPES activity are the raising of awareness of urban environmental issues and the sharing of environmental best practices, strategies and experiences between Asian and U.S. mayors. The MAPES summit meeting and technical meetings have resulted in public commitments by Asian mayors to undertake specific environmental actions, including a pledge by Ahmedabad, India to construct new sewage treatment plants, a city wide solid waste plan to eliminate open waste storage, and the provision of essential services to slum areas of the city. Bangkok pledged to expand its green fleet program (begun with USAEP assistance), and to construct a new wastewater treatment facility by 2004.

At the 2001 MAPES Summit, governors, mayors and other local government officials from 27 different Asian cities, made individual commitments for environmental improvement in their communities. At the conclusion of the MAPES Technical, in March 2002, the City of Honolulu announced the creation of a new institution focused on Asian environmental issues, namely, the Asian Pacific Urban Institute. USAEP's investment in MAPES was $79,500. Other donors have

joined USAEP in support of MAPES, including the ADB, the UNDP, CIDA and the World Bank. Total contributions from other donors totaled $105,000, plus approximately $49,000 from Asian participants.

### *6. Technology Transfer*

US-AEP's early years were dominated by the focus on U.S. environmental technology as the solution to Asia's environmental problems. The effort to link U.S. technology to Asia's environment was fundamental to the creation of the US-AEP, and was implemented through a Memorandum between USAID and the Department of Commerce. Under this MOU, DOC recruited and jointly funded with US-AEP, the assignment of Tech Representatives in Asia. The DOC terminated this agreement in 2001, citing its reduced budget as the reason.

By all accounts, US-AEP's technology transfer program was successful and, over the course of the past 10 years, has contributed to the sale of approximately $1.4 billion of U.S. environmental technology in Asia. Interviews with FCS officers in Singapore, Thailand, and at the ADB, as well as the U.S. Representative to the ADB, strongly endorsed the US-AEP program. All regretted the DOC decision to terminate its involvement. Representatives of the U.S. business community also have expressed strong support for the program.

### *7. Program Emphasis*

Several individuals interviewed during the course of this evaluation, questioned US-AEP's effectiveness and its developmental impact, noting the "emphasis" on selling U.S. technology and they expressed the belief that enumerating the numbers of exchanges or conferences did not constitute development impact. The Evaluation Team agrees with the latter observation, but notes that AID and the ANE Bureau accepted these indicators as valid and appropriate. The indicators included in the R4, are an attempt to quantify as proxies what is inherently difficult or impossible to quantify, i.e., "influencing decision makers."

The Evaluation Team also found that the perception of an "emphasis" on selling US technology is both misinformed and a continuing problem for US-AEP. This perception is easier to understand if one considers the early US-AEP program (1992-95), which USAEP staff refer to as the "trade lead a day" program. However, US-AEP's focus changed in 1995, when it redefined its Goal and Strategic Objective to a "clean revolution", and to "a sustained impact on decision makers..." in Asia. In 1998, USAEP instituted a programming process, which emphasized the preparation of country level strategies, developed in collaboration with AID Missions - and annual work programs focused on US-AEP's Strategic Objective. The combination of these two developments has firmly structured US-AEP in the sustainable development paradigm.

## VIII. CONCLUSIONS

1. The "clean revolution" , which currently serves as the goal of the AUS-AEP program, needs to be seen as a revolution – one directed at bringing equivalency to environmental concerns and putting them on a par with economic growth and social benefits requirements in the allocation of USAID development assistance resources.

2. The US-AEP, through its "partnership approach", has been successful in mobilizing U.S. expertise and using it effectively "to address the serious environmental problems in Asia". It has, accordingly, achieved its initial goal.

3. The Team considers the US-AEP to have been cost effective in its operations to date, and a model for USAID advancement/achievement of its environmental goals. This judgement reflects the US-AEP's relatively low program cost ($15 to $17million per annum). It also reflects recognition of the emphasis being given by US-AEP to maintaining sustained contact with the key people, institutions, and forces that are the drivers behind efforts to bring about environmental improvements, including in particular the leaders and residents of the communities involved.

4. The current US-AEP strategy of directing program resources to activities that are aimed at bringing about better public policy and environmental regulation; improved urban environmental management; improved industrial environmental performance; increased transfers of environmental technology, expertise and practices, through trade and investment; greater involvement of civil society in environmental matters; and improvement in energy efficiency—seems well suited to both the environmental needs of the countries in which it is operating and to its own capabilities. Team field interviews indicated that to community residents and leaders in Asian countries, the most important environmental improvements are those that relate to clean water, clean air, energy efficiency, and solid waste removal. Efforts to bring about the greater involvement of civil society in environmental matters would likely be more effective, however, if such efforts were dealt with as an integral component in the five other areas of program focus, and not identified and managed as a separate area of focus.

5. USAID has invested $170 million over 10 years in developing the US-AEP program into an effective, recognized, and respected part of the development/environmental paradigm in Asia. It would be a mistake to lose the continuing potential benefits to be derived from this program.

6. The mantra that all AID activities must be undertaken as part of the Mission is unfortunately accepted as dogma and discourages innovative thinking in the development of AID program management and ideas. The fact that a program such as the US-AEP or the OFDA operates alongside a Mission is not in itself a management problem. The US-AEP has proven itself to be a valuable partner for USAID Missions throughout Asia.

## IX. RECOMMENDATIONS AS TO FUTURE US-AEP OPERATIONS

1. The Evaluation Team recommends that the US-AEP program remain within the management structure of the ANE Regional Bureau for the foreseeable future. Team interviews confirmed that regional identity and responsiveness to differences across regions have been important to the program's success. In so doing, the ANE Bureau should modify the program's organizational structure and mode of operation, as needed to convert it into a field-driven operation. Further, US-AEP prepared a Strategic Plan in May 1995, covering the period, 1995-2000. The Strategic Plan has not as yet been updated, whereas US-AEP objectives have

changed since the 1995 Plan was developed. The preparation of an updated Strategic Plan is certainly in order.

2. The Team recommends that ANE establish one or more regional US-AEP offices in Asia to provide direct supervision of contract and local staff and to improve the coordination and liaison with the USAID Missions and international organizations that are operating in the region.

3. Consideration should be given to transferring the ETNA trade leads activity to the EGAT Bureau. The US-AEP should continue its efforts to engage the five ADCs in environmental improvement activities in the LDCs. The ANE Bureau should also ensure that the US-AEP program will continue to be given the high-level of support by USAID that is essential, if it is to continue to achieve its environmental protection goals and objectives.

4. The Evaluation Team believes that it is essential to the continued success of the US-AEP program that EPA technical staff become more active in providing information and advice to US-AEP and beneficiary countries, particularly regarding appropriate environmental technologies, and that it be more forthcoming in providing technical support services. The MOU between the US-AEP and the EPA should be updated accordingly. The Team heard a number of complimentary remarks, during its field interviews, regarding the quality of the technical services provided by EPA field staff; however, these remarks were coupled with comments to the effect that EPA field operations were not very well funded, limiting their availability.

5. The US-AEP Executive Director should strive to keep a narrow focus on the scope of program activities. As suggested earlier, bringing about the greater involvement of civil society in environmental matters should be dealt with as an integral component in the five other areas of program focus, and should not be identified and managed separately. During its field visits, the Evaluation Team noted that there is considerable scope in client countries for the near-term expansion of US-AEP activities relating to the bringing about of better public policy and environmental regulations; and to the improvement of urban environmental management in Asia's rapidly expanding urban centers. In this regard, there appears to be considerable concern among Asia's urban planners that the environmental problems of the high levels of water and air pollution emanating from small and medium-scale industries in urban areas are not being adequately addressed by organizations such as the US-AEP. Steps should be taken to ensure that these problems are addressed.

# X. OTHER ITEMS AND ISSUES TO BE CONSIDERED

## 1. A PROPOSED NEW SOURCE OF FINANCING

A major constraint to the implementation of many environmental initiatives, whether in the industrial sector or the urban sector, is lack of long-term financing. AEP should consider working with USAID's Development Credit Authority (DCA) to finance small demonstration environmental projects, in some cases utilizing appropriate U.S. technology. The DCA would bring private sector

financing and risk analysis into the Asia environmental program and enable US-AEP to further demonstrate new approaches to economic development and its environmental consequences.

## 2. THE PROSPECT OF PRIVATIZING THE US-AEP

The original concept of US-AEP included the prospect of privatizing it at some future time. While privatization does not appear to be a realistic option, USAID may want to explore the idea of creating a non-profit environmental foundation. Specifically, a foundation along the lines of the private investment banks created with U.S. Government seed capital in, among other places, Hungary, Rumania and Russia. Potential non-governmental donors could include major international corporations now working with the US-AEP, environmental organizations, development-oriented foundations, environmental foundations etc.

## 3. REPLICATION OF THE US-AEP'S "PARTNERSHIP APPROACH"

US-AEP has already been used by USAID's E&E Bureau and by the European Union as a model for developing partnership-focused programs in the environmental sector. The US-AEP model could also be considered as the model for similar partnership programs in other substantive areas, where USAID has an interest, such as health and agriculture. A critical concept, however, is that any such US-AEP-type programs should function as complementary to, and in coordination with, ongoing USAID Mission programs in these sectors.

## 4. COST RECOVERY

A major success of the US-AEP over the past 10 years has been its record of assisting U.S. companies in selling over $1.4 billion in U.S. environmental goods and services. This effort has been made by US-AEP, at no cost to the U.S companies involved in the transactions. USAID should consider instituting a cost recovery policy, which would assess a fee for US-AEP services, but only on successful sales and on a reimbursable basis. A 1% reimbursable success fee on $1.4 billion in sales would net $14,000,000.

**ANNEXES:**

**EXHIBITS:**

## ANNEX A

## List of People Interviewed

### Taiwan

Yeong-Ren Chen, Dr. PH
Secretary General
Environmental Protection Administration
Government of the Republic of China

Jerry H. Huang
Deputy Director
Sustainable Development Division
Industrial Development Bureau
Ministry of Economic Affairs

William L. Marshak
Deputy Section Chief
American Institute in Taiwan
Commercial Section

Huan-Cheng Wen
Section Chief
Pollution Control Division
Environmental Protection Department
Taiwan Power Company

Paul C.P. Lee
Division Chief
Pollution Control Division
Environmental Protection Department
Taiwan Power Company

Young Ku, Ph.D.
Professor
Department of Chemical Engineering
National Taiwan University of Science and Technology

Hal Falls
Director
State of Arizona
Asian-Pacific Trade Office

Grace Tao
American Institute in Taiwan
Commercial Section

**Singapore**

Tan Kim Suan
Corporate Communications Manager
Environmental Technology Institute

**Indonesia**

Ahmad Safrudin
Chief Executive
Walhi Jakarta

Restiti
Program Officer Campaign
Clean Air Project
Swisscontact

Jim Woodcock
Urban Infrastructure Adviser
U.S.-Asia Environmental Partnership
USAID

T. Christopher Milligan
Director
Decentralized Local Government Office/Indonesia &
Regional Urban Development Office/S.E. Asia
USAID

Dana C. Kenney
Senior Sustainable Energy Advisor
USAID
Energy Governance Team

Ir. Rudy Yuwono, MSc.
Deputy Director for Public Communications
Ikatan Ahli Teknik Penyehatan Dan Teknik Lingkungan Indonesia

Prof. Dr. Benny Chatib, MSc.
Yayasan Pendidikan
Tirta Dharma
(Education and Training Foundation)

Foort Bustraan
Institutional and Technical Adviser
PERPAMSI
Indonesian Water Supply Association

Ir. H. Kumala Siregar
President
PERPAMSI
Indonesian Water Supply Association

Alice A. Davenport
Counselor for Commercial Affairs
Embassy of the United States of America
U.S. Department of Commerce

Aboejoewono Aboeprajitno
Senior Advisor to the Minister
Global Environment Affairs
Ministry of Environment
Republic of Indonesia

Ridwan D. Tamin, M.S. (R)
Head, Mobile Source Division
Environmental Impact Management Agency
Bapedal

Ir. Dudy Christian
Director
ADIPROTEK Environdunia

Drs. Aditya Karma
President Director
ADIPROTEK Environdunia

FJ. Gunawan
Technical Development Manager
PT. Adiprotek Environdunia

Suzanne R. Billharz
Director for Program Coordination and Policy
US-AEP Program

**Thailand**

Stacy E. Bonnaffons
Manager, Asia Business Development
U.S. Trade and Development Agency

P. Illangovan
Senior Environmental Specialist
Environment and Social Development Unit
The World Bank

Satit Sanongphan
Deputy Director
US-AEP
American Embassy Bangkok

Arthit Vechakij
Managing Director
Excellent Energy International Company Limited

Kitti Kumpeera
Director
Environmental Management Division
Kenan Institute Asia

Kitti Kumpeera
Director
US-AEP Urban Infrastructure Program
Kenan Institute Asia

Paul Wedel
Executive Director
Kenan Institute Asia

Professor Dr. Montri Chulavatnatol
President
Kenan Institute Asia

Anchalee Chavanich
Governor
Industrial Estate Authority of Thailand

Darryl Norman Johnson
Ambassador of the United States of America

Ted Osius
Regional Environmental Affairs Officer
Embassy of the United States of America

Samarn Thangtongtawi, Ph.D.
Chief Engineer
Industrial Estats Authority of Thailand

Ngamwalaya Tasneeyanond
Assistant to the Senator, Tak Province

Paul B. Violette
Senior Environmental Specialist
US-AEP

Panat Tasneeyanond
Senator (Tak Province)

Somporn Kamolsiripichaiporn, Ph.D.
Deputy Director
Environmental Research Institute

Karen L. Ware
Commercial Counselor
Embassy of the United States of America

Woothisarn Tanchai
Assistant Professor
Faculty of School Administration
Thammasat University

Dr. Bhichit Rattakul
Director
Anti Air Pollution & Environmental Protection Foundation

Dr. Hansa Sanguannoi
Executive Director
Anti Air Pollution & Environmental Protection Foundation

Saurapong Phutanapiboon
Mayor
Rayong Municipality

**The Philippines**

Conchita C. Silva
Program Manager, Asia
Technical Support & Services Contract
US-AEP Program
USAID

Dennis C. Zvinakis
Regional Representative
United States-Asia Environmental Partnership
USAID

Roselita "Bo-Peep" C. Paloma
Committee Secretary
Committee on Ecology
Republic of The Philippines
House of Representatives

Alma P. Madrazo, Ph.D.
Tetra Tech EM Inc.

Charles M. Melhuish
Lead Transport Sector Specialist
Finance and Infrastructure Division
Regional and Sustainable Development Department
Asian Development Bank

Bradford R. Philips
Director
Agriculture, Natural Resources &
Social Sectors Division
Regional and Sustainable Development Department
Asian Development Bank

Samuel Tumiwa
Renewable Energy Specialist
South Asia Infrastructure Division
Asian Development Bank

Allen Williams
Principal Urban Development Specialist
Asian Development Bank

Arthur C. McIntosh
Principal Project Engineer (Water Supply)
Agriculture, Natural Resources &
Social Sectors Division
Regional and Sustainable Development Department
Asian Development Bank

Kim C. Phan
Commercial Environmental Specialist
US-AEP

George F. Ruffner
Counselor for Commercial Affairs
Embassy of the United States of America

Val E. Huston
Commercial Officer
Embassy of the United States of America

Lisa Kircher Lumbao, QEP
Consultant
Planning and Development Collaborative International
PADCO, Inc.

Chantale Yok-Min Wong
Acting U.S. Executive Director
Asian Development Bank

Cornie Huizenga
Secretariat
Clean Air Initiative for Asian Citiex
Asian Development Bank

Jakhanit Kananurak
Program Associate
Alliance to SAVE ENERGY

Patricia K. Buckles
Mission Director
USAID

Jerry P. Bisson
Chief
Office of Environmental Management
USAID

Laurie de Freese
Deputy Chief
Office of Environmental Management
USAID

Stewart J. Ballard
Director and Senior Commercial Officer
United States of America
Commercial Liaison Office for the Asian Development Bank

Atty. Gil-Fernando C. Cruz
Executive Director
League of Cities of the Philippines

Glyynda Bathan
Consultant
Asian Development Bank

**Miscellaneous**

Julie M. Haines
Chief of Party
Technical Support Services Contract
US-AEP Program
USAID

David M. Callihan
Director of Operations
Technical Support Services Contract
US-AEP Program
USAID

Alex Izadpanah
Managing Director
Environmental Technology Network for Asia (ETNA)
US-AEP Program
USAID

Jack Andre
Senior Advisor
US-AEP Program

Larry C. Lai
Managing Director
Exchange Program for Sustainable Growth

Institute of International Education
US-AEP Program

John C. Speicher
Administrative and Financial Manager
Exchange Program for Sustainable Growth
Institute of International Education
US-AEP Program

Julie Pike
International City/County Management Association

Sarah J. Heidema
Program Manager
International Development Programs
National Association of State Development Agencies

Amanda E. Morris
International Trade Specialist
National Association of State Development Agencies

Albert C. Harberson
Director and Assistant
General Counsel
Trends Research and Response Group
The Council of State Governments

Chris Whatley
Director
International Programs
The Council of State Governments

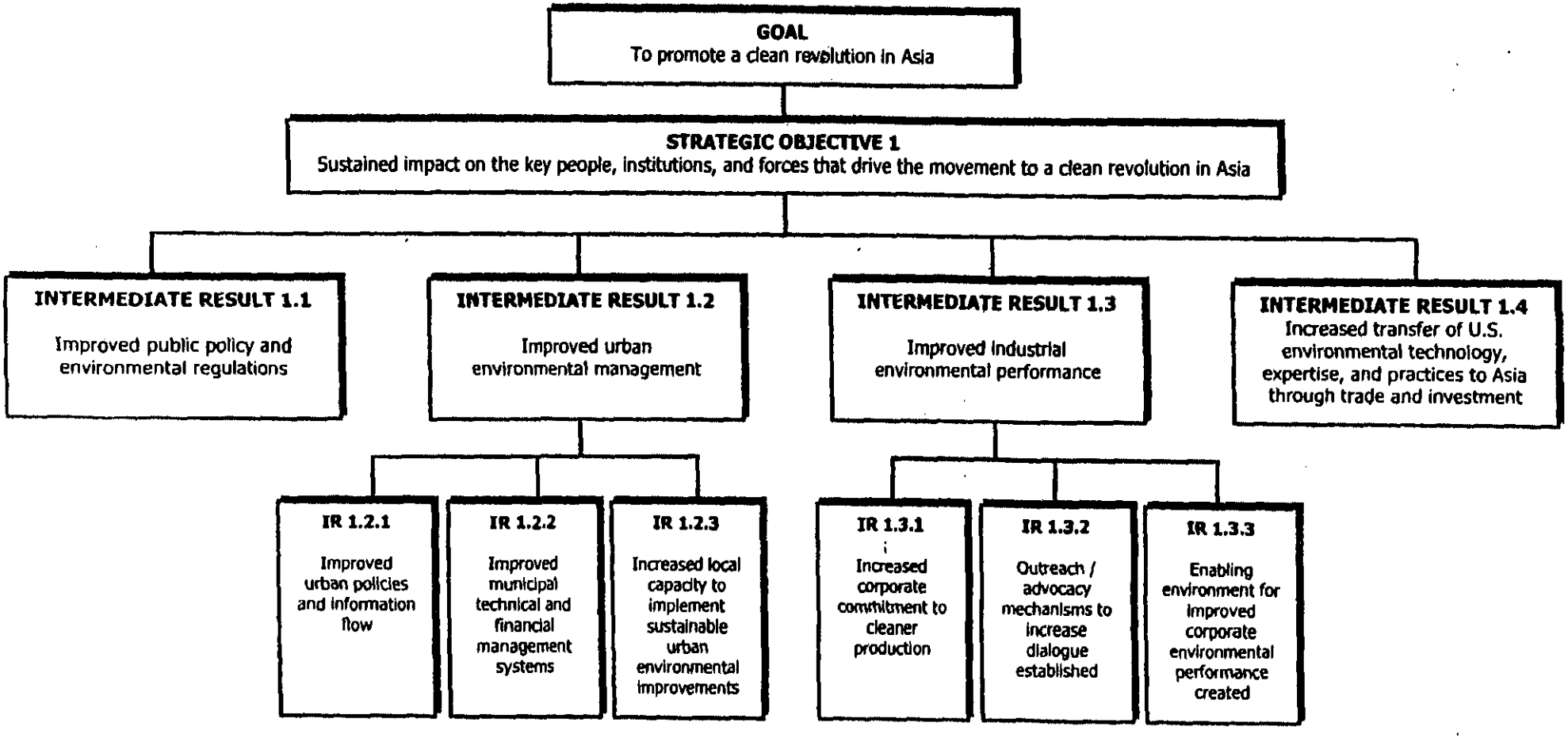
Magdalena N. Mook
Assistant Director and International Projects Coordinator
Trends Research and Response Group
The Council of State Governments

David Leibson
U.S.-Asia Environmental Partnership
PADCO, Inc.

John Michael Kramer
Program Manager
Environment Services Group
PADCO, Inc.

EXHIBIT 1

## US-AEP RESULTS FRAMEWORK



# EXHIBIT 2

## US-AEP Thailand Program Strategy Framework

| Program Area | Program Drivers | Key Partners & Resources | Key Objectives | Approach | Activities |
|---|---|---|---|---|---|
| **Public Policy** | | | | | |
| IR 1.1: *Improved public policy and environmental regulations* | Legal<br>Constitution<br>Decentralization Act<br>Official Information Act<br>Admin. Procedure Act<br>Public Hearing Act (draft)<br>Institutional<br>New environment ministry<br>World Bank EIDP Project<br>Public Pressure<br>Infrastructure project<br>Public health problems<br>Pollution discharge events | 1. MoSTE<br>2. EPA MOU<br>3. MDE<br>4. World Bank<br>5. Admin. Court<br>6. ELCT<br>7. EPAF | 1. Support in-country policy, legal, regulatory and institutional reform initiatives and plans<br>2. Build agency, NGO and community capacity to support implementation of reform initiatives | 1. Work with MoSTE, World Bank and other key partners to support and promote key in-country reform initiatives<br>2. Work with legal community to support implementation of constitutional reforms<br>3. Link core EPA and MDE capabilities to support reform agenda<br>4. Establish in-country and regional policy network<br>5. Integrate workshops, training, and study tours to build capacity | ADS I: Regulatory Dialogue<br>▸ Environmental Institutions Reform Project<br>▸ Administrative Court<br>▸ Council of State<br>▸ Environment Fund<br><br>ADS2: NGO Grants Program<br>▸ Federation of Thai Industries<br>▸ Environmental Law Institute<br>▸ Foundation for Environment and Anti-Air Pollution<br>▸ Council of State<br><br>ADS 3: Local Authorities<br><br>ADS 4: Pollutant Release and Transfer Registry |
| **Urban** | | | | | |
| **IR 1.2:** *Improved urban environmental management*<br><br>**IR 1.2.1:** *Improved urban policies & information flow*<br><br>**IR 1.2.2:** *Improved technical & financial management systems*<br><br>**IR 1.2.3.:** *Increased local capacity to implement sustainable environmental improvements* | Legal<br>Constitution<br>Decentralization Act<br>Infrastructure Development<br>ADB Solid Waste Program<br>Prov. Environmental Action Plans<br>Failed wastewater projects<br>Public Pressure<br>Demand for urban services<br>Public health problems<br>Institutional<br>Privatization Master Plan | 1. Kenan<br>2. ICMA<br>3. Bangkok, Rayong, Chiang Mai<br>4. Portland, Denver<br>5. MoSTE<br>6. TEI<br>7. MLT<br>8. Thai Local Self-Government Association<br>9. Environment & Anti-Air Pollution Found<br>10. Local Government Development Inst.<br>11. Chulalongkorn University | 1. Work with cities, NGOs, associations, and other partners to facilitate adoption of improved urban policies, systems, practices and plans<br>2. Establish and pilot test demonstration activities for improved urban policies, systems, practices and plans<br>3. Disseminate and replicate demonstration models | 1. Work with Kenan to identify, structure and coordinate U.S.-Thai partnerships that aim to transfer policies, systems, practices and plans<br>2. Work with U.S. and Thai NGOs, associations and agencies to support development and implementation of pilot activities, e.g., ICMA, EPA, TEI, Chulalongkorn<br>3. Replicate through MLT, TEI, MoSTE and other associations and agencies | ADS 1: Green Fleets<br>ADS 2: Resource Cities/Livable Cities<br>ADS 3: Chiang Mai Air Quality<br>ADS 4: Municipal Manager Certification<br>ADS 5: Urban Environmental Best Practices<br>ADS 6: Solid Waste<br>ADS 7: Municipal Energy Conservation<br>ADS 8: Urban Regional |

| Program Area | Program Drivers | Key Partners & Resources | Key Objectives | Approach | Activities |
|---|---|---|---|---|---|
| | | | | | |
| **Industry** | | | | | |
| **IR 1.3:** *Improved industrial environmental performance*<br><br>**IR 1.3.1:** *Increased corporate commitment to cleaner production*<br><br>**IR 1.3.2:** *Outreach and advocacy mechanism to increase dialogue established*<br><br>*IR: 1.3.3: Enabling environment for improved corporate environmental performance created* | Competitiveness<br>Government trade/industry policy<br><br>Recognition<br>ISO 14000<br><br>Best Practices<br>Government SME Policy<br><br>Compliance<br>New environment ministry Constitution<br>Revising NEQA | ERIC<br>UNC<br>Ford Motor<br>EPA<br>ASE<br>FTI<br>DIW<br>IEAT | 1. Work with key U.S. and Thai companies to promote cleaner production, clean technology, supply chain relationships, reporting, etc.<br>2. Partner with key Thai and international associations to disseminate information on best practices<br>3. Work with organizations and agencies to influence enabling environment for promoting clean technology | 1. Cultivate relationships and networks through key in-county partners to respond to specific opportunities (e.g., ERIC, FTI)<br>2. Develop targeted activities that integrate network development, capacity building, policy development and technology transfer opportunities through key U.S. partners (e.g., ASE and EPA). | ADS 1: Energy Efficiency (ASE)<br>ADS 2: Competitiveness and Sustainable Enterprise<br>ADS 3: Eco-estates (EPA)<br>ADS 4: Industrial Assessment |
| **Trade & Investment** | | | | | |
| **IR 1.4:** *Increased transfer of U.S. environmental technology, expertise and practices to Asia through trade and investment* | New Laws and Regulations<br>PCD, DIW, LTA, BMA<br>Revising NEQA<br><br>Improved Enforcement<br>MoSTE reorganization<br>PCD, DIW, LTA, BMA<br><br>Competitiveness<br>Government trade/ industry policy<br><br>Infrastructure<br>Hazardous waste | DOC Tools<br>Aquatech<br>A&WMA, WEF, etc. | 1. Provide targeted support to selected U.S. small and medium sized companies with a high potential for success in key market areas to maximize transactions<br>2. Establish relationships with Thai companies, agencies and organizations to enhance trade and investment opportunities<br>3. Ensure US-AEP policy, urban and industry program maximize trade and investment potential | 1. Provide core Commercial Service support a fee-based services to U.S. exporters applying market research information and other intelligence.<br>2. Apply US-AEP transaction-based tools to companies pursuing specific market opportunities (e.g., EEP, NASDA, trade shows. etc.)<br>3. Support development of local markets and improve market intelligence by building networks and influencing market drivers through policy, industry and urban programs | ADS 1: Thai participation in US Trade Shows (Weftec, Waste Expo and AWMA)<br>ADS 2: American Trade events in Thailand (Oregon, Ohio, Illinois, combined event)<br>ADS 3: Project to identify opportunities and companies<br>ADS 4: Efforts to match US companies |

# EXHIBIT 3

## TABLE OF CONTENTS

## Introduction to US-AEP Program

Created in 1992 on President Bush's initiative, the United States-Asia Environmental Partnership (US-AEP) is a public-private and interagency partnership, led by the United States Agency for International Development (USAID). Working through a network of public and private partners in Asia and the United States, US-AEP promotes the adoption of clean and efficient technologies, policies and practices by Asian industries, cities and governing entities and encourages a "clean revolution" in Asia.

US-AEP works to support the positive relationship between economic growth and environmental protection by integrating sustainable development, the environment and trade for the benefit of Asia and the United States, while building sustainable relationships that will extend into the future and throughout the region.

## US-AEP Regional Success Stories

**ISO 14001 Accreditation Systems Established in Nine Countries**

**Countries:** Hong Kong, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand

Effective environmental management is a key element in every country's strategy for realizing sustainable development and global competitiveness. The international community, through the ISO 14000 series of standards, has provided a universally-recognized Environmental Management Systems (EMS) platform and certification system designed to differentiate and certify industrial environmental performance. Until recently, Asian countries were not in the dialogue or able to meet the standards. In 1997, US-AEP began a series of interventions that resulted in the establishment and recognition of national ISO accreditation bodies in nine of the 11 US-AEP targeted countries. US-AEP's work was responsible for building the national capacity and necessary infrastructure to establish a prosperous and national means of certification and verification for EMS, rather than for those countries to rely on expensive, external service providers. As a result, all US-AEP target countries are engaged in the international rule setting of the ISO 14000 series, participating in the Developing Country Committee and/or other technical subcommittees, and in turn can provide their own industries and professionals with internationally recognized certifications. Additionally, through US-AEP interventions, the US and Asian Accreditation Boards have established lasting links to share experiences and best practices. Over 29 organizations were reached and nearly 100 people from 11 countries trained. In turn, there is a multiplier effect as these 100 individuals conduct multiple ISO 14001 EMS audits in the 11 countries. Out of the total cost of $300,000 for activities leading towards achieving internationally recognized bodies, US-AEP's contribution was $129,000.

**Multi-Country Livestock Pollution Addressed Through Regional Center**

**Country:** Taiwan, for Regional Use and Participation

The management of livestock wastes is a highly chronicled environmental, agricultural, public health and sensitive political issue worldwide. In 1996, during an US-AEP needs assessment, livestock wastes were ranked as a top priority in the agribusiness sector in Asia. As a result, US-AEP led and organized a public-private partnership of American equipment manufacturers and five U.S. universities to design an innovative treatment system in concert with the Asians that uses the latest American equipment and technology. The National Pingtung University of Science and Technology in Taiwan agreed to be the venue for the newly established "Environmental Center for Livestock Waste Management." The American equipment manufacturers contributed an estimated $500,000 of their technologies and services while the US universities contributed about $60,000 of engineering expertise. Impressively, Taiwan has invested nearly $2,000,000 for construction and operation of this Center as a sustained regional showcase of American leadership and technologies. Over the past two years, the Center has conducted training sessions on the American-sourced equipment for experts ranging from planners, regulators, designers, builders, and operators of livestock waste management systems from developing countries such as Vietnam, Malaysia, Thailand and Philippines.

More importantly, this innovative system has just completed technical performance testing by the five American universities. The results have exceeded expectations. For example, 95% of organics are removed which is comparable to a tertiary water treatment facility. In contrast, the traditional livestock "lagoon" method only removes an average of about 50% or up to 75% removal when the lagoons are spread over a large surface area - unfortunately, Asia does not have such large acreages as in the American mid-west. This system has a small "footprint" and occupies minimal space, it is more reliable and enclosed so there are no odors and public health issues of raw effluents overflowing during monsoons or hurricanes. Plus there is about 85% nitrogen removal in the effluent to minimize algal blooms and fish kills in rivers and lakes. The results of this system and its economic costs will be presented at an international livestock waste symposium in Penang, Malaysia from May 19-23, 2002. The US land grant universities predict that this innovative system and technology shall change the landscape of livestock waste management not only in the US and Asia, but worldwide, in the next decade.

**Critical Technical Inputs Mitigate Pollution in Rapidly Growing Asian Cities - The International Resource Cities Program (ICRP)**

**Countries:** Philippines, Thailand, Vietnam

Integrated city planning in developing countries is often non-existent or an after thought that inhibit their ability to sustain their growth in an environmentally safe, sustainable way. City officials desperately need access to the proper resources so that they can better plan, manage and implement sustainable solutions to environmental problems. US-AEP promoted a city partner planning model to help develop the International Resource Cities Program (ICRP), a program that links Asian cities with counterparts in the U.S. to help them

develop sustainable, environmentally sound city management plans. US-AEP supported the development of three resource cities partnerships in Cebu, the Philippines; Rayong, Thailand; and Haiphong, Vietnam.

Struggling to address a mounting municipal solid waste problem, the city of Cebu, in the Philippines, has partnered with the city of Fort Collins and Larimer County, Colorado to design a framework for a 10-year comprehensive solid waste management plan, reduce the volume of waste entering the landfill, and initiate two pilot projects for recycling and composting. The city of Rayong, in Thailand, partnered with Portland, Oregon, a model city for urban planning, growth management and environmental protection to strengthen municipal financial management and citizen involvement in city processes. As a result, Rayong created a citizen budget review committee modeled after its Portland counterpart. In an effort to manage growth, develop its tourism sector and provide adequate urban services, the city of Haiphong, Vietnam, has partnered with Seattle, Washington, to develop a comprehensive master plan for the city. In support of this effort, Haiphong has received three months of in-country technical assistance from a Seattle city planner on urban and transportation planning, housing development, industrial development, and eco-tourism.

Under the ICRP, U.S. cities, counties and associations continue to partner with Asian cities to provide technical assistance to improve professional municipal management, support participatory and inclusive governance, enhance economic development, promote sound financial management, and improve the delivery of environmental services. All three cities were strengthened by working with their respective resource city to better plan, manage and implement sustainable solutions to the environmental problems caused by rapid expansion.

US-AEP's efforts have resulted in the development of environmentally sound, sustainable city planning for all three of these cities, positively impacting the lives of nearly 5 million people. In addition, the partnerships established between these cities have served to inspire similar partnerships between the U.S. and multiple rapidly growing Asian cities.

**Summit Inspires Commitment and Plans of Action from Asian Officials in 29 Countries**

**Countries:** Regional – participants came from India, Indonesia, Thailand, Vietnam, the Philippines, Bangladesh, Cambodia, China, Japan, Korea, Malaysia, Singapore, Sri Lanka and several Pacific Islands

One of the most pressing issues facing developing Asian countries today is a lack of knowledge on the part of local leadership in terms of achieving sustainable urban development. In response to this, US-AEP co-founded the bi-annual Mayors' Asia-Pacific Environmental Summit (MAPES) and its sister organization, the Asia-Pacific Urban Institute (APUI). MAPES is a unique forum for Asian urban leaders to commit to action to improve their cities, exchange lessons, build relationships and create positive change. APUI is an initiative built on the substantial foundation of partnerships and programs established from MAPES. Its purpose is to integrate MAPES as part of a comprehensive cycle of training, expert advice, partnership development and policy support for governors, mayors and city management executives who make exceptional commitments to action in the fields of poverty alleviation and sustainable development.

Hosted in Honolulu, Hawaii, both the inaugural MAPES Summit in 1999 and the following Summit in 2001 were attended by more than 400 delegates, representing over 100 cities from 29 countries. The Summits highlighted the essential role of political leadership and personal and professional commitment in achieving urban sustainable development. At both Summits, each participating mayor registered "Mayor's Commitments" to undertake specific, concrete activities to implement the Summit's findings in their cities. As a result, 43 Mayors and Governors announced commitments in 1999 and 2001 to undertake environmental improvement activities in their jurisdictions.

APUI's first Executive Seminar focused on Integrated Water Resources Management (IWRM), a participatory planning and implementation process in which stakeholders meet a region's long term needs for ecologic and economic water resources. A select group of 54 city leaders and water managers from the Philippines, Thailand, India, Vietnam, Indonesia, China and Cambodia participated in the 4-day seminar. The event closed with representatives from 27 participating local governments pledging commitments to address water sanitation issues in their cities. The commitments garnered at both the Summits and the Executive Seminar, if fully implemented, will impact over 65 million people living in urban areas in 7 Asian countries.

**Helping Children by "Getting the Lead Out" Throughout the Region**

**Countries:** Vietnam, the Philippines, Indonesia

The continued use of leaded gasoline creates both pollution and public health problems for Asian nations. Human exposure to leaded fuel can result in respiratory illnesses, increased infant mortality, and premature deaths among adults as a result of heart attacks or strokes. Statistics also link increased blood levels of lead with anemia and a decreased IQ in children. US-AEP determined that in order to assist Asian countries in improving their air quality, key activities needed to be undertaken in the areas of Policy, Partnership and Public Outreach. Three countries in particular have benefited from US-AEP's efforts: the Philippines, Vietnam and Indonesia.

In 2000 and 2001 in the Philippines, US-AEP helped conduct several workshops on public awareness for clean air using a module from USEPA. US-AEP also offered financial assistance in the form of grants to cover logistical costs not included in government and private sector funds. As a result of these efforts, the Coalition for Clean Fuels was formed. The Coalition is a diverse group of private, NGO and government players to develop a coordinated public awareness raising effort to promote clean air. US-AEP spearheaded a public outreach campaign in Metro Manila that was launched in November 2001 and is now ensuring public acceptance of the elimination of leaded gas. The Coalition for Clean Fuels has been instrumental in developing a detailed campaign plan and strategy, and a plan to develop a wide-reaching, institutionalized certificate course on awareness training.

Vietnam has also seen success in this area. Through US-AEP's support, Vietnam has accelerated its phase out of leaded gasoline from 16 years to six. The country has also begun a public awareness campaign similar to the Philippines' campaign. In Indonesia, the Vehicle Emissions Action Plan was initiated in 2001. The Plan contained several activities and workshops and resulted in the creation of a Jakarta Action Plan, which has already been put into force and is projected to be completed in the rest of Indonesia before the end of 2003.

With US-AEP's help, lead phase out of gasoline in the Philippines, Vietnam and Indonesia was the first step toward improving the air quality in the region. Lead levels in Manila's atmosphere have already decreased. Indonesia has seen the development of new partnerships between all levels of government in Indonesia. The lives of millions of people in these countries have already begun to improve and the continued success of the phase-out programs will undoubtedly result in better health and quality of life for Asian children.

## US-AEP's Regulatory and Public Policy Program Successes

**Environmental Regulatory Dialogue Sends Asian Polluters a Strong Message**

**Countries:** Regional – Thailand, Philippines, Vietnam, Indonesia

Effective policies and laws can have far-reaching, long-term impacts on the environment, human health and economic growth. The US-AEP Environmental Regulatory Dialogue is a field-based regional public policy initiative that catalyzes meaningful reforms through targeted assistance to senior agency officials, legislators, judges, environmental groups, industry leaders, academics and the media.

US-AEP, EPA and its partners join with Asian agencies and organizations to help them: (1) set policy priorities; (2) establish stakeholder working groups; (3) support formulation of draft laws or policies and initiate partnerships via video-conferences and overseas observational programs; and (4) organize workshops to refine drafts and build consensus. Since 2001, US-AEP has catalyzed over 10 major legal and policy advances in public participation, community involvement, conflict resolution, economic instruments, enforcement, decentralization and institutional reform.

A visit to the U.S. by Thai officials along with follow up workshops contributed to the development of a ground-breaking Public Consultation Law that directly engages the public in environmental decisions. With the support of US-AEP, the Thai Council of State, which drafts legislation, is going even beyond U.S. practice with an internet/mail campaign soliciting public comment on the new law. Through agency to agency exchanges with Thailand, Vietnam's National Environment Agency is incorporating international best practices in its new Environment Fund. Building partnership between Thailand and Vietnam is just one element of US-AEP efforts to assist in launching this new fund, which will provide incentives for environmental investments and enforcement.

Collaboration with the Philippines Lake Laguna Development Authority is leading to an action plan for community based clean up and enforcement through River Councils established by the Authority in 18 of the lake's 24 sub-basins. The work complements new World Bank pilot lending to strengthen the Authority's overall environmental management capabilities.

The Regulatory Dialogue is having real impact. A recent landmark ruling by a judge participating in a US-AEP Forum on the Environment resulted in the closing of an illegal landfill in Thailand, establishing a floor for enforcement and sending a clear message to polluters and regulatory agencies. The judge attributes US-AEP linkages to U.S. and Asian judges as instrumental in helping her make the decision.

**Establishing the Greening of Industry Network – Asia (GIN-Asia) Node in Partnership with the Environmental Research Institute of Chulalongkorn University (ERIC)**

**Catalyzing Sharing of Best Practices via the Asia Pacific Roundtable for Cleaner Production (APRCP) for Asian Countries**

**Countries:** Hong Kong, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, Vietnam and other Asian countries

## Establishing the Greening of Industry Network – Asia (GIN-Asia) node in partnership with the Environmental Research Institute of Chulalongkorn University (ERIC)

The Greening of Industry Network (the Network) was initially formed in 1991 to serve as an international association of professionals from academia, business, NGOs, and government. The Network focuses on issues of industrial development, environment and society and is dedicated to building a sustainable future. US-AEP went into action to ensure that the Network, which had existing centers at Clark University in the U.S. and Twente University in the Netherlands, also had representation in Asia.

Working with the Network, US-AEP identified the Environmental Research Institute of Chulalongkorn University (ERIC) as an Asian center to complement the activities of the Network's two existing centers. US-AEP provided financial and logistical support for the Network's new node (GIN-Asia) that includes representatives from all US-AEP countries. Altogether, the Network now comprises over 1,500 individuals representing academia, business, public interest, labor and government from 50 countries. The Network focuses on research to inform policy making, legislation and industrial strategies through an agenda of linked conferences, publications, communications and research initiatives.

For example, in June 1998, GIN-Asia sponsored a regional workshop to devise practical solutions to incorporate environmental considerations into the region's economic recovery strategies. The workshop received co-sponsorship from Thailand's MoSTE, PCD, DIW, and FTI, as well as the Philippines' EMB, UNEP, and the Asian Productivity Organization. US-AEP's initial financial contribution to the launching of the GIN-Asia node was $75,000 and this was matched by over $120,000 from ERIC. GIN-Asia's real success is in creating a vibrant network where Asian and other international champions of industrial environmental management and sustainable development can freely exchange ideas and practices and can integrate and incorporate these concepts into the academic curriculum for future generations.

## Catalyzing Sharing of Best Practices via the Asia Pacific Roundtable for Cleaner Production (APRCP) for Asian Countries

Cleaner Production (CP) was introduced by the UNEP in 1989 as a new and innovative approach to resource conservation and environmental management. Implementing CP practices at the local firm level contributes to sustainable development and global competitiveness. However, Asian countries were not engaged in the CP-dialogue because most of the sharing of CP solutions occurred in the West. As a result, the techniques discussed were not necessarily applicable in the Asian context and Asian CP successes were not widely

disseminated. Recognizing this gap, US-AEP founded APRCP, as a tool to promote CP concepts and enable the exchange of CP best practices and lessons learned in Asia.

The first APRCP held in Thailand in 1997 brought together over 250 participants from 26 countries, laying the groundwork for APRCP to evolve into an ongoing regional entity and amplifying the region's awareness and commitment toward CP. APRCP's official mission is to foster dialogue 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 a website, newsletters, e-mail list servers, technical journals, special publications, conferences, and symposia. US-AEP has actively supported APRCP by providing strategic direction and guidance on the Board of Advisors. US-AEP provided financial support of $45,000 for fiscal years 2000-2002 and this has been leveraged with funding from ADB, Thailand's Pollution Control Department, and UNEP, among others. In addition, US-AEP is providing $20,000 of the $120,000 required for the upcoming fourth APRCP, in Yogyakarta, Indonesia, scheduled in October, 2002. US-AEP has supported APRCP by providing technical expertise, writing case studies, and conducting outreach and training – both during the Roundtable conferences and the myriad of interim activities. Most importantly, US-AEP has used APRCP as a multiplier to engage Asian stakeholders from all eleven of US-AEP's countries in the creation, implementation and dissemination of CP practices throughout Asia.

**Energy Efficiency Industry Partnership Program Strengthens Key Associations in Thailand**

**Country:** Thailand

Two new trade associations of energy efficiency companies in Thailand were created with assistance from USAEP in FY 2000 and 2001. One, the Energy Efficiency Development Alliance (EEDA), consists of large energy efficiency firms while the other, the Energy Conservation Entrepreneurs Association (ECEA), consists mainly of individual professionals and smaller firms. These associations provide a recognized platform from which energy efficiency businesses can work with the government on public policy and communicate the advantages of energy efficiency to the public.

The goal of the USAEP project is for them to become self-sustaining, influential forces in Thailand advocating energy efficiency over the long term. This goal is taking shape as the associations become valued by the Government of Thailand as sources of expertise and advice. One of the most effective ways firms can increase the adoption of their energy efficiency products and services is to help the government make its policies designed for this purpose more effective. This is especially true in Thailand, where the government has a myriad of well-intentioned policies on efficiency that have not been translated well into results.

EEDA has been actively engaging the Dept. of Energy Development and Promotion (DEDP) in dialogue about how DEDP can improve its implementation of energy efficiency policies. The members chose a set of policy issues it wanted to address and they are now working on the highest priority issue, helping the government to operationalize its revolving loan fund for energy efficiency projects. In May 2002, DEDP officers and representatives of EEDA and ECEA went on a tour to the U.S. to learn about successful U.S. financing mechanisms for energy efficiency, and more about how energy service companies (ESCOs) work in the U.S. In addition to public policy, the project also builds awareness in consumers of

the benefits of energy efficiency. Educational seminars are held for energy users with presenters from firms that supply energy efficiency equipment and expertise. By bringing together those with the demand for efficiency with those who supply it, the audience becomes aware of both money saving opportunities and the firms that can provide them, as well as raising the visibility of the associations. Targeted sectors so far have been hospitals, hotels, and factories (stressing medium-sized facilities).

## Urban Success Stories

**India Urban Programs Result in Energy Efficiency - Saving Millions While City Manager's Associations Gain Strength and Influence**

**Country:** India

### "Watergy:" Municipal Energy Efficiency in Pune, India

In Indian cities, providing water consumes about 60% of a typical municipal budget, while street lighting accounts for another 10 to 15%. The potential for energy savings from these two services is enormous, freeing up much needed capital for other services provided by the city.

Partnering with USAEP, the Alliance to Save Energy worked with the Pune Municipal Corporation (PMC) to help them develop strategies to reduce energy consumption while improving the efficiency of their operation. As a result, PMC has established an energy management team trained by the project, adopted a comprehensive metering and monitoring system, and begun implementing recommendations to improve energy efficiency.

The Alliance developed an automated energy monitoring protocol for the team to collect electricity and water consumption data, including a database format and an analysis protocol. Using these tools, EMC completed the first stage of data collection and analysis for Pune's Parvati Water Works, which accounts for the bulk of the city's total water intake. The Alliance also provided EMC with data collection and database formats for street lighting, for which data collection is in process.

To date, the work of the Alliance has saved the municipality more than 300,000 kWh of electricity worth 1.5 million rupees. The Alliance has also improved its metering and monitoring practices and is reconciling its consumption data with that of the state-run utility, Maharashtra State Electricity Board (MSEB). As a result of this management improvement, it was found that the utility overcharged Pune 6.5 million rupees, an addition financial boon of about $150,000 for the municipal budget.

### City Manager's Associations Gain Momentum

Local governments throughout Asia are struggling with the added responsibilities that have come with decentralization and, in some places, are in danger of losing the hard-fought authority and rights that have been granted to them. So, while significant work is required to advance decentralization policies, local governments are in great need of assistance to improve their capacity and level of professional management. US-AEP recognized that local government associations play a key role in that effort.

In three Asian countries, US-AEP is leading the effort to improve the capacity of local government associations to provide increased assistance to their membership. In Thailand and the Philippines, US-AEP is working with national-level local government associations. In India, US-AEP is assisting an existing provincial local government association in Gujarat and is leading the effort to form new associations in 4 other states (Andhra Pradesh, Karnataka, Tamil Nadu and Maharashtra). These associations are now improving their capacity to create and disseminate new ideas, best practices and performance benchmarks to local governments.

US-AEP is not stopping at country-based activities. In an effort to create a Professional Management Strategy for Associations, US-AEP and the International City/County Management Association (ICMA), are reviewing and documenting the current practices of local government associations in Asia. In 2002, US-AEP helped strengthen 66 NGOs, associations and networks organized around urban environmental issues. US-AEP also supported a number of professional environmental associations, such as the Solid Waste Association of the Philippines and the Indonesia Association of Sanitary Engineers. The associations being strengthened in India, largely due to US-AEP assistance, have a membership base of over 1,000 urban local bodies. Millions of people will benefit as these associations continue to gain the knowledge, expertise and strength necessary to guide local governments in the direction of environmentally sound and sustainable growth.

**Important Water Programs in Indonesia Change Lives: "WET" Delivers Clean Water to Half a Million People While "WILD" Brings Water Education to Women in Indonesia**

**Country:** Indonesia

**Water Efficiency Team (WET) Delivers Clean Water to Half a Million People**

Increased costs during the 1997 Asian financial crisis forced many of Indonesia's 300 water enterprises to distribute untreated water through their mains instead of shutting off the supply of clean water completely. US-AEP designed the Water Efficiency Team (WET) as part of the 1998 Rapid Response Plan to target Indonesia's weakest and most ailing water enterprises and find ways for them to keep the clean water flowing.

The WET recommendations were aimed at helping water enterprises achieve self-sufficiency, access funds for recommended improvements, and get local government approval of tariff increase linked to service improvements. WET visited and audited 55 out of Indonesia's 300 water enterprises. The WET project is estimated to have helped over 50 of these enterprises reduce costs and improve revenues by making recommendations on the financial, managerial and technical aspects of the operation and maintenance of the water facility.

As a result of WET's efforts, local government saved $10 million in subsidies to failing water enterprises. Implementation of WET's recommendations allowed water enterprises to successfully avert interruption of service to urban poor, thereby enhancing public health and economic activity. In turn, the recommendations created new knowledge that any water enterprise, given an adequate customer base and dedication to serving

customers, can achieve full cost recovery. Best of all, a total of 590,000 people enjoyed piped clean water, thanks to US-AEP's quick response to a very serious crisis.

**Women's Institutions for Local Development (WILD) Brings Water Education to Women in Indonesia**

Impoverished Asian women are usually responsible for all household activities, including water collection and usage. Unfortunately, they are the least likely to be educated on the benefits of using clean water for drinking, washing and cooking. US-AEP recognized this cultural gap and participated in the creation of the Women's Institutions for Local Development (WILD) project.

WILD has engaged local women's groups in Indonesia to strengthen the bond between municipal water enterprises and consumers, ultimately leading to the provision of better and more responsive public services to the poor. Through field visits to selected water enterprises, a team of female community organization specialists and trainers established a procedure to identify, contact, and motivate more than 100 local women's groups to register formal Water Conservation Forums associated with local water enterprises. Bridging the gap between the community and water enterprises, the forum members receive training and work on a voluntary basis to cooperate in community water-related education activities and provide feedback from the community.

This project inspired the participation of more than 100 volunteer local women's groups, including moderate Muslim groups, in the provision of piped water, through seven water forums. Under the follow-up initiative, WILLOWS (Women's Institutions for Local Leveraging of Water Supply), 30 more forums will be established. This work will eventually culminate in a network of more than 500 provincial women's groups. As a result, thousands of Indonesian families will benefit as the women in their cities and villages are educated on safe, efficient water usage.

**Maryland Forges a Clean Air Partnership with the City of Chiang Mai with Potential for Replication in other Thai Cities**

**Country:** Thailand

Looking to improve air quality impacting for the more than 1.5 million people in Thailand's second largest city, Chiang Mai, officials turned to US-AEP to help them understand the breadth of its pollution problems and to search for solutions. US-AEP used its partnership with the Council of State Governments (CSG) to assemble the right expertise to solve Chiang Mai's air quality problems. In September 2001, through the CSG program, US-AEP brought together Chiang Mai and the Thai Pollution Control Department (PCD) with counterparts from the Maryland Department of Environment (MDE), the U.S. Environmental Protection Agency, the U.S. Department of Health and Human Services, and the U.S. Environmental Training Institute.

The American team designed and carried out nine workshops to develop an action plan for improving and monitoring air quality throughout the city. The emissions inventory created by the City of Chiang Mai was the critical first step to identifying air pollution sources and developing improvements. The emissions inventory led to a public awareness campaign on the need for improved air quality and encouraged citizen

participation in reducing air pollution levels. Chiang Mai now has a strategic plan in place for long-term air quality improvements.

Maryland Department of Environment officials have also worked with the Thai Pollution Control Department to increase the national government's capacity to enforce regulations. Maryland and Thailand's working partnership, started in Chiang Mai through US-AEP's small investment of $173,000, is a model for air quality improvements in other Thai cities.

## US-AEP's Industry Program Success Stories

**TCAPP Generates Joint Projects to Reduce Greenhouse Gas Emissions in Korea**

**Country:** Korea

The Technology Cooperation Agreement Pilot Project (TCAPP) was launched by the U.S. Government to test an approach for transferring technologies that mitigate global climate change from the U.S. to developing countries. It is an interagency effort involving USAID, the National Renewable Energy Lab (NREL) and the Environmental Protection Agency (EPA).

In Korea, TCAPP focuses on two areas: energy efficiency and the capture and use of methane from municipal landfills. The project has been tremendously successful in generating joint U.S.-Korean projects that reduce greenhouse gas emissions, and has leveraged direct contributions to the project that dwarf those by USAEP. In FY 2000, for example, an investment by USAEP of under $60,000 generated almost $408,000 in direct contributions to the project, and in FY 2001 $45,000 in USAEP funding leveraged over $200,000 in direct contributions.

In the area of energy efficiency, as a result of the project, a U.S. energy service company (ESCO) called Sempra did a detailed analysis of the largest auto manufacturing plant in the world, the Hyundai Ulsan facility, and made a set of recommendations to increase efficiency. In order to build capacity for this type of audit in Korea, this work was done in conjunction with a Korean ESCO and the Korean Energy Management Corp. (KEMCO). Although Sempra's corporate headquarters decided to withdraw from Asia altogether, NREL found another ESCO, Honeywell Korea, to implement multi-million dollar energy efficiency improvements on the Hyundai plant. NREL also brokered a relationship between a large U.S. energy efficiency company, Trane, and a Korean ESCO, who are collaborating on two projects as a result. For the landfill methane component, TCAPP engaged the expertise of EPA's Landfill Methane Outreach Program (LMOP). Working with LMOP, the project brokered two partnerships of U.S. and Korean companies to do methane recovery projects in the cities of Taegu and Ulsan. Another site in Cheong-Ju is being studied by the TCAPP team.

**Public Health Hazard Abatement Through Improved Waste Management**

**Country:** India

When a large population is faced with serious economic and infrastructure deficiencies, biomedical waste poses serious public health risks causing increases in infectious and communicable diseases including HIV and Hepatitis B and C. In parts of India, this is a life threatening issue. US-AEP has been working to raise awareness about this issue and over the last 5 years, through multiple exchange and training programs, Indian public and private decision-makers have begun to focus more attention and resources biomedical waste problems. Mumbai hospitals have been able to reduce the 25 tons of medical waste generated per day by improved management practices. Through improved technology and handling techniques introduced by US-AEP West Bengal has reduced the weekly release of over 2 tons of untreated biomedical waste into unsecured landfills, thanks to US-AEP's trade lead system. These efforts have greatly improved the lives of millions in surrounding communities.

US-AEP has brought attention and technical assistance to this problem for several years. In February 1999, US-AEP attracted over 500 attendees and extensive press coverage on the radio, television and print by sponsoring the First National Conference on Bio-Medical Waste Management in Baroda; and the Southern Regional Bio-Medical Waste Management Workshop in Chennai, Tamil Nadu, after startling new regulations that imposed criminal sanctions on hospital officials not following proper waste management techniques. In 2002, US-AEP is helping to create a resource center for medical waste management which will be developed in cooperation with the Environmental Protection Training and Research Institute in Hyderabad, Andhra Pradesh.

**Thailand's Chemical Industry Adopts Responsible Care Code of Conduct**

**Country:** Thailand

Prior to US-AEP's involvement, the chemical industry in Thailand was unaware of its responsibility to ensure that employees, local communities, and the environment were protected from chemical waste. Since 1997, US-AEP has been on the ground in Thailand and throughout Asia working with the National Chemical Industry Association promoting the concept of Responsible Care [1]. What makes this initiative so unique is its public dimension; companies are required to make a commitment to the general public, not just to their shareholders and employees. The Thailand Chemical Industry Club's (TCIC) initial application for the adoption of Responsible Care (RC) by the International Council of Chemical Association (ICCA) was denied. However, through US-AEP's assistance, TCIC was successful in its re-application to establish RC-Thailand. From 1997 to 2000 there were 400 participants in various workshops. Starting with only 8 Responsible Care company members in 1997, RC membership increased ten-fold by 2001 to 83 member companies in three regions of Thailand.

1 Responsible Care (RC) is a set of voluntary initiatives undertaken by the chemical industry to help ensure that employees, local communities, and the environment are protected through responsible research, manufacturing, handling, and ultimate disposal of chemicals and chemical products.

For US-AEP's small investment of $10,000, a program was developed which will have great impact on the health and well being of the citizens of Thailand.

**Catalyst for Multinationals Considering Implementing Greening the Supply Chain**

**Countries:** India, Philippines, Thailand, Indonesia, Malaysia, Vietnam, Taiwan

Through a variety of environmental and cost-saving initiatives, private sector companies are starting to work on environmental initiatives with their suppliers to "green their supply chain" and are leveraging scant resources to reach small and medium enterprises in developing countries, increasing energy and water conservation and improving environmental practices.

Over the last 7 years, US-AEP has completed a number of Greening the Supply Chain (GSC) activities in 7 countries. "Factory Walk Through" was a video produced under a US-AEP grant of $12,000 to the Federation of Thai Industries and was used a model for developing an ongoing training program in housekeeping and environmental best practices. With this modest investment, US-AEP made itself a world leader in GSC and gained exposure to more than 18 multinationals over the years.

In carrying out these activities, US-AEP has worked with a number of companies as champions to Green the Supply Chain including such giants as Nike, Gap, L.L. Bean, Levi Strauss, and Ford Motor Company Philippines, through its partner, the Business for Social Responsibility (BSR). Other US-AEP GSC partners have included United Technologies Corporation, Nestle, the PAN group in Thailand (suppliers to Nike and Reebok), the P. T. Agro Manunggal Group in Indonesia, Levi Strauss & Co., Texas Instruments, Hewlett-Packard, Gap, Inc., Seagate, Lucent Technologies, Arvind Mafatlal Group in India, PNOC Petrochemical Development Corporation in the Philippines and Pilipinas Shell Petroleum Corporation, among others. In Taiwan, US-AEP developed and finalized the program for the Electronics Industry Printed Circuit Board Training to promote the GSC concept and adoption of Environmental Management Systems and Clean Technology in Asia's printed circuit board industry.

A multiplier effect is built naturally into GSC--Nestle reached over 3,000 of its suppliers and Ford Motor Company Philippines, Inc. reached all of its first tier suppliers and some of the second tier suppliers to green their supply chain. It is estimated that all these activities leveraged over $1 million from the multinationals since 1995.

**Financial Due Diligence Raises Environmental Standards**

**Countries:** Philippines, Sri Lanka, Samoa, Indonesia, Thailand

Throughout Asia the industrial sector accounts for an increasingly larger share of overall growth with most of that growth financed by private sector debt financing. US-AEP has recognized that Asia's management of those lending and investment flows is critical to sustainable development.

Acting on that insight, US-AEP nurtured multi-year partnerships with key banks and with the Association of Development Finance Institutions of the Asia Pacific (ADFIAP) to promote environmental due diligence within the investment community. ADFIAP is the key umbrella organization for development finance in Asia. With 70 member-institutions in 34 countries, ADFIAP is working in partnership with US-AEP to ratchet up the environmental standards of its members to that of international financial institutions.

The results to date have been impressive. In the Philippines, for example, the Landbank has set up a specific Environmental Unit tasked with environmental analysis of all project financing, expanded their capacity to finance waste and water projects and incorporated environmental factors into its lending operations. With assistance from US-AEP, Landbank also expanded its Environmental Unit, accredited 13 environmental consulting firms that can be tapped for technical evaluations, and conducted environmental training programs for over 2,000 people from its own project staff and client banks.

Also in the Philippines, the Development Bank of the Philippines (DBP), one of the country's largest financial institutions, launched a code of environmental conduct for all banks that borrow from them. DBP has also revised their credit evaluation forms to incorporate environmental issues. They are also using interest rates as an instrument to encourage borrowers to include environmental considerations in their investment decisions. These include environmental targets such as pollution reduction in the loan agreement. In Sri Lanka credit analysis procedures were revised at the Bank of Ceylon to include environmental factors.

More broadly US-AEP's current partnership with ADFIAP concentrates on getting all members committed to environmental good practice. Specifically we are promoting a commitment of each member institution to adapt an environmental policy that will be approved by the Board of Directors and incorporated to its overall business philosophy. Each member will also designate a bank officer or a unit to be the "environment point person (s)" in each bank to look after environment issues and concerns in its day-to-day operations. All members have been surveyed and ADFIAP and its members have funded international training seminars to reach this goal.

During the last year many institutions have signed up and made commitments to environmental good practices. Some of the banks include the Trade & Investment Corporation of the Philippines, the DFCC Bank (Sri Lanka), the Development Bank of Samoa, the Bank Ekspor Indonesia, and the Industrial Finance Corporation of Thailand. In addition others have pledged to follow suit. Some of these include the National Bank for Foreign Economic Activity of the Republic of Uzbekistan, the Nepal Development Bank Limited, Asia Trust Bank and the Vietnam Export-Import Bank

So far nearly half the ADFIAP's 76 members have made these commitments of corporate environmental policy and environmental officers. Further plans are in place to achieve 100% compliance. The on the ground result has been a significant improvement in the environmental analysis that banks conduct prior to financing industrial lending. Even more important, this means a reduction and mitigation of pollution in Asian societies and direct benefit to the thousands of people working within or living near industrial sites.

**Arsenic Removal for Safe Drinking Water**

**Country:** India

Arsenic poisoning has become an epidemic in the West Bengal region of India (as well as Bangladesh), where the naturally occurring arsenic has been contaminating the underground water supply. Since 1998, US-AEP has been engaged in a series of activities aimed at the arsenic contamination in this region, where over 6 million people, in nine different districts of West Bengal, rely on groundwater wells as the primary source of drinking water.

US-AEP's activities have been focused in the transfer of arsenic removal technologies and expertise from the Unties States to India. After a variety of grants and exchanges gained the trust of Indian decision-makers, the next challenge was to identify appropriate technologies with compact systems that could operate effectively and would require low investment and operational costs. US-AEP's Environmental Technology Network for Asia (ETNA) program identified two companies with compact treatment systems with arsenic removal capabilities. In 2001, the Rajiv Ghandhi Drinking Water Mission approved the purchase of water treatment equipment from two US companies. This approval was granted after UNICEF recognized the creditability of both technologies for the removal of arsenic from drinking water. US-AEP has also contributed to the improvement of environmental management issues in the field, providing a targeted forum for exchanges of ideas and practices and facilitating technology demonstrations.

For an expenditure of $260,270 by US-AEP, over 6 million people have been impacted in West Bengal alone, which is a cost of less than $0.04 per person.

**Potable Drinking Water for Millions of Disadvantaged People**

**Country:** Philippines

An important issue in making potable drinking water available and affordable to disadvantaged populations is preventing illegal taps and loss due to faulty distribution systems. Until US-AEP stepped in with its partners, the Ford Metering Company and The Asian Development Bank, to provide technical expertise, know-how through up-to-date practices, and equipment, more than 60% of the potable water that went into the distribution system in Manila and Maynilad was either lost or stolen.

In 2001, Maynilad Concession signed an agreement with Ford Metering Box Company (IN) for the supply of equipment, including repair clamps, service connections, and meters. Additional service connections made possible expansion of the distribution network to provide potable water access directly to households on the west side of the Manila.

**Taiwan Cement Complies with New NOx Standards to Improve the Lives of Millions**

**Country:** Taiwan

One of the leading contributors to Taiwan's environmental problems is Nitrogen oxide (NOx), a group of highly reactive gases. In humans, exposure to these gases effects breathing and the respiratory system, and causes damage to lung tissue and premature death. In the environment, NOx causes acid rain, which poisons soils and water bodies (making the water unsuitable for some fish and other wildlife), and damages trees. NOx also causes smog, contributes to global warming and speeds the decay of buildings.

In an effort to reduce the presence of NOx, in 1998 the Taiwan EPA set tough new standards which forced Taiwanese industries to reduce their NOx emissions or face substantial and possibly financially debilitating fines. Taiwan Cement, faced with these new environmental regulations, had to reduce its NOx emissions by more than 50% to meet the new standards. In fact, Taiwan Cement determined that it had to reduce its NOx emissions by 4000 metric tons per year- a challenge that required a unique combination of system design, modifications, and changing operational practices.

The cement manufacturer turned to US-AEP to help them find most effective NOx reduction technologies. With US-AEP's assistance, they examined various technologies and operational practices in the United States. In the process, they were introduced to the advanced technologies of Fuel Tech, Inc. Fuel Tech recommended combustion modifications and Selective Non-Catalytic Reduction for reducing the NOx emission levels. Within two years, all the proposed modifications were made. Thanks to US-AEP's grant of $22,000 and U.S. technology, Taiwan Cement has reduced its NOx emissions by nearly 50% and is in compliance with emission standards, saving themselves hefty fines and contributing to the improvement of the lives of over 22 million Taiwanese people.

EXHIBIT 4

## North Carolina-Taiwan:
## Environmental Center for Livestock Waste Management
## A Lesson in University Teamwork

Project Dates: June 2000- March 2003
North Carolina State University (CALS Animal Waste Program), Oregon State University, Iowa State University, Purdue University, Illinois Institute of Technology, USDA, A.O. SmithAeromix Systems, Agri-Bio Systems, Bioweb, Chicago Industrial Pump Company, Insta-Pro, Oceco, RayDot, Equipment Manufacturers Institute
National Pingtung University of Science and Technology
Grant Award: $150,000
Match: $925,000
Total Investment: $1,075,000

Plans for the US-AEP led Environmental Center for Livestock Waste Management (ECLWM) began in 1996 after pig farm waste was identified as one of South East Asia's major environmental problems. This partnership involved Taiwan, which invested nearly $2 million into the Center's operation and construction, five U.S. universities who donated their engineering services to design an innovative waste treatment system and US manufactures who donated equipment.

The US Department of Agriculture provided extension and engineering services to explore the reserve transfer of the system's benefits for American farms and policy makers. The construction began in Taiwan at the National Pingtung University of Science and Technology in 1999 and is officially open. (See picture above).

**This project proposed** continued involvement of the U.S./Taiwan team during the first three years of the Center's operations. The Center is envisioned as the foundation of excellence for research, training and demonstration of advanced livestock waste management. The major objectives of this project are to advance the state of the art swine production/waste management by conducting research, demonstrations, evaluations, technical training and student and faculty exchanges with cooperating universities. The project is focusing on the issues of odor, water and air quality, animal waste utilization, alternate treatment technologies, pathogens, food safety, animal nutrition and ecosystem effects.

The US team continues to provide support for the Fourth International Livestock Waste Management Symposium and Technology Expo to be held in Penang May 19-23, 2002. The U.S. team is cooperating with Taiwan to help put together presentations on the goals and results of treatment technologies being evaluated at the Environmental Center for Livestock Waste Management.

US-AEP

United States Agency for International Development

# US-AEP Environmental Regulatory Dialogue

## Expanding Regulatory Dialogue in Asia – Partner Update – Spring 2002

### Catalyzing Improved Laws and Policies

Under the Environmental Regulatory Dialogue program, the U.S.-Asia Environmental Partnership (US-AEP), the U.S. Environmental Protection (EPA) and the World Bank and other donors are working to expand dialogue on the adoption of improved environmental laws, policies and institutions among Asian officials, judges, legislators, private sector leaders, local communities, environmental groups, universities and other practitioners and experts.

### Proven Country-Driven Approach

Under the Regulatory Dialogue, each year US-AEP and its partners join with in-country agencies and organizations to implement an integrated series of activities that support the development of draft laws, policies, or action plans by following a proven country-driven approach:

Step 1: Identify and define priority reform areas;
Step 2: Establish stakeholder working group;
Step 3: Formulate draft policy with U.S. or Asian counterparts via video-conferences and observational tours;
Step 4: Organize in-country international workshop to refine draft law, policy, plan or recommendations.

### Regional Priority Reform Areas

Over the last two years, US-AEP has facilitated policy dialogue in Thailand, Vietnam and the Philippines in four priority policy reform areas:

1. Public Participation
2. Environmental Funds and Economic Instruments
3. Enforcement and Compliance
4. Institutional Reform and Decentralization.

While each country is at a different stage in policy formulation and implementation due to legal, institutional, political and social factors, all have a strong interest in exchange with regional and U.S. counterparts. What follows is a brief summary of major activities over the last six months in each of these four core areas for each country.

### 1. Public Participation

Strengthening public involvement in governmental decision-making is a key reform initiative in many Asian economies. While US-AEP has significant activities underway in Thailand and the Philippines, we are also developing or tracking new initiatives in Vietnam and Indonesia. In Vietnam, for example, US-AEP has helped facilitate the establishment of a stakeholder working group to initiate dialogue on a new policy

Gov. Christine Todd Whitman, U.S. EPA's Administrator, and Ambassador Darryl Johnson host Thai Senate, Supreme Administrative Court, agency and civil society leaders to discuss public participation.

> *"We are especially thankful for the continued support of US-AEP. I am so appreciative of their commitment to environmental protection in Thailand."*
>
> **Gov. Christine Todd Whitman**
> **Administrator, U.S. Environmental Protection Agency**
> **Bangkok, January 14, 2002**

on public participation in environmental decision-making and enforcement. In Indonesia, US-AEP is exploring approaches for supporting efforts by the Ministry of Environment in implementing a new Good Environmental Governance (GEG) program. Indonesian organizations and agencies are actively discussing new laws and policies on access to information and public participation.

### Facilitating Dialogue with U.S. EPA Administrator

In Thailand, US-AEP and EPA work with senior officials and decision-makers to promote strategies for strengthening public involvement in environmental decision-making. As part of this program, in January US-AEP and EPA organized a luncheon meeting between Gov. Christine Whitman, EPA Administrator, during her visit to Bangkok, and partners from the Thai Senate, Supreme Administrative Court, environmental agencies and civil society. Hosted by Ambassador Darryl Johnson, discussion focused on sharing experience in public involvement, and strengthening cooperation to ensure continued achievements in promoting effective reforms.

EXHIBIT 6

# US-AEP INDONESIA

## FOUR YEARS OF US-AEP WATER/WASTEWATER INITIATIVES AS AT APRIL 2002

| Project | Description of Project | Follow-on AID | AEP Invest | AID Invest | AEP Lev | AID Lev | Results to Date |
|---|---|---|---|---|---|---|---|
| *COMPLETED PROJECTS* | | | | | | | |
| WET | Water Efficiency Team | LGWS | 380 | 5800 | 52 | 5 | $13 million in new connections, $7 million in subsidy reduction |
| WETTER | Low Cost Production Increase | In LGWS | 60 | 0 | 3 | 0 | Production increased up to 70% saving $180,000 in 3 locations |
| WISE | Customer Satisfaction Survey | In CLEAN | 140 | 20 | 1 | 7 | Thirty surveys conducted to date for $150,000 for planning |
| WILD | Local Women's Groups | WILLOWS | 50 | 248 | 5 | 0 | More than 140 new womens groups link water to provincial people |
| WEFT | Enterprise Managers Training | In LGWS | 20 | 0 | 2 | 0 | More than 47 enterprise directors paid $32,900 tuition in FY 01 |
| *ONGOING/APPROVED PROJECTS* | | | | | | | Notes |
| TOMCAT | Certification of Water Treatmt Operators | | 25 | 0 | | | Certification of water treatment operators=professionalism |
| UPDATE | Urban Poor Water Access Study | | 140 | 0 | | | Can help urban poor get water while increasing revenues |
| SAVER | Industrial Estates Production Increase | | 60 | 0 | | | Efficiency possible in industrial estates using re-rating |
| PREP | Decentralized Training Study | | 35 | 0 | | | Decentralization of training is cost effective/sustainable |
| WEFT-2 | Lower Level Training Modules | | 22 | 0 | | | There is positive leverage to training lower level skills |
| VIP | Vietnam/Indo/Phils Water Network | | 11 | 0 | | | There is a felt need for utility network regional cooperation |

*Acronyms:*

| | |
|---|---|
| CLEAN | Community Leveraged Environmental Action Networks |
| LGWS | Local Government Water Services |
| PREP | Pre-feasibility Reconaissance for Education in the Provinces |
| SAVER | Sustainable Appreciation of Value through Efficiency and Re-rating |
| TOMCAT | Treatment Operators/Managers Certification and Training |
| UPDATE | Urban Poor Data Acquisition and Technical Evaluation |
| VIP | Vietnam-Indonesia-Philippines Water Associations Exchange |
| WEFT | Water Enterprise Functional Training |
| WET | Water Efficiency Team |
| WETTER | Water Efficiency Team Technology for Establishment of Re-rating |
| WILD | Women's Institutions for Local Development |
| WILLOWS | Women's Institutions for Local Leveraging of Water Supply |
| WISE | Water Indicators for Satisfaction Evaluation |

United States Agency for International Development

# US-AEP Environmental Regulatory Dialogue

## Promoting Dialogue on Environmental Dispute Resolution in Thailand

### Expanding Regulatory Dialogue in Asia

Under the Environmental Regulatory Dialogue program, the United States-Asia Environmental Partnership (US-AEP) and its partner the U.S. Environmental Protection Agency (EPA) facilitate access to international best practices through exchange between counterpart agencies, organizations and practitioners. In particular, US-AEP works closely with partner agencies and organizations through collaborative activities, such as conferences, workshops, study tours, teleconferences and strategic partnerships.

### ADR and the Environment in Thailand

Despite the establishment of a comprehensive legal framework for environmental management, there are serious and on-going controversies in Thailand related to industrial pollution, and the siting of municipal waste and water treatment facilities. As demonstrated by the recent Administrative Court decision to enjoin operations at the Ratchathewa landfill in Bang Phli, parties are increasingly resorting to the courts.

Alternative dispute resolution (ADR) enables the settlement of disputes outside of the courts. Through ADR, parties resolve controversies through facilitation, mediation, or consensus building. For environmental disputes, ADR has proven to be effective strategy for communities, industry and government to avoid costly and time-consuming litigation, and build enduring partnerships.

Thailand has significant experience with ADR through a range of agencies and organizations, including the Courts of Justice, Office of Attorney General, Ministry of Science, Technology and Environment (MoSTE), and King Prajadhipok's Institute (KPI), a research body attached to the Parliament.

### Promoting ADR and the Environment

Building on the Thai experience with ADR, US-AEP and EPA will work in partnership with MoSTE and KPI to implement a series of activities promoting the resolution of environmental disputes through ADR with the following objectives:

- Develop a policy and legal framework for environmental agencies to implement ADR;
- Identify capacity building needs and develop a capacity building program; and
- Establish strategic partnerships between U.S. and Thai environmental agencies and organizations.

In developing activities to meet these objectives, we wil establish a working group consisting of agencies, industry environmental groups, communities and academia.

Thai Members of Parliament, senior judges, prosecutors, agency officials, academics and environmental groups establish a new partnership through a teleconference with EPA experts on alternative dispute resolution.

### Program of International Collaboration

In October 2001, as a first step, KPI, US-AEP and EPA organized a teleconference between Thai agencies and organizations and EPA experts to begin a dialogue on ADR policy and practice for the environment.

During 2002 MoSTE, KPI, EPA and US-AEP will collaborate on the following activities:

- Teleconference — To continue technical exchange between the working group and EPA experts on priority issues and strategies for cooperation (March 8).
- Study Tour to U.S. – To strengthen capacity and build partnership, key Thai officials and experts will meet with EPA and other agencies and organizations while attending a conference on ADR in Arizona (May 11-18).
- International Workshop in Bangkok – To exchange views on a proposed policy framework and capacity program for ADR for the environment, and strengthen international partnership (August 21-22).

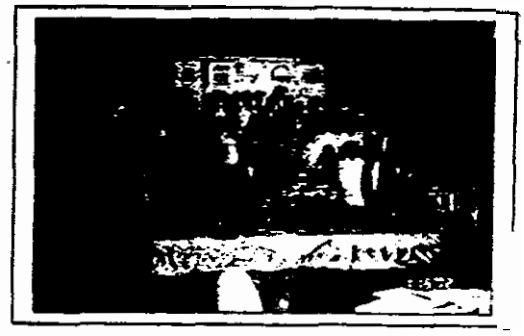
**For Additional Information**

Watcharee Limanon
US-Asia Environmental Partnership
Bangkok
Tel/fax: 02 253 7106 Mobile: 01 629 3786
E-mail: wlimanon@inet.co.th

EXHIBIT 8

## Maryland-Thailand Air Quality Initiative Project
## Multi-level Partnerships Implement Decentralization

Project Dates: June 2000- August 2002
Maryland Department of the Environment
Thailand Pollution Control Department
Grant Award: $150,000
Match: $193,818



For the past three years, the Maryland Department of the Environment has been working in partnership with the Thailand federal Pollution Control Department, USEPA, US-AEP, and the Thai government's Entrain program to build the capacity of Thai federal and local environmental protection staff to address air quality challenges. One of the strengths of this project is the commitment to a strong partnership between Maryland and Thailand.

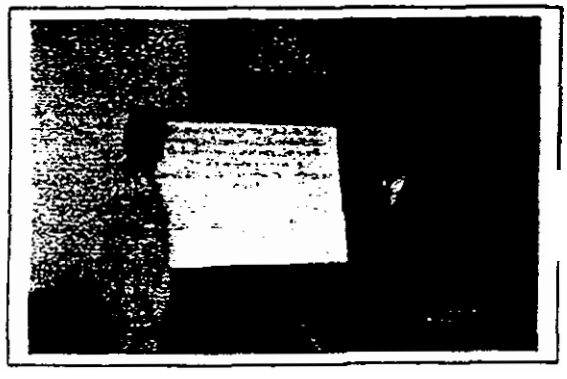
On September 11, 2001 the Maryland staff were at a reception at the US Consulate in Chiang Mai representing the true commitment to the partnership with the Thailand Pollution Control Department, even in the face of national tragedy.

> *Unfortunately, the great feelings of hope and good will that we had at the reception were chased away by the terrible events in the United States. Even while we tried to make sense of the terrorist attack, we knew that there are so many good stories to tell the world of Americans and our government working with different countries and citizens throughout the world to improve the quality of life everywhere. Despite our anguish, we committed ourselves to ensuring that the Workshop the next day would be a great success, a triumph of hope and change – and it was.*
> John Mitchell, MDE Special Assistant

The strong partnership developed over the past two years was exemplified by numerous exchanges. Thai officials visited the United States nine times for onsite visits and training by Maryland's Department of the Environment. Maryland sent teams to Thailand five times to conduct training workshops and seminars.

Due to the strong partnership between the delegations, the project successfully met its goals. First, the partners developed and produced a model for air quality planning entitled the "Air Quality Management Plan" to address areas in air pollution sources where the public could take action to reduce air pollution in Chiang Mai. Second, the project built upon the existing Thailand Entrain program, an external program funded by the PCD to strengthen staff through international exchanges and training opportunities. The project's numerous workshops and exchanges significantly improved the quality and capability of the staff from the Thailand Pollution Control Department to handle their new responsibility. Third, the project strengthened communication and networking among Thai air quality protection staff from all levels of government including federal, provincial and municipal.

In the US, the Environmental Protection Agency has gradually shifted from a federally centralized approach to a state-centered program. States are more active than ever in taking responsibility for addressing their environmental concerns. MDE Secretary Jane Nishida accompanied the USEPA International Program Director to Thailand for the MOU signing with MOSTE, leading her state's commitment to Thailand. The Maryland DOE transferred the lessons learned from decentralization in the US experience to Thailand. In result, Thailand gradually delegated the responsibility for air quality management from federal control to its provinces and municipalities.



The final workshop in Chiang Mai, January 14-15, 2002 demonstrated the decentralization and partnership approaches to addressing environmental concerns. The highly intensive and interactive two-day event brought together individuals from the Municipal Government of Chiang Mai, the Thailand PCD and a cross-section of 80 community leaders. The attendees committed to the Pledge to make

Data collected to date gives the aggregate dollar value of **$222,319,708** resulting from trade show activities.

**Sales By Event**

| | |
|---|---|
| A&WMA | $2,072,649 |
| WEFTEC | $198,741,684* |
| WasteExpo | $21,505,375** |

* Includes a $192 million infrastructure project
** Includes a $15 million infrastructure project

**Cost-Benefit Chart for Trade Shows**

| Event | Total Grants Awarded | Total Value of Successes | Input/Output Ratio I | Input/Output Ratio II |
|---|---|---|---|---|
| A&WMA | $652,263 | $2,072,649 | $1-$3.18 | $1-$3.18 |
| WEFTEC | $754,628 | $198,741,684* | $1-$263.36 | $1-$8.93*** |
| WasteExpo | $440,622 | $21,505,375** | $1-$48.81 | $1-$14.76*** |
| **Total** | **$1,847,513** | **$222,319,708** | **$1-$120.33** | **$1-$8.29** |

* Includes a $192 million infrastructure project
** Includes a $15 million infrastructure project
*** This ratio does not include the two large infrastructure projects.

## Country Breakdown

**Hong Kong:**
Total Value of Successes: **$523,788** (4 Agent-distributor agreements, 1 Business Relationship, 14 Direct Sales)
Success Per Event: WEFTEC: 14 ($292,568) Water & Wastewater sectors
A&WMA: 5 ($231,220) Air Pollution & Wastewater
WasteExpo: 0

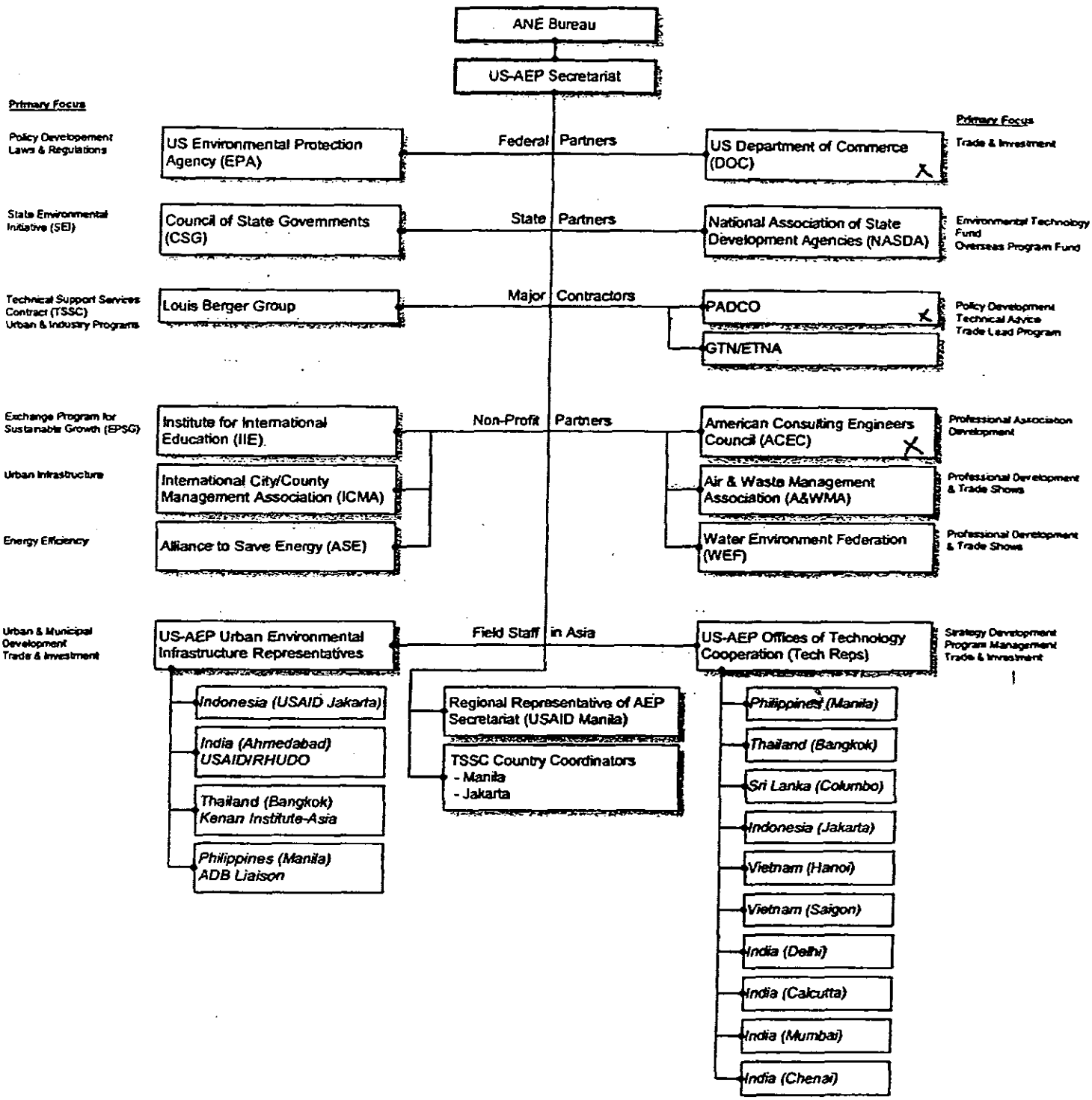
**India:**
Total Value of Successes: **$341,745** (2 Agent-distributor agreements, 2 Business Relationship, 3 Direct Sales, 1 Joint Venture)
Success Per Event: WEFTEC: 4 ($24,758) Water & Wastewater sectors
A&WMA: 1 ($0) Air Pollution
WasteExpo: 2 ($316,987) Solid Waste

**Indonesia:**
Total Value of Successes: **$655,000** (2 Business Relationship, 2 Direct Sales)
Success Per Event: WEFTEC: 2 ($655,000) Water & Wastewater sectors
A&WMA: 2 ($0) Air Pollution & Instrumentation
WasteExpo: 0



64

# EXHIBIT 10


ANE Bureau
US-AEP Secretariat
Primary Focus
Policy Development Laws & Regulations
US Environmental Protection Agency (EPA)
Federal Partners
US Department of Commerce (DOC)
Primary Focus
Trade & Investment
State Environmental Initiative (SEI)
Council of State Governments (CSG)
State Partners
National Association of State Development Agencies (NASDA)
Environmental Technology Fund
Overseas Program Fund
Technical Support Services Contract (TSSC)
Urban & Industry Programs
Louis Berger Group
Major Contractors
PADCO
GTN/ETNA
Policy Development
Technical Advice
Trade Lead Program
Exchange Program for Sustainable Growth (EPSG)
Institute for International Education (IIE)
Non-Profit Partners
American Consulting Engineers Council (ACEC)
Professional Association Development
Urban Infrastructure
International City/County Management Association (ICMA)
Air & Waste Management Association (A&WMA)
Professional Development & Trade Shows
Energy Efficiency
Alliance to Save Energy (ASE)
Water Environment Federation (WEF)
Professional Development & Trade Shows
Urban & Municipal Development
Trade & Investment
US-AEP Urban Environmental Infrastructure Representatives
Field Staff in Asia
US-AEP Offices of Technology Cooperation (Tech Reps)
Strategy Development
Program Management
Trade & Investment
Indonesia (USAID Jakarta)
India (Ahmedabad) USAID/RHUDO
Thailand (Bangkok) Kenan Institute-Asia
Philippines (Manila) ADB Liaison
Regional Representative of AEP Secretariat (USAID Manila)
TSSC Country Coordinators
- Manila
- Jakarta
Philippines (Manila)
Thailand (Bangkok)
Sri Lanka (Columbo)
Indonesia (Jakarta)
Vietnam (Hanoi)
Vietnam (Saigon)
India (Delhi)
India (Calcutta)
India (Mumbai)
India (Chenai)

# EXHIBIT 11

**Total Number of USG, Contractor and Cooperator Personnel Supported by US-AEP**

| | U.S. | Asia |
|---|---|---|
| **U.S. Government – Secretariat** | | |
| USAID/ANE Direct Hires (OE)* | 4 | |
| USDA RSSAs | 2 | |
| U.S. PSCs (Manila) | | 1 |
| AAAS Fellow** | 1 | |
| **U.S. Government – Other** | | |
| EPA | 2 | |
| GTN/ETNA (contractors) | 3 | |
| FSN (Sri Lanka) | | 1 |
| DOC*** | | 20 |
| RUDOs (contracts through) | | 2 |
| **Contractors** | | |
| Inst. For International Education | 12 | 2 |
| TSSC | 20 | 5 |
| EPIQ** | 0.5 | 1.5 |
| PADCO** | 1 | 1 |
| **Cooperators** | | |
| Council of State Governments | 1.5 | |
| National Association of State Development Agencies** | 2 | |
| Kenan Institute | | 1 |
| Alliance to Save Energy | 2 | |
| **TOTAL: 85** | **51** | **34** |

* One direct hire is leaving 20 May 2002 and another October 1st.
**Expires or funding ends in summer 2002, reducing the total by 8 to 77.
***Beginning in FY 2003, these staff will either move into Missions or be covered by an alternative contractual mechanism.

NOTE: The number is less than the count done last summer for three main reasons:

1) A streamlined TSSC, which combines several contracts into one.
2) A decrease in the number of USAEP field offices.
3) The last count included a "Part Time" column that captured all people doing any work on USAEP, including ones working very few hours for USAEP, artificially inflating the total.

EXHIBIT 12

# US-AEP' s Environmental Sectors

| | Improving Public Policy & Environmental. Regulations | Strengthen Institutions for Environmental Protection | Air Quality Improvement | Solid & Hazardous Waste Management | Water & Wastewater management | Industrial Environmental Management | Energy Efficiency |
|---|---|---|---|---|---|---|---|
| India | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Indonesia | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ |
| Sri Lanka | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| The Philippines | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Thailand | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Vietnam | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |