



**WORKPLAN**  
**US-AEP/Thailand – FY03**

**Jack Kneeland**  
**Country Director**

**January 6, 2002**

# Table of Contents

|  |           |
|--|-----------|
| <b>BACKGROUND AND CONTEXT</b>  | <b>3</b>  |
| <b>US-AEP/THAILAND PROGRAM STRATEGY</b>  | <b>3</b>  |
| <i>Public Policy Program Strategy</i>  | <b>4</b>  |
| <i>Urban Program Strategy</i>  | <b>6</b>  |
| <i>Industry Program Strategy</i>   | <b>7</b>  |
| <i>Energy Program Strategy</i>   | <b>9</b>  |
| <i>Trade &amp; Investment Program Strategy</i>   | <b>9</b>  |
| <b>ACTIVITY SUMMARIES</b>  | <b>10</b> |
| <b><i>Public Policy Program</i></b>  | <b>10</b> |
| <i>P.1. Promoting Improved Enforcement and Compliance</i>                              | <b>10</b> |
| <i>P.2. Strengthening Public Involvement in Environmental Decision-Making</i>          | <b>12</b> |
| <i>P.3. Improving Management of Tha Chin River Basin through Community Involvement</i> | <b>13</b> |
| <i>P.4. Supporting Reorganization of Environmental Institutions</i>                    | <b>14</b> |
| <b><i>Urban Program</i></b>  | <b>15</b> |
| <i>U.1. Urban Environmental Improvement Projects in Secondary Cities</i>               | <b>15</b> |
| <i>U.2. Improving Bangkok Air Quality</i>  | <b>17</b> |
| <i>U.3. Improving Municipal Environmental Management</i>                               | <b>19</b> |
| <b><i>Industry Program</i></b>   | <b>21</b> |
| <i>I.1. Promoting Industrial Environmental Management</i>                              | <b>21</b> |
| <i>I.2. Industrial Energy Efficiency</i>   | <b>23</b> |
| <i>I.3. Sustainability Curriculum for Thai Business Schools</i>                        | <b>25</b> |
| <b><i>Regional Projects</i></b>  | <b>28</b> |
| <b>SUCCESS STORIES</b>   | <b>29</b> |

## **I. Background and Context**

Over the last five years, Thailand has been engaged in major legal, policy, and institutional reforms in response to the enactment of the 1997 Constitution, and the economic crisis of the same year. As a result of Constitutional mandates, Thailand has established new institutions and institutional arrangements that provide for citizen involvement in government decision-making and increased agency accountability, including in the area of environmental protection and resource conservation.

The current Thai Government, under Prime Minister Thaksin Shinawatra, controls a majority of the Thai Parliament for the first time in history and is implementing an aggressive program designed to kick start the economy and boost long-term development. On October 1, 2002, the government launched a major administrative reform to overhaul the Thai bureaucratic system and restructure virtually all government agencies. As part of these reforms, the Government has reorganized environmental institutions by consolidating environmental functions into the Ministry of Natural Resources and Environment (MoNRE).

As mandated by the Constitution, Thailand is also in the midst of implementing the Decentralization Act, devolving new functional responsibilities to provincial and local authorities. As a result, Thai municipalities are beginning to exercise greater control over the design, funding and implementation of environmental improvements.

Despite these changes, Thailand still faces serious challenges in reducing environmental pollution and protection natural resources. Recent studies demonstrate that industrial and urban pollution is increasing, directly impacting the health and economic well-being of Thai citizens, especially those from poorer communities. Upper respiratory infection caused by air pollution, for example, is cited as the leading cause of hospital admissions in Bangkok.

In addition, Thailand is also faced with on-going challenges in infrastructure development. Over seventy percent of all hazardous waste goes untreated, and over fifty wastewater treatment facilities do not operate, and the country's first sanitary landfill has only just begun to operate. Moreover, conflicts between project developers and communities over proposed industrial and infrastructure projects have become increasingly serious – often turning violent – and are now a national issue.

In response, the three branches of government and Thai civil society as well as the media are increasingly empowered to meet these challenges, and are working together to forge new solutions that incorporate international best practices. In the face of continuing institution, technical, human resource and financial limitations, Thailand has demonstrated real leadership and commitment to positive change, and had become a leader in the region.

## **II. US-AEP/Thailand Program Strategy**

Partnerships have proven a very effective development assistance mechanism in Thailand. As a middle-income country undergoing major economic and institutional reforms, Thailand possesses the resources and know-how to engage effectively in international partnerships.

Building on these conditions and capabilities, US-AEP/Thailand operates according to these core partnering principles:

- **Employ country-driven programming** to ensure that all activities are based on a clear, in-country desire for change that is driven by a local partner

- **Link counterpart organizations** to build project specific and broad-based partnerships to deliver valuable, cost-effective technical support
- **Capitalize on drivers of change** to match resources with opportunities on the ground
- **Engage senior decision-makers** who are taking a leadership role in reforms and are well positioned to affect change
- **Develop strategic engagements**, often over a period of years, in which all partners are working towards a common objective that is explicitly defined.
- **Apply targeted resources** to make a measurable difference in the context of larger, more complex initiatives
- **Define results and impacts** before committing resources so that all activities have clear targets for specific results.

While the US-AEP/Thailand Work Plan provides a clear strategic focus, US-AEP/Thailand retains discretion to respond to opportunities. In general, projects are viewed as single-year or multi-year activities with clear objectives, though as activities evolve and the situation changes on the ground, US-AEP/Thailand adjusts the resource and programming mix.

In FY03, US-AEP/Thailand will work in three main program areas – public policy, urban management, and industry – with energy and trade interwoven as cross-cutting themes. As in recent years, US-AEP/Thailand will continue to focus its resources on public policy and urban management programs, which demonstrate the greatest promise for significant impact. In addition, US-AEP/Thailand actively looks for linkages between programs, and in fact many activities and resources are mutually reinforcing.

US-AEP/Thailand also structures activities to link specific US-AEP resources in integrated programs that optimize the comparative advantages of these programming tools. For example, community participation grants to NGOs programmed through the Asia Foundation can be effective follow-on resources to policy initiatives developed under the Regulatory Dialogue.

Likewise, Council of State Governments (CSG) grants can be useful longer term arrangements linked to technical assistance provided by EPA. In FY03, US-AEP/Thailand will develop CSG grants that will build on significant achievements in existing projects such as Improving Management of the Tha Chin River Basin, Improving Bangkok Air Quality, and Distributed Electricity Generation.

In addition, US-AEP/Thailand collaborates closely with other donors and partners, such as the World Bank, ADB, bi-laterals, and the private sector.

#### **A. Public Policy Program Strategy**

As in many countries, the environment is at the leading edge of critical policy reform in a range of areas, including good governance, law enforcement and corporate responsibility. In response to Constitutional mandates, policy-makers and citizens alike recognize that protecting the environment is critical to sustainable economic growth, and are working together to establish a new legal and institutional apparatus.

Drawing on resources and expertise from the EPA, Maryland Department of Environment and the Regulatory Dialogue, US-AEP/Thailand develops activities based on key program drivers that include: (1) legal reforms such as the Public Consultation Act, Decentralization Act and National Environmental Quality Act; (2) institutional reforms such as the creation of a new environmental ministry, the establishment of public organizations and judicial reform; and (3) donor initiatives by the World Bank and the Asian Development Bank (ADB).

Working in the climate of reform, our policy program approach is to work with senior decision-makers to support development of new laws and policies, while at same time pilot testing new ideas at the implementation level with agencies, communities and NGOs. To catalyze reforms, we work to establish stakeholder working groups on particular legal or policy issues, and then facilitate the development of improved policy through international exchange. One result of this approach is that US-AEP is now recognized as a platform for building consensus among senior decision-makers from all branches of government and civil society.

While strengthening enforcement and public participation have been at the heart of the US-AEP/Thailand policy program, a new focus for FY03 will be to support the reorganization of the Ministry of Science Technology and Environment (MoSTE) into the Ministry of Natural Resources and Environment (MoNRE). Building on MoSTE's long-standing partnership with EPA, in partnership with the World Bank, these efforts will encourage the adoption of institutional arrangements that will promote an efficient and effective regulatory system.

### **P. 1: Promoting Improved Enforcement and Compliance**

US-AEP/Thailand will build on on-going work through two new activities that will continue US-AEP efforts to establish an enforcement “floor” through work with courts, and on empowering citizens and communities to settle disputes.

- Establish Specialized Environmental Bench – develop recommendations for establishing a specialized environmental bench through regional judges forum hosted by Thai Supreme Court
- Dispute Resolution Policy Implementation – support implementation of the new environmental dispute prevention and resolution policy developed with MoSTE in FY02 through continued exchange with EPA and other counterpart organizations

### **P. 2: Strengthening Public Involvement in Environmental Decision-making**

US-AEP/Thailand will continue to support implementation of public participation requirements through targeted work at both the policy-making and implementation levels with leading agencies and organizations.

- National Strategy on Project Siting – implement a project initiated by the Thai Senate Environment Committee to bring together Thai partners who have participated in US-AEP and EPA programs to develop a national strategy on strengthening public involvement in siting infrastructure projects.
- Public Consultation Act – continue work with the Council of State, Thailand's legislative drafting agency, in finalizing and implementing the Public Consultation Act, a far-reaching statute that introduces new methods for public involvement in environmental decision-making

### **P. 3. Improving Management of Tha Chin River Basin through Community Involvement**

Community Based Environmental Management – collaborate with the Pollution Control Department in promoting community involvement in the Ta Chin River, one of Thailand's five most important rivers and a drinking water source for Bangkok.

#### **P. 4: Supporting Reorganization of Environmental Institutions**

US-AEP will support efforts to restructure the Ministry of Natural Resources and Environment (MoNRE), and decentralize environmental function to regional offices through two pilot activities:

- Capacity Building for MoNRE's Regional Offices – Develop a partnership between EPA Region Nine and MONRE Regional Offices to build capacity to play increased role through pilot activities such as watershed planning.
- Institutional Reform – Facilitate access by MONRE to US counterparts agencies and organizations, particularly US EPA, in identifying effective institutional arrangements including the establishment of public organizations under the Ministry.

#### **B. Urban Program Strategy**

Reducing pollution loads in urban centers and implementing decentralization policies are two main challenges for the government, and a core focus for our program. The main urban program drivers include legal and institutional changes mandated under the 1997 Constitution and the Decentralization Act, public and political pressure for improved infrastructure and municipal services, and long-term infrastructure planning activities.

While most local authorities have weak financial management, planning, and service delivery, there are an increasing number of active mayors and municipal councilors who bring a new local political culture of working more actively with the general public on a broad range of local issues. Over the last several years, US-AEP/Thailand has worked closely with these innovative leaders through partnerships with U.S. state and city organizations to create concrete, on-the-ground improvements in Thai cities. Three recent examples of successful partnerships include the following.

- With assistance from the Maryland Department of Environment (MDE) and US Environmental Protection Agency (EPA), the City of Chiang Mai developed an air quality management plan. The plan, developed with significant stakeholder input, will enable Chiang Mai to achieve its air quality improvement goals and will serve as a model for other cities in Thailand.
- Through an ICMA (International City/County Management Association) Resource Cities Partnership, the city of Portland, Oregon assisted Rayong City to enhance both municipal and financial management and to encourage citizen participation. As a result, Rayong now has a workplan that complements the city's goals and future objectives. This workplan highlights a multi-year budget and a financial planning model and financial policies that guide financial decisions, and citizen participation and involvement in Rayong's budget process.
- Experts from the City of San Francisco and the USEPA shared technical expertise and practical experiences with the Bangkok Metropolitan Authority (BMA) and private companies in Thailand to assist them in "greening their fleets" by increasing the efficiency of vehicle fleet operations.

US-AEP will look to increasingly involve appropriate US state- and city-level organizations in strategic activities in direct support of workplan projects. In the longer term, the potential is great for national level efforts to play a strong role in developing city capacity, however currently these efforts are in a beginning state. IN FY 2003 US-AEP will nurture relationships with these programs and identify areas where we can help to develop them. These include the Municipal League of Thailand, the National Economic and Development Board's Liveable Cities project

and a number of university-based city management training programs such as that done by the King Prachadhipok's Institute. Key US-AEP resources that support urban projects include EPA, Council of State Governments (CSG) and ICMA.

### **U. 1: Urban Environmental Improvement Projects**

US-AEP/Thailand will work at local levels to support on- the-ground projects targeted at specific improvements. In this effort, the program will work with a small number of Thailand's secondary cities, such as Chiang Mai and Nonthaburi, and will continue efforts to overcome barriers to planning, financing, building and operating environmental infrastructure.

- Support Chiang Mai in implementing their air quality master plan and disseminating their model to other cities;
- Provide assistance to recently-formed partnership between the MDE and the PCD to protect and manage the environment and improve water quality in the Tha Chin River Basin

### **U. 2: Improving Air Quality in Bangkok**

US-AEP/Thailand will address vehicular air pollution in Bangkok, which is possibly the single greatest environmental threat to the health of Thai citizens. Primary activities include:

- Assist the Bangkok Metropolitan Administration in implementing specific parts of the Green Fleets program, such as procurement, carpooling and vehicle maintenance;
- Work with PCD and the Bangkok Mass Transit Authority to support development and implementation of pilot bus improvement project;
- With the Anti-Air pollution and Environmental Protection Foundation and the Thai Society of Environmental Journalists, conduct continuing public awareness campaign around air issues.

### **U. 3: Strengthening Municipal Management**

US-AEP/Thailand will work to develop activities in support of Thai national level programs that develop and disseminate best practices through national level initiatives. The four activities below will be developed during the first half of the fiscal year in a gradual fashion with the expectation of creating a cohesive national level strategy during the second half of the year based on successes in these trials.

- Support the Thai National Economic and Social Development Board's Livable Cities project;
- Facilitate partnerships between Portland and three Thai cities in developing viable implementation plans for future development.
- Work to strengthen networking between cities through the Municipal League of Thailand; and
- Provide further assistance to the municipal manager training curriculum and certificate program.

## **C. Industry Program Strategy**

Industrial pollution is a major source of solid and hazardous waste, wastewater and air pollution in Thailand. Chemical spills and industrial emergencies are common. The industrial sector is also the largest consumer on energy in Thailand, and manufacturing efficiency remains low as compared with other advanced developing countries in Asia.

Since enforcement of environmental regulations remains weak in Thailand, cleaner production, resource pricing and economic instruments have emerged as important strategies for reducing industrial emissions. Overall, Thailand's largest manufacturers have put in place effective environmental management systems that employ cleaner production technologies. Most industrial pollution, therefore, is generated by small and medium-sized enterprises (SMEs), which are difficult to regulate.

Addressing this challenge require balanced applications of enforcement, incentive programs and technical assistance to encourage and enable companies to change their behavior. While on the public policy side US-AEP/Thailand is working on strengthening enforcement, we are also working directly with industry leaders, policy makers and experts to develop collaborative programs that share experience through international exchange.

For example, US-AEP/Thailand is working with Thai universities, institutes and associations to provide fee-based training to industry that leverages a high degree of corporate resources. One example is a train-the-trainers program in industrial cleaner production with the Environmental Engineers Association of Thailand (EEAT) that has already trained over 1100 people. In addition, US-AEP also works with selected Thai multi-national corporations on cooperative projects that aim to disseminate best practices on environmental management and cleaner production to other companies and suppliers.

### **I.1: Improving Industrial Environmental Management**

US-AEP/Thailand will develop the three activities to work with progressive elements of Royal Thai government, companies, institutes and associations develop capacity to reduce pollution. These activities will be initiated in the second half of FY 2003. The Environmental Research Institute of Chulalongkorn University (ERIC), which has become an important strategic partner in corporate and industry outreach initiatives, will be a key partner in designing and implementing these activities.

- Work in partnership with the US Department of Energy and the Southern State Energy Board (SSEB) to provide support for the ambitious eco-industrial development activities being conducted by the Industrial Estate Authority of Thailand (IEAT) and German government
- Work with Thai partners to identify proactive Thai companies that will implement a system of Greening the Supply Chain to improve environmental performance is small manufacturers
- Investigate the potential for Thai companies to participate in the Global Reporting Initiative to make environmental performance more transparent.

### **I.2: Industrial Energy Efficiency**

The central element of the US-AEP/Thailand's industry program is work on industrial energy efficiency, which is being implemented through a partnership with the Alliance to Save Energy (see Energy Program Strategy below).

### **I. 3: Sustainability Curriculum for Thai Business Schools**

We will continue to support an initiative with the Kenan Institute and the Business School at the University of North Carolina to develop environmental curriculum for business school at Chulalongkorn and Thammasart Universities



#### **D. Energy Program Strategy**

The Energy Program will continue its ongoing effort through the Alliance to Save Energy to help the Energy Efficiency Development Association (EEDA) and Energy Conservation Entrepreneurs Association (ECEA) to become self-sustaining, influential Thai institutions promoting energy efficiency. These organizations -- EEDA in particular -- are already considered by the Royal Thai Government (RTG) to be valued partners in the government's drive to improve the efficiency of Thailand's industrial sector.

EEDA, established by ASE in FY 2000, is on track to become independent of US-AEP support by the end of next year, and is now regarded by US-AEP/Thailand as a key partner in its Energy Program. In FY 2003 the State of Oregon and Portland General Electric will also be engaged to work with the RTG's new Energy Ministry on its efficiency initiatives in collaboration with the Alliance, EEDA and ECEA.

In FY 2003 the Energy Program will expand upon its nascent involvement in renewable energy and distributed electricity generation in FY 2002. The driver for our engagement in this area is the passage last April of a net metering policy requiring that Thailand's two utilities buy electricity for the grid from small, distributed (on-site) generators of electricity (up to 1 MW per site). This policy is an important first step for promoting the development of renewable sources of electricity, such as solar photovoltaic and the generation of electricity from crop and livestock wastes.

In FY 2002 USAEP provided a study tour to the U.S. and a training course in Bangkok on net metering that involved the Provincial Electricity Authority (PEA), the Metropolitan Electricity Authority (MEA), Electricity Generating Authority of Thailand (EGAT), and the National Energy Policy Office (NEPO, now part of the Ministry of Energy). Both activities were conducted with two California utilities that have been successfully promoting net metering and renewable energy: the Sacramento Municipal Utility District (SMUD) and Pacific Gas & Electric (PG&E). In FY 2003 USAEP plans to continue working through SMUD and PG&E to build capacity in PEA to implement the new policy.

#### **E. Trade and Investment Program Strategy**

Technology Transfer will be a low priority for the first half of FY 2003. In the third quarter, US-AEP/Thailand will work with the TSSC to develop a demand-driven approach that is integrated across program groups. The most likely starting point will be Energy Program, followed by Industry and Urban Programs. We will also look to develop relationships with FCS Thailand, US TDA and State Economic Development Offices if mutually beneficial.

### III. US-AEP/Thailand Activity Summaries

#### A. Public Policy Program Activities

**Title:** P. 1: Promoting Improved Enforcement and Compliance

**Primary Program Area:** Policy

**Secondary Program Area:** Urban

**U.S. Partners:** U.S. Federal Court of Claims, EPA Office of Enforcement; Maryland Department of Environment; Natural Resources Defense Council; George Washington University Law School; U.S. Institute for Environmental Conflict Resolution

**Thai Partners:** Thai Supreme Court; Thai Administrative Court; Ministry of Natural Resources and Environment, King Pradjadhipok's Institute; Chulalongkorn University; Sustainable Development Foundation; Assembly of NGOs; Thai Society of Environmental Journalists

**Description:** Comprehensive legislative reforms in 1992 established the principles, legal framework and institutional responsibilities for Thailand's environmental regulatory system. Despite these changes, overlapping authority and technical and financial resource limitations, brought about in part by the 1997 economic crisis, have resulted in weak enforcement of Thailand's environmental laws.

Ultimately, strengthening enforcement will depend on modifying institutions to eliminate the inherent conflict of interest in the present system by separating the industrial promotion and regulatory functions. Since this change will require strong political will, US-AEP has focused its efforts on establishing an enforcement "floor" through work with courts, and on empowering citizens and communities to settle disputes. Building on this strategy, in FY03, US-AEP will focus on two primary activities:

#### 1. Supporting Establishment of Specialized Environmental Bench or Court

In 2000, US-AEP worked with MoSTE and the World Bank to set national priorities for enforcement through an international dialogue. Building on this result, in 2001 US-AEP established an international judges' forum with the Administrative Court to develop policies for the environment, resulting in a landmark decision.

In October, Thailand will appoint a new Chief Justice of the Supreme Court who is a noted reformer who is interested in the environment. In FY03, as part of a Regulatory Dialogue regional activity, US-AEP/Thailand's will work with the Thai Supreme Court to develop new court policies for the environment through an international judges' forum. In particular, US-AEP will work with the Supreme to develop a strategy for establishing a specialized bench or court to hear environmental cases.

Activities: Judges' forum on enforcement – Q2

Expected Results: Recommendations establishment of specialized environmental bench or court

## **2. Dispute Resolution Policy Implementation**

Environmental conflicts are front-page news in Thailand. Infrastructure projects are frequently delayed due to disputes and conflicts between project developers, and communities and citizen groups who are not consulting in the siting process. In FY02, US-AEP catalyzed the development of a draft environmental dispute prevention and resolution policy for Thailand. In FY03, US-AEP/Thailand will support implementation of the new environmental dispute prevention and resolution policy through continued exchange with EPA and other counterpart organizations

Activities: Roundtables on policy implementation – 2&3Q

Expected Results: Draft amended policy on dispute resolution  
Draft guidelines on mediator qualifications and capacity requirements

**Title:** P. 2: Strengthening Public Involvement in Environmental Decision-Making

**Primary Program Area:** Policy

**Secondary Program Area:** Urban

**U.S. Partners:** Senate Committee on Environment and Public Works; Natural Resources Defense Council; George Washington University Law School; EPA

**Asian Partners:** Thai Senate Environment Committee; Thai House Environment and Natural Resources Committee; Ministry of Natural Resources and Environment; Council of State; Courts of Justice: Administrative Court; Sustainable Development Foundation

**Description:** Constitutional mandates include: improved access to government information, public participation in environmental decision-making, and the right of citizen's to bring cases against the government. To support implementation of these Constitutional requirements, US-AEP and EPA have worked at both the policy-making and implementation levels through targeted activities with leading agencies and organizations in public participation. In FY03, US-AEP will continue to follow through on its program to strengthen public involvement in the regulatory process through three main activities:

### 1. Developing a National Strategy on Project Siting

Defining the role of the public in environmental decision-making is a controversial issue in Thailand that is at the heart of reforms on environmental governance. Infrastructure project development meets with frequent delay due to controversies between project developers, and communities and citizen groups who are not consulted in the siting process.

In FY02, US-AEP initiated engagement with the Thai Senate Environment Committee to support the Committee's efforts to help resolve environmental conflicts. Building on an observational program to Washington, US-AEP will support the Committee in the development of a national action plan for coordinating government efforts to improve the project siting process to reduce conflict and delay.

Activities: Stakeholder roundtables to develop project siting priorities – 1&2Q  
National conference to present national priorities – 2Q

### 2. Enacting the Public Consultation Act

Over the last two years, US-AEP has supported the Council of State, Thailand's legislative drafting agency, in developing the Public Consultation Act, a far-reaching statute that introduces new methods for public involvement in environmental decision-making. In FY 2003, US-AEP will continue to work to support the Council of State in the final enactment of the law and in the development of Ministerial Regulations, and will work with civil society to test implementation.

Activities: Roundtable/workshop on development of Ministerial Regulations – 3&4Q

Expected Results: Ministerial Regulations for Public Consultation Act

**Title**                    **P.3: Improving Management of Tha Chin River Basin through Community Involvement**

**Primary Program Area:**    Policy

**Secondary Program Area:** Urban

**Partners:**                    EPA, Maryland Dept. of Environment

**Asian Partners:**            Ministry of Natural Resources and Environment, Pollution Control Department, We Love Tha Chin River Association, five Thai provinces

The Tha Chin is one of Thailand's five most important rivers and one of two main sources of Bangkok's drinking water. Intensive agricultural and industrial production along its length has also made it among Thailand most highly polluted waterways. The river starts in the rich agricultural land of the central region, home to intensive swine farming, and ends in the heavily industrialized province of Samut Songkram.

The Thai Pollution Control Department (PCD) has planned to restore the quality of water in the Tha Chin River Basin and use the success as a model for the other 15 major river basins in Thailand. By the year 2000, PCD had developed a detailed plan for cleaning the river, but was frustrated by the difficulties of working across five provinces and with a wide variety of point source and non-point source pollutants.

In 2001 US-AEP, EPA, PCD, the Maryland Department of Environment (MDE) led a delegation of national officials, provincial governors and local NGOs to learn from the experience of managing the Chesapeake Bay. As a result of this trip, and a series of follow technical support activities by five governors and the (PCD) signed an agreement to work together to mobilize communities and restore clean the river basin. Subsequently, NGO leaders signed a similar pact to work together in support of the agreement.

In FY 2003, US-AEP/Thailand will work with PCD, provincial governments and local organizations to support implementation of the agreements In the initial stage, MDE, will support PCD in pilot testing techniques in Community-based Environmental Management developed by counterpart organizations and agencies in the Chesapeake Bay. MDE, as a regulatory and permitting agency, represents only one of the key players in the restoration of the Chesapeake Bay. We will also work to identify a broad-based set of partners in the states and local organizations in the area to broaden the Tha Chin River Basin partnership.

Activities:                    Technical support by U.S. agencies and organizations

Expected Results:        Implementation of PCD's Tha Chin Management program to reduce pollution loading

**Title: P. 4: Supporting Organizational Reform of Environmental Institutions**

**Primary Program Area:** Policy

**Secondary Program Area:** Urban

**U.S. Partners:** EPA Region 9

**Asian Partners:** MoNRE: Pollution Control Department; Office of Environmental Policy and Planning

**Description:**

During early FY03, the environmental departments in MoSTE will be reorganized into MoNRE. In partnership with the World Bank, US-AEP and EPA will work with MoNRE and its environmental departments to identify priority areas for supporting reorganization efforts across a range of areas.

In particular, potential areas for collaboration include devolving environmental functions to regional offices, consolidation of environmental information and reengineering of the environmental fund through the public organization mechanism.

One program that has been discussed will be continuing to strengthen linkages between MoNRE and EPA Region 9 (San Francisco). Collaboration would focus on a joint program that links Thai and U.S. counterpart agencies at the national, regional and local levels to support the development of regional offices in the new ministry. US-AEP and EPA will also

Activities: Technical exchanges and workshops on reorganization strategies – 2Q

Results: Agency reorganization strategies and plans.

## **B. Urban Program Activities**

**Title: U. 1: Urban Environmental Improvement Projects in Secondary Cities**

**Primary Program Area:** Urban

**Secondary Program Areas:** Policy

**U.S. Partners:** City of Portland, Maryland Department of Environment, City and County of San Francisco, Other U.S. Cities or Environmental Associations, such as Solid Waste Association of North American (SWANA), Water Environment Federation (WEF), and the Air and Waste Management Association (A&WMA)

**Asian Partners:** **Local (Possibilities):** Thai cities including Chiang Mai, Nonthaburi and Rayong, 13 cities in solid waste benchmarking activity  
**National Agencies:** Pollution Control Department (PCD)  
**Regional:** Asian Cities and Environmental Associations, such as the Water Environment Association of the Philippines

### **Description:**

**Background:** The decentralization process in Thailand is moving ahead and active local managers have been able to make real progress in improving the environmental conditions in their cities. However, the inability of national and local agencies to develop and operate environmental infrastructure is one of the most significant environmental challenges facing Thailand. US-AEP/Thailand will draw on the resources of US cities and states to develop counterpart relationships based on specific environmental goals. Environmental problems and priorities in Thailand's secondary cities include:

Wastewater - Currently the majority of the almost 90 wastewater treatment plants constructed across Thailand are not operating. The responsibility of managing many of country's overly-designed and expensive wastewater treatment plants will increasingly fall to local authorities. With more to be constructed in the near future, finding appropriate technologies, ensuring proper cost recovery, and improving operation and maintenance will be priorities at the local level.

Solid Waste – Across Thailand solid waste management is at a crisis level. Collection is inefficient, open dumping is widespread, cities can not collect adequate fees, and recycling-reuse programs are non-existent. In a number of these cities, existing landfills are operating over capacity and, due to public resistance and political gamesmanship, siting new facilities has proven difficult.

Air Quality – In Thailand's larger secondary cities air pollution is becoming a significant environmental problem that citizens and governments want to improve. The Thai Pollution Control Department intends to use Chiang Mai as a resource to help other cities develop air quality plans.

**Activities:** In FY2003, US-AEP/Thailand, by facilitating partnerships between U.S. and Thai partners on the state and local levels, will work in select secondary cities to support on-the-ground projects in two or three environmental sectors, to include wastewater, solid waste, and/or air quality (US-AEP's focus in the water sector will focus on Tha Chin River Basin Management activity in the Policy Program). These projects will address the barriers to plan,

finance, build, and operate environmental infrastructure. They will also complement the more comprehensive environmental planning and prioritizing promoted by the “Livable Cities” program described in the previous activity sheet. Activities in FY2003 will include, but will be not limited to:

**1) Implementation of Chiang Mai Air Quality Master Plan.** US-AEP/Thailand will continue the long-term and successful partnership between the Maryland Department of the Environment, Thailand’s Pollution Control Department, the municipality of Chiang Mai, and the Chiang Mai Air Quality Partnership to help the city implement specific parts of their air quality management plan. This assistance will include assisting the city in developing and implementing a Green Fleets program that will identify specific measures to increase the efficiency of their vehicle fleet operations.

In addition, US-AEP/Thailand will work closely with the Pollution Control Department and the EPA to help promote the Chiang Mai model to other Thai secondary cities. This strategy will include working through the Thailand node of the EPA’s Clean Air Training Network – Asia (CATNet-Asia) and encouraging Thai cities to participate in networking activities and information sharing as part of the ADB and World Bank Clean Air Initiative for Asian Cities.

**2) Solid Waste Benchmarking Study.** US-AEP will partner with the World Bank to conduct a municipal benchmarking exercise that will provide information for the World Bank’s Thailand Environmental Monitor on Solid Waste. The Thailand Environment Monitor series, initiated in 2000, presents a snapshot of key environmental trends in the country, including air and water quality and natural resources conservation. As part of the Solid Waste report, this benchmarking exercise will measure the performance and level of service in solid waste management (SWM) for 13 Thai cities through a set of standardized and comparable numerical indicators. The results will be shared in a culminating workshop, which will include a discussion of solid waste technology and management options for Thai cities. Based on the benchmarking activity and workshop, US-AEP/Thailand will explore opportunities for follow-up starting in Q3.

**3) Environmental Conferences and Associations Support.** To support local governments in finding technical solutions to manage their environmental problems, US-AEP/Thailand will provide cost-share support to send a number of local officials to annual environmental conferences, such as those organized by SWANA, WEF, and A&WMA. In addition, US-AEP/Thailand will look for opportunities to support Thai-based environmental associations, possibly through partnerships with their counterparts in other Asian countries.

**Expected Results:**

Implementation of two to three measures identified in the Chiang Mai Air Quality Master Plan.

Increased technical capability of 13 cities in managing solid waste management. In each of these cities, success will be measured by the specific measures they take to improve solid waste management

The formation of long-term U.S. city to Thai city partnerships around two or three environmental issues, to include wastewater, solid waste, and/or air quality. The eventual goal would be to create more successes in the model of Chiang Mai-Maryland and Portland-Rayong, previous successes that produced on-the-ground environmental improvements  
Increased ability of Thai cities to provide environmental service to their citizens.



**Title: U.2: Improving Bangkok Air Quality**

**Primary Program Area:** Urban

**Secondary Program Areas:** Policy

**U.S. Partners:** City of Portland, Maryland Department of Environment, City and County of San Francisco, Other U.S. Cities or Environmental Associations

**Asian Partners:** Local: Bangkok Metropolitan Transit Authority, Bus companies and associations, and AWMA Thailand Chapter  
National Agencies: Pollution Control Department (PCD)

**Regional Partners:** Asian Bus company and/or government agency that can disseminate successes

**Description:**

**Background:** Like most big cities in the developing countries of Asia, Bangkok has suffered from worsening traffic congestion and air quality for over a decade, Air pollution in Bangkok is probably the single greatest single environmental threat to human health in Thailand. Research has established an association between particulate matter and impacts such as premature death, missed work and school attendance and hospital admissions as well as benefit cost ratios of air quality investments as high as 9:1.

In response to these problems, the Bangkok Metropolitan Authority (BMA) has implemented several measures to have greatly improved the city's air quality. These include the phased out leaded gasoline and significant reduction in the number of two stroke motorcycles. In addition, Thailand's Pollution Control Department (PCD), the lead implementing agency in the air sector, has launched a new project that is aimed at to target Bangkok's bus fleets, which produces 30% of the particulate matter in Bangkok.

**Activities:** US-AEP/Thailand aims to be a partner with PCD and others to address Bangkok air problems. The priority is on existing issues (installed capacity), primarily diesel trucks and buses, with a secondary focus on longer term solutions such as alternative fuels. Activities in FY2003 may include:

Working with PCD to support development and implementation of pilot bus improvement project including technical support for establishing criteria, developing technical assistance and developing public support.

Assisting the BMTA in cleaning up their unregulated private bus fleet with a U.S. bus company as a partner;

With the City and County of San Francisco and the EPA, assisting the BMA's Green Fleets Policy Committee in implementing specific parts of the Green Fleets program, such as carpooling and vehicle maintenance;

Assisting the Working Group on Alternative Fuels under the Ministry of Finance in developing appropriate emissions factors for Thailand; and

With the Anti-Air pollution and Environmental Protection Foundation and the Thai Society of Environmental Journalists, conducting a public awareness campaign around air issues.

**Expected Results:**

In Bangkok and Chiang Mai, reductions of air pollutants (most notably PM10) in the medium-term. Most significantly, a thorough inspection and maintenance system for a diesel fleet has the potential to deliver significant benefits. Unlike gasoline engines whose PM emissions increase with age despite regular maintenance, the emissions from diesel engines can be more effectively limited over the years through frequent maintenance.

By helping to establish and strengthen the institutions that will continue to fight for improved air quality, such as city AQM partnerships, the Alternative Fuels Working Group and the Thai Society of Environmental Journalists, US-AEP/Thailand will help ensure significant continual air quality improvement in the long-term.

**Title:** U. 3: Improving Municipal Environmental Management

**Main Technical Area:** Urban

**Secondary Technical Area:** Policy

**U.S. Partners:** International City/Country Management Association (ICMA)

**Country Partners:** Thailand Environment Institute (TEI), King Prajadipok Institute (KPI), Municipal League of Thailand (MLT), National Economic and Social Development Board (NESDB), Thai cities

**Description:**

**Background:** While local governments are limited by central controls in managing their administrative structures, local staffs, budgeting and access to resources, much can be done at the national level before further reforms grant them greater autonomy. Thailand's proposed program of decentralization reforms will require significant strengthening of local capabilities to effectively deliver services and undertake needed capital projects. This will be a significant challenge given the general level of knowledge, technical expertise and political will that resides that the local level.

However, there are number of national-level organizations that are assisting in this effort. These include the Municipal League of Thailand (MLT), National Social and Economic Development Board's (NESDB's) Livable Cities Program, King Prajadhipok's Institute, national government agencies and NGOs. In addition, Thailand's parliament is involved in making an estimated 700 legal revisions to national level laws to enable the decentralization process to move ahead. While these organizations, particularly MLT, are potentially powerfully drivers for decentralization across Thailand, they are not currently able to completely fulfil this role. US-AEP will develop the activities below on a gradual and iterative basis to determine key opportunities to create a cohesive strategy for national level engagement later in the fiscal year.

**Activities:** With key implementing partners ICMA, TEI, MLT and KPI and supporting national-level organizations that are working to promote decentralization, US-AEP/Thailand will work to form in-depth partnerships with "champion" cities, develop city-to-city networking, and continue efforts to advocate for better policies and institutional arrangements. In this effort, the program will promote increased political, fiscal, and managerial discipline by local government officials and will provide assistance to municipalities to move from "book shelf plans" to actual "implementation plans." Activities will stress necessary strategies and local reforms, such as strategic planning, city planning, financial planning, budgeting, and monitoring.

**1) Support for Municipal Strengthening Programs (Q1-Q4).** The National Economic and Social Development Board (NESDB) has developed guidelines for "Livable Cities" and hosts a committee that is engaged in efforts to work directly with Thai cities. Last year, five cities were chosen to participate in a Livable Cities pilot program (LCPP), which involves developing and refining basic comprehensive strategies for environmental improvement, based on the concept of objective-oriented management. In the first quarter of FY2003, US-AEP/Thailand, with the Kenan Institute in the lead, will complete this pilot program by facilitating a series of four 3-day Livable Cities workshops in four cities - Paak Prek, Uttaradit, Nonthanburi, and Rayong (Chiang Mai has already completed the process and produced a Liveable Cities Strategy).

Starting in Q2, US-AEP/Thailand will explore opportunities to build off these workshops to help create and implement a nationwide Livable Cities program. A key part of this program will be

the “Thailand Resource Management Partnership,” which will involve ICMA facilitating a long-term partnership between Portland and two to three Thai cities. Building off the successful Portland-Rayong Resource Cities Partnership, this program will focus on assisting the selected cities in moving from “book shelf plans” to actual “implementation plans.” Portland technical experts and their Thailand counterparts will collaborate to accomplish the following: assess the adequacy of five year plans and as appropriate make improvements; develop financial implementation plans to accompany the five-year plans; identify and execute public outreach processes to educate the public and obtain public input; and prioritize and develop an implementation schedule for plan components. The detailed plans will focus on one or two of the issues identified by the assessment team, e.g., recycling; waste water treatment, or zoning/land use issues. Systems and tools will be designed that can be utilized after the conclusion of the project and can be transferable to other Thailand jurisdictions.

**2) Best Management Practices (Q2-Q4).** US-AEP/Thailand, led by ICMA, will develop and implement a national Best Management Practices (BMP) program, which will include the collection of best practices through a competitive process, a BMP symposium, the initial creation of a network of BMP cities, and the development of a BMP website. The goal is to identify cities that are leaders in environmental management and then create a network to provide direct assistance to other cities on implementing specific environmental best practices.

**3) Municipal Managers Certification (Q1-Q4).** US-AEP/Thailand, again with ICMA in the lead, will help provide training to local officials by supporting and strengthening the ongoing local government certificate programs coordinated through the King Prajadipok Institute. This certificate program for local officials was recently expanded to another regional node – Songkhla – to join the existing two nodes in Chiang Mai and Khon Kaen. The program, which consists of eight subject areas over roughly the same number of months, has offered training to roughly 180 local officials on the municipal, provincial and tambon level by the end of FY2002. KPI will add more specific certificate programs on city planning and financial management in early FY2003, and the Thailand Environment Institute may develop a program on environmental and natural resource management to join the series.

#### **Expected Results:**

Through the LCPP, five Thai cities will develop and refine basic comprehensive strategies for environmental improvement.

By the end of FY2003, an active network of cities will be formed around the Livable Cities concept that includes the sharing of best management practices. This will include the development of a BMP website.

Three more municipal manager certification programs will be added and – more local officials will increase their knowledge on municipal management, city planning, financial management, and environmental management by the end of FY2003.

Eliminate barriers to enabling Thai cities to manage their own environmental improvement programs by affecting widespread improvement on the local level in three areas: knowledge about *truly* sustainable urban and local community management; understanding of the full responsibilities and functions of local governments; and political will to exercise their increased powers.

## C. Industry Program Activities

**Title:** I. 1: Promoting Industrial Environmental Management

**Primary Program Area:** Industry

**Secondary Program Areas:** Policy and Technology Transfer

**U.S. Partners:** Various US multinationals operating in Thailand; Southern States Energy Board, U.S. Department of Energy

**Asian Partners:** Environmental Engineers Association of Thailand (EEAT); Pollution Control Department (PCD); Federation of Thai Companies (FTI); Environmental Research Institute of Chulalongkorn University (ERIC); Industrial Estate Authority of Thailand (IEAT); GTZ; various Thai companies, including SMEs

### Description

*Drivers:* Thai industry is increasingly being encouraged to reduce waste, energy consumption and pollution due to an increased need for effective competition in the export business, increased enforcement of existing environmental regulations, heightened public pressures, and emerging global best practices. Meanwhile, there is a renewed focus in Thailand on assisting small- and medium-sized enterprises (SMEs) to comply with environmental laws and regulations. The Industrial Estate Authority of Thailand (IEAT) is in the process of trying to build the capacity of its staff to work with industrial estates in Thailand to adopt eco-industrial development practices.

#### *Eco-Industrial Development (EID)*

In FY03, US-AEP/Thailand plans to continue to assist IEAT in its efforts to incorporate eco-industrial development concepts and best practices into the operations of its leading industrial estates. Given its limited resources, it is anticipated that US-AEP will team with the U.S. Department of Energy and the Southern States Energy Board on various EID activities that these organizations plan to conduct with IEAT during the upcoming year. These activities focus on such US-AEP supported EID best practices as resource efficiencies, waste reduction, by-product exchange, and adoption of clean environmental and energy technologies.

Specific activities could include:

1. Assist in the completion of the eco-industrial assessment of the Map Ta Phut Estate, in collaboration with IEAT environmental engineers. Help IEAT develop a report summarizing the eco-industrial technology opportunities that arose from the assessment. Work with IEAT and estate locators to assess the appropriateness of these technologies and support the development of pre-feasibility studies of some of them, such as the capture and use of flare gas.
2. Meet with clean energy firms in Thailand to seek opportunities for cooperation in eco-industrial development. (IEAT Governor Anchalee Chanvanit, Chief Engineer, Dr. Samarn Thagtongtawi, and Maptaput Estate Manager Kasemsri Homchuen, and requested that DOE conduct this activity in FY03.)
3. Build capacity in IEAT staff to apply eco-industrial development concepts, such as by-product exchange and resource efficiencies, in their design plans for a new petrochemical industrial estate.

### Greening the Supply Chain

US-AEP/Thailand will implement a program that promotes supply chain environmental management, also called “greening the supply chain” (GSC). This practice involves large corporate customers inducing the companies along their supply chains to implement environmental improvement measures. GSC programs have the capability to induce a large number of SMEs to engage in cleaner production (CP), adopt clean technologies and implement environmental management systems (EMS).

US-AEP/Thailand will institutionalize the concept of GSC by transferring and developing a permanent GSC training program with the Environmental Engineers Association of Thailand (EEAT) and implementing GSC programs with a few small large companies. Participating companies will provide case studies for the training programs, commit funding to their own programs, and set clear targets for their supply chains.

US-AEP will implement “train-the-trainer” activities (workshops, audits) and help develop specific corporate policies and procurement guidelines with the Environmental Engineers Association of Thailand (EEAT). Initiatives could include raising awareness, training and implementation of EMS or CP, developing company environmental policies, green procurement guidelines, and supplier outreach, training and auditing activities. EEAT has a track record of delivering commercially viable environmental training programs to large numbers of Thai industrial customers.

EEAT, US-AEP and other partners, such as Chulalongkorn University, Thai Environment Institute and the Thai Business Council for Sustainable Development, will work with large companies that express a willingness and commitment to enlist their energy and resources to develop extension programs with their suppliers. Initial targets include the National Petrochemical Corporation, Siam Kraft Industry Co. Ltd., C.P. Trading Group, Johnson & Johnson, IBM, Nike, and members of the Responsible Care Thailand organization.

### **Expected Results**

Enhanced capacity of EEAT to develop a replicable GSC program targeting SMEs.

Through EEAT, adoption of GSC by at least one multinational corporation which has the potential to influence the environmental behavior of at least 100 SME suppliers.

Increased ability by IEAT and estate locators to improve environmental management in estates, including the ability to assess technology leads and identify the most appropriate eco-industrial and clean energy technologies.

Strengthened capacity of IEAT to better apply EID practices to existing and new estates.

**Title:** I.2: Industrial Energy Efficiency

**Primary program area:** Energy

**Secondary program areas:** Policy, Industry, Trade & Investment

**U.S. Partners:** Alliance to Save Energy

**Asian Partners:** Energy Efficiency Development Association; Energy Conservation Entrepreneurs Association, Department of Energy Development and Promotion of Thailand; Energy Engineering Institute; Cleaner Production for Industrial Efficiency Office Samut Prakarn

### **Description**

The Alliance's Energy Efficiency Industry Partnership (EEIP) in Thailand raises the visibility of Thailand's emerging energy efficiency industry and builds its capacity to: 1) engage policymakers on energy and regulatory issues of interest to the energy efficiency industry; 2) communicate the benefits of improved energy efficiency to the nation's environment and economy; 3) promote energy-saving equipment and services as a means to reduce production costs and energy expenses and improve reliability; and 4) develop joint ventures and other professional exchanges with energy efficiency companies throughout the world.

The project centers on strengthening two related energy efficiency industry associations that were created in FY 2001 with assistance from this project: the Energy Efficiency Development Association (EEDA) and the Energy Conservation Entrepreneurs Association (ECEA). These associations provide energy efficiency companies with a platform to promote their products and services and to network with their peers in the industry, while providing policy makers with advice on how to integrate energy efficiency into the development of national and provincial energy policies.

USAEP is presently focusing the majority of its resources on supporting EEDA. One full-time staff member was hired in FY02 as an employee of the Alliance with the majority of responsibilities focusing on EEDA coordination, leadership and organization.

EEDA, which consists of medium and large-sized suppliers of energy efficiency goods and services, was formally established in FY02 to expand markets for energy efficiency products and services and to work with the Government of Thailand (GOT) on energy efficiency policy issues. EEDA has been actively engaging the GOT Dept. of Energy Development and Promotion (DEDP) in dialogue about how DEDP can improve its implementation of energy efficiency policies. This emphasis will continue in FY 2003, with a new emphasis being placed on membership development and fund-raising activities that EEDA can adopt to generate its own revenue.

Also during FY 2002, the project connected EEDA and ECEA with an industrial efficiency project in Samut Prakarn funded by the GOT, called Cleaner Production for Industrial Efficiency (CPIE). EEDA and ECEA members made presentations on various aspects on energy efficiency at the Alliance's educational energy efficiency seminar for the managers of medium-sized facilities in the highly industrialized province of Samut Prakarn.

The main focus of this project is to strengthen the associations so they can influence public policy on energy efficiency. In FY03 EEDA will focus its efforts on two of its highest policy priorities: 1) Assisting DEDP with the implementation and promotion of its Revolving Loan Fund for Energy Conservation (RFEC), and 2) Increasing the adoption and promotion of cogeneration in Thailand.

For its first policy objective, EEDA began to examine existing models of revolving loan funds worldwide in an effort to provide recommendations to DEDP. To facilitate this effort, the Alliance has written an 83-page report, summarizing the characteristics of all existing energy efficiency funds from around the world. To further this process, and to build camaraderie and understanding among EEDA, ECEA and DEDP, the Alliance organized a study tour to the U.S. for DEDP and representatives of EEDA and ECEA to learn about successful U.S. financing mechanisms for energy efficiency, as well as ESCOs and government involvement. Study tour participants contributed close to \$45,000 in cost share for the tour. EEDA will use the information compiled by the Alliance, as well as their knowledge gained during the study tour, as it participates as a member of DEDP's Environmental Business Advisory Network (EBAN). The EBAN is currently being created to provide DEDP with ideas and feedback to its design of the RFEC and other energy efficiency policies and programs. For EEDA's second policy priority, the association is currently working on a cogeneration policy position paper, which it plans to present to EGAT, DEDP, and several other Thai government organizations.

Additional activities for FY03 include:

Continued technical support for EEDA and ECEA, including one full-time local hire acting as EEDA's Coordinator.

- Organize activities that assist EEDA with expanding their membership and generating revenue for the association.
- Develop a web site, brochure, and quarterly newsletter for EEDA.  
Organize EEDA Policy Roundtables on various topics of interest to its members.  
Assist EEDA in the development of policy position papers .  
Further strengthen the relationship between EEDA and ECEA.  
Organize two educational seminars for end users, co-organized with EEDA and ECEA.

### **Expected Results**

In FY03 the Alliance will continue to strengthen and provide technical support to both EEDA and ECEA, while strengthening the working relationships between the associations. The Alliance will work with EEDA to design and implement activities, with EEDA funding half of the Association's costs by the end of FY03. Direct USAEP support to the associations will end after FY 2004 by which time it is expected EEDA will have become a fully self-sustaining, widely recognized business association of energy efficiency companies in Thailand.



**Title: I. 3: Sustainability Curriculum for Thai Business Schools**

**Primary program area:** Industry

**Secondary Program area:**

**US Partner:** University of North Carolina, Kenan Flagler Business School

**Asian Partner:** Kenan Institute Asia, Thammasart University and Chulalongkorn University

**Description:** Thai business executives often see environmental protection as a cost. They also tend to see corporate environment systems as a PR exercise or an effort to meet regulatory requirements rather than an opportunity for corporate performance improvement that will help profitability and sustainability of the enterprise in the long term.

To protect the environment while maintaining competitiveness, Thai industrial company managers need the skills and concepts of sustainable management in which company environmental performance and social responsibility are measured along with financial performance. Such practices not only improve corporate image, but also satisfy shareholders and stakeholders concerns for reducing risks, limiting liabilities, preserving company reputation, improving relations with local communities, and increasing productivity by reducing the waste of materials. The results of this approach are ultimately reflected in a company's financial bottom-line. This benefits and techniques of such a "sustainable enterprise" approach need to be clearly and comprehensively communicated to Thailand's current and future management decision-makers.

A collaborative partnership between the Kenan-Flagler Business School at the University of North Carolina-Chapel Hill (UNC), Chulalongkorn University (CU) and Thammasart University (TU) is implementing the program components to address competitiveness and sustainable enterprise issues. In fiscal year 2002, the three business schools developed and implemented course curriculum, launched executive education programs, held a train-the-trainer program, established business advisory boards and conducted research projects. This initiative was co-funded by USAEP and Kenan Institute Asia. KIAAsia will provide in-kind support in terms of financial management/bookkeeping, reporting and partnership facilitation at its own cost.

In 2003, US-AEP Thailand will continue to support this initiative and will work closely with Kenan Institute Asia and US-Thai partners. The activities in 2003 will include the following key activities:

### ***Curriculum Development and Implementation***

In 2002, CU and TU with UNC assistance, developed revised course curriculum with sustainable enterprise concept injection and had already delivered in June 2002 semester. These include:

#### *Chulalongkorn University (CU)*

- Environmental Management Accounting
- Business Sustainable Management
- Strategic Management
- Business Concepts and Ethics

*Thammasart University (TU)*

Strategic Management and operation  
Production and Logistics  
Green and Social Marketing  
Sustainable Business Management

In 2003, both CU and TU continue to improve and revise course curriculum. They plan to develop a concentration in sustainable enterprise.

**Activities:** Sustainable Enterprise Course Curriculum Development at both CU and TU

**Expected Result:** 1. Improved revised course curriculum at CU and TU  
2. A concentration in sustainable enterprise

***Executive Education***

CU and TU, with support from UNC, will continue to develop executive education course for Thai companies, Thai managers of American companies and public officials. In 2002 both CU and TU delivered one executive training with support and advice from UNC. In 2003 both CU and TU plan to offer one or two courses depending on demand.

**Activities:** 1. Executive Education Training (CU) – Q3  
2. UNC Professors trip to Thailand – Q3  
3. CEO Forum (TU)

**Expected Result:** Two executive trainings approx. 100 participants attend

***Industry Advisory Boards***

To ensure that both executive education and business education programs are meeting industry needs, and to find suitable companies for case study development, both CU and TU have established advisory boards. These boards will be consulted on program development, help guide the implementation, assist in developing and marketing executive education courses and may also a future source of financial support.

**Activities:** 1. Bi-annual advisory board meetings for each university

**Expected Results:** Advisory board meetings to provide recommendation to CU and TU on how courses can be best serve industry environmental and business needs.

***Train-the-trainer***

CU plans to transfer their knowledge in competitiveness and sustainable enterprise to regional Thai universities. Prince of Songkla University will be selected for FY 2003. UNC professors will advise and assist CU via videoconference and email.

**Activities:** Train-the-trainer program (Q3) in Songkla

**Expected Results:** Songkla professors trained in sustainable enterprise concepts and curriculum development.

***Research Projects and Faculty Development***

The research and case studies by CU and TU with advice from UNC have demonstrate that competitive manufacturers typically adopt management strategies that reduce waste from their production processes and increase efficiency while contributing to communities and country. These materials have been used in regular course teaching as will and course material for executive training.

In 2003, CU plans to conduct 5 case studies and 1 research and TU plans to conduct 3 case studies and 1 research works

**Activities:**

1. Conduct case studies and research projects.
2. Faculty members from CU and TU trip to USA to work with UNC, including participation in the annual Sustainable Enterprise Academy in November, 2002

**Expected Results:**

1. - 8 case studies
2. – 2 research projects.

#### D. Regional Activities

The following table ranks the top five regional projects from one to five as requested in the work plan guidance. Activities are also rated on a scale of one to five (one being best) according to how useful the activity is in the context of the Thailand Country Work Plan.

| Activity   | Rating | Rank | Budget        |
|--|--------|------|---------------|
| Environmental Regulatory Dialogue  | 1      | 1    |               |
| Global Reporting Initiative  | 3      |      | Grant to ERIC |
| CATNA  | 2      | 3    | Request ?     |
| Urban Association Building   | 2      | 4    | 0             |
| Note: Strengthening the capacity of the Thai Municipal League is a key objective of the Urban Program. However, US-AEP/Thailand would like to concentrate both funding resources and TSSC/ICMA time on country-level work. The current role and capability of the MLT is unclear. Until we have a better understanding and working relationship, it does not make sense to expend resources on building regional linkages. |        |      |               |
| Water Associations   | 1      | 2    | 5000          |
| MAPES  | 3      |      | 0             |
| SW South Asia  | 5      |      |               |
| Financial Institutions   | 2      | 5*   |               |
| APRCP  | 3      |      | 5000          |
| Greening Supply Chain  | 2      | 5*   | Grant to EEAT |
| APEC Energy  | 2      |      | 5000          |
| Asian Infrastructure Matchmaking   | 5      |      | 0             |
| WEFTEC   | 4      |      | 0             |
| AWMA   | 4      |      | 0             |
| ETNA   | 5      |      | 0             |
| Total  |        |      | 5000          |

\* = Tie

#### **IV. FY02 Success Stories**

##### **A. Public Policy Program Success Stories**

###### **1. Developing a Environmental Dispute Prevention and Resolution Policy**

US-AEP and EPA supported the development of a new environmental dispute prevention and resolution policy that outlines the institutional framework, strategies and capacity building requirements necessary for the Ministry of Science, Technology and Environment (MoSTE) to address the growing number of environmental disputes and conflicts.

The policy was developed over a year-long process that began with the establishment of a broad stakeholder working group, and linkages to U.S. counterpart agencies and organizations. To enable integration of best practices into the policy development process, US-AEP and EPA provided targeted technical assistance and strategic exchanges, including video-conferences, an observational program to the U.S. and an international conference and workshop.

Environmental conflicts are front-page news in Thailand. Infrastructure projects are frequently delayed due to disputes and conflicts between project developers, and communities and citizen groups who are not consulting in the siting process. Defining the role of civil society in environmental decision-making is a controversial issue in Thailand that is at the heart of environmental reforms.

One strategy for reducing conflict is to use alternative dispute resolution (ADR) techniques – facilitation, mediation, or consensus building – to facilitate the settlement of disputes outside of the courts. For environmental disputes, ADR has proven effective strategy for communities, industry and government to avoid costly and time-consuming litigation, and build enduring partnerships. Agencies also set their own policies and practices to prevent and resolve conflicts before positions have hardened, and parties are before the courts.

US-AEP's work on agency-level ADR complements work with the Council of State to develop a new public participation law, and work with the Thai Senate on establishing a national strategy on project siting. In June 2002, US-AEP organized an observational program for the Senate Environment Committee to the U.S. to strengthen the Senate's understanding of the role of the public in environmental decision-making at federal, state, and local levels in the U.S. with an emphasis on the role of civil society in environmental management, including project development, policy formulation, rulemaking and enforcement.

In FY03, the Senate will lead an activity that integrates work by US-AEP and EPA in public participation, ADR, enforcement, and EIA reform into a single national dialogue that integrates stakeholder views on a coherent policy framework for project siting.

###### **2. Developing New Public Participation Law through Innovative Governance Systems**

In FY02 US-AEP and EPA continued engagement with the Council of State, Thailand's legislative drafting agency, and the Executive Public Administration Foundation (EPAF) to support enactment of the new Public Consultation Act, a ground-breaking piece of legislation that will provide a legal and institutional foundation for public participation in environmental decision-making.

In particular, through targeted technical assistance and a grant to EPAF, US-AEP continued to support incorporation of international best practices into the draft Public Consultation Act in part through a “notice and comment” process for gaining public comment on the law based on U.S. best practices. In fact, the Council of State process is more innovative than U.S. practices since it draws on a range of methodologies, including the internet.

Developing a new law with direct input by civil society is completely new to Thailand. Through this activity, the Council of State has exceeded all legal requirements by going directly to the public for their opinion in the new law, applying principles and practices that will be mandated in the law to the development of the law itself. The law will go to the Parliament for enactment early next year.

In addition, to provide broader encouragement for efforts by senior Thai officials and decision-makers to promote strategies for strengthening public involvement in environmental decision-making, in January US-AEP and EPA organized a 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.

### **3. Strengthening Enforcement Regime through Improved Judicial Policies for the Environment**

US-AEP/Thailand continued its program to strengthen enforcement through an international judges’ forum on the environment with the Thai Administrative Court, resulting in the development of recommendations for court policies for the environment.

Established under the 1997 Constitution, the Administrative Court is responsible for reviewing the activities of administrative agencies or officials, safeguarding citizen rights, and establishing a standard for public administration. In supporting this mission, the Office of the Administrative Courts serves as court secretariat, and is also responsible for knowledge development of judges and state officials, and promoting improved public administration by analyzing the causes of court filings and disseminating court decisions.

In December 2001, the Office of the Administrative Courts hosted an international judges conference and workshop in Bangkok to exchange ideas on the role of the courts, agencies and citizens in environmental protection. Senior judges and experts from the United States, France, and the Philippines shared their views and experiences with their Thai counterparts.

Issues under discussion for the event included: the roles of the citizens and agencies in environmental protection, alternative dispute resolution, and access to information, as well as technical judicial matters such as standing to sue, standards for judicial review, and remedies. One output of the event was the development of recommendations for improved court policies for the environment.

Due to the increasing number of environmental cases brought before the Administrative Courts, US-AEP has been working with the court to develop improved policies through counterpart exchange. In June 2001, a group of senior judges joined an observational program to the U.S. organized by US-AEP to share ideas with judges and other experts and practitioners from government, academia, environmental groups and the private sector. One result of this observational program was that a judge taking part in the activities handed down a landmark decision enjoining operations of an illegal landfill.

## **B. Urban Program Success Stories**

### **1. Chiang Mai Air Quality Initiative**

Over the past decade, the northern city of Chiang Mai has become increasingly aware of air pollution impacts on the health, livelihood, and quality of life of its residents and its many tourists. In late 1999, the City of Chiang Mai, the Pollution Control Department (PCD), and the Maryland Department of the Environment (MDE) of the US agreed to work together to undertake the Chiang Mai Air Quality Initiative. In June 2002, two-and-a-half years after the initial agreement, the City released its first air quality management (AQM) plan.

With assistance from a team that included MDE and the US Environmental Protection Agency, Chiang Mai and PCD staff first participated in on-the-job trainings focused on all aspects of AQM. Over the next two years, a multi-stakeholder group took part in nine workshops in Bangkok and Chiang Mai to develop the action plan. The process included the creation of a detailed emissions inventory, which served as an important scientific building block. At the end of the planning effort, stakeholder representatives committed to continuing their leadership and involvement in protecting and improving the City's air quality through discrete actions, such as bicycling to work and turning off taxi and tuk-tuk engines while idling and fueling. The local media has picked up on these commitments, reaching out to residents through the radio, internet and newspaper.

In July 2002, Chiang Mai Mayor Boonlert Buranapakorn led a workshop to announce the completion of the plan and build support for concrete actions. The workshop was attended by government, media and NGO representatives from over 26 Thai municipalities who participated in the project and who will work to develop similar programs in other Thai cities. Air quality master plans provide a foundation for broad-based programs that result in cleaner air for the citizens of cities such as Chiang Mai. This newly completed plan can also serve as a model that can be replicated in Thailand and other Asian countries.

### **2. Bangkok Green Fleets**

The Bangkok Green Fleets project has led to a transfer of information and skills from the US Environmental Protection Agency (USEPA), the cities of Denver and San Francisco, that is reducing emissions from large fleets of buses and trucks.

The project, led by US-AEP and KIAAsia, has helped the Bangkok Metropolitan Administration (BMA), government agencies and private companies to "green their fleets" by increasing the efficiency of vehicle fleet operation to reduce air pollution. The US partners have transferred policies and technical options which fleet managers can use to in purchasing less polluting vehicles, reducing the size of their fleets by improving routing and scheduling, using alternate, less polluting modes of transportation, training drivers to reduce rapid acceleration and deceleration, improving vehicle maintenance and switching to alternative fuels and vehicles.

The BMA recently set up a Green Fleets Policy Committee made up of senior officials and chaired by the Permanent Secretary. Three sub-committees -- public relations, inspection and maintenance, and carpooling were established. As a direct result of the Green Fleets project, the Pollution Control Department and Bangkok Metropolitan Mass Transit, with financial support from the Thai government, will implement a strict inspection and maintenance program in order to reduce air emissions from private buses in late 2002.

The project has also begun to have an impact beyond Bangkok. Chiang Mai City plans to begin greening their vehicle fleets in 2003.

### **3. Municipal Manager Certification Program**

Thai city managers, for the first time, can seek municipal management training and certification, as the result of a program led by US-AEP in partnership with the Kenan Institute Asia and the International City/County Management Association (ICMA).

The program enabled the College of Local Government Development of King Prajadhipok's Institute (KPI) to develop a course curriculum and training materials for local government leaders. This training addresses a crucial problem facing the Thai decentralization process mandated by the 1997 Constitution.

Under the constitution and the Decentralization Act, local Thai government organizations will have increased autonomy and responsibility to manage infrastructure projects, manage city environmental issues and deliver better services for their citizen. However, many local officials lack the skills and experience to effectively manage these responsibilities. Without municipal management training and assistance environmental problems in towns and cities were likely to mount as central government management diminished.

The program supports key leaders from the Local Government Development College to visit ICMA and ICMA university partners to gain experience from the management of ICMA University. With ICMA technical assistance, KPI developed two levels of training courses: basic level -- how to manage your city; and advanced level – management of integrated urban development. The basic level course was launched at two training nodes, in Khon Kaen and Chiang Mai with strong participation and good results. The course is scheduled to be delivered in Trang province in October, 2002. The urban development course is scheduled for delivery in November, 2002. The target group is elected officials from 1,129 Municipalities, and about 7,700 other forms of local government units. The KPI planned to expand more training nodes in the futures. In 2002, about 200 participants completed the training courses.

## **C. Industry Program Success Stories**

### **1. The Sustainable Enterprise Initiative**

A unique partnership of leading Thai and American business schools is providing the research, information, understanding and management skills that will enable business managers to play a more positive role in preserving the environment. It has injected environmental thinking into the teaching of both executive management programs and masters degree level programs.

The “Sustainable Enterprise Initiative” led to revised MBA and BBA programs that went into effect in June 2002 after 20-months of preparation by the Kenan-Flagler Business School at the University of North Carolina (UNC), and the Faculties of Commerce and Accountancy of both Thammasat University (TU) and Chulalongkorn University (CU).

The new Chulalongkorn program included courses with strong “sustainable enterprise” content, including Environmental Management Accounting, Business Sustainable Management, Strategic Management, and Business Concepts and Ethics.

At Thammasat, the revised curriculum for both graduate and undergraduate programs on sustainable enterprise included Strategic Management and Operation, Production and Logistics,



and Green and Social Marketing. Thammasat is working on a new Sustainable Business Management course with UNC which is scheduled for delivery in the November Semester. Further curriculum development on sustainable enterprise as a major or concentration is underway.

The Kenan Flagler Business School, assisted and advised TU and CU in the development of the new course and teaching materials, based on its own highly successful program.

The Thai programs, however, also included new material based on field research done in Thailand and on the advice of Thai business advisory committees.

A total of seven case studies on Thai environmental issues and company management responses were completed and another eight studies are underway. The case studies were used as teaching materials. The classroom teaching was supplemented by original research on “Environmental Management: MNCs and Thai Business,” and “Waste Electrical and Electronic Equipment from Cradle to Grave: A Cost/Benefit Analysis.”

Research projects on environmental management at ports and green logistics in the vegetable oil industry were well underway and scheduled for delivery by the end of 2002.

The initiative extended to the strong executive education programs run by both universities. Dr. Sumet Tantivejkul, Secretary General of Chaipattana Foundation (under the patronage of His Majesty the King) delivered the keynote address on sustainable management at a course on “Competitiveness and Sustainable Enterprise” run by the Chulalongkorn faculty with support from Kenan-Flagler professor Dr. Stuart Hart. Chulalongkorn also held a “train the trainers” course that attracted 46 professors from other business schools interested in the sustainable enterprise program.

More than 70 participants from business and government agencies attend the Thammasat CEO Forum and executive education course on “Strategies for Sustainable Business: Raising the Bottom of the Pyramid.”

Thammasat has institutionalized its environmental outreach program with a center for environmental management and sustainable enterprise that will include a web-based information center.