

Report / Fiscal Year of 2005

Project on Infrastructure Improvement for
Rationalization of International Energy Use

"Project on Improvement in Infrastructure for Energy
Management in ASEAN Countries"

(Promotion of Energy Efficiency and Conservation
For
Energy Management
Under
SOME-METI Program (2005 – 2006))

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Summary

The rapid economic development of the ASEAN (the Association of Southeast Asian Nations) member countries is continuing and it is expected that their energy consumption will also grow rapidly in the future. Therefore, efficient use of energy and measures for preventing global warming will become even more necessary than ever.

This program is one of the main projects under ASEAN Plan of Action for Energy Cooperation (APAEC) and is named PROMEEC (Promotion of Energy Efficiency and Conservation) in ASEAN, which was authorized by ASEAN Ministers of Energy Meeting (AMEM). This program consists of three projects, “major industries,” “buildings” and “improvement in infrastructure for energy management”, hereinafter referred to as PROMEEC (Major Industries), PROMEEC (Buildings) and PROMEEC (Energy Management) respectively.

The fiscal year of 2005 is the sixth year of implementation of PROMEEC (Major Industries) and PROMEEC (buildings). The efforts to implement the activities by the counterparts such as the focal points of the respective countries including ASEAN Center for Energy (ACE) are becoming more established and active. Awareness of the need for a reduction in energy consumption has started to penetrate into these countries, due to rising energy prices caused by a recent continuous steep rises in oil prices and with the Kyoto Protocol effectuated on February 16th, 2005.

This fiscal year was also situated as the second year of Phase-2 of the PROMEEC project. In Phase-2, the ASEAN countries are expected to make self-help efforts to implement and disseminate the improvement measures which were acquired during the previous phase. Therefore, in fiscal year of 2005, continuing on from the previous fiscal year, we aimed to establish a system to implement and disseminate the improvement measures which were discussed and proposed in each ASEAN country. These measures were discussed and proposed based on the achievements and the results of the energy audits which were carried out at various factories and buildings in ASEAN countries in the past.

To achieve this target more effectively, the PROMEEC (Energy Management) was established and launched in 2004, in addition to PROMEEC (Major Industries) and PROMEEC (Buildings). This project was started based on the agreement reached through consultations with the focal points of the ASEAN countries. The purpose of this project is to improve and enhance the energy management infrastructure in ASEAN countries, which is an important basis for promoting energy conservation. Ideally, in this project, we will aim to establish the “ASEAN Energy Management System” which can be shared with the ten ASEAN countries, within four or five years.

Therefore in the fiscal year of 2005, which is the second year of this project, we implemented the following activities. These activities were based on the results of the previous year’s fact-finding studies on the existing systems and infrastructure for energy management in the ten ASEAN countries, as well as the established basic concept of “ASEAN Energy Management System.”

◆ Research and Study Workshop in Japan (July 25th, 2005 – July 29th, 2005)

We invited concerned persons including the focal points of the ten ASEAN countries to the

workshop. The workshop consisted of the lecture on the policy on energy management, the activities in enterprises for promoting energy conservation including visits to factories and buildings and the discussion on the plan / required functions for the “ASEAN Energy Management System”.

- ◆ Intensive survey on the possibilities of sharing facilities and services of the existing implementation organizations in ASEAN countries

We did survey on facilities owned and services provided by the existing implementation organizations in five ASEAN countries, or Indonesia, Malaysia, Philippines, Vietnam and Thailand. The surveys focused on whether or not the existing implementation organizations have intentions and whether or not there are possibilities for the implementing organizations to provide the ASEAN countries with their facilities and services. These services are namely energy audits, various programs of training and information services.

- ◆ Development of the basic plan for “ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings”

We established the basic plan for the award system. The purpose of this system is to collect information on the best practices in energy management for major industries and buildings and disseminate in ASEAN countries. Firstly, ECCJ (The Energy Conservation Center, Japan) proposed a plan. Next, the plan was discussed and revised based on the outcome of the consultations with the focal points of the five ASEAN countries. Then the plan was basically agreed through the discussion with the focal points of the ten countries in the Summary and Post Workshops, and finally established the basic plan. In accordance with the agreed plan, some members of the judging committee were selected, and the Research Forum in Japan was held in March 2006 by inviting the selected judging committee members. The basic proposal of the application form was finally prepared based on the discussion made by the participants at this forum.

- ◆ Development of the basic plan for the “ASEAN Energy Management System”

Based on the outcome of the above survey and consultation, ECCJ prepared a proposal for a basic plan for the “ASEAN Energy Management System.” The plan was discussed with the representatives of the ten ASEAN countries and finalized in the Summary and Post Workshops.

As a result of the above activities, it was able to establish the basic plan for the “ASEAN Energy Management System” and to have started preparing some of its functions to be included in the system for working into practice from the fiscal year of 2006. In particular, we were able to establish the basic plan for the award system for best practices in energy management for major industries and buildings with a target to start working from April 2006.

The on-site activities of the project for the fiscal year of 2005 was started with the Inception Workshop which was held in late June 2005, and ended with the Summary and Post Workshops which were held in late January 2006. These workshops are common with the projects for major industries and buildings.

For the purpose of smoothly starting the project activities, in the Inception Workshop, we

explained and finalized the implementation plan and confirmed the status of the preparations for the on-site activities with the participating members. After this workshop, we were able to smoothly carry out the intensive survey and discussion at the existing implementation organizations in the five ASEAN countries.

In the Summary and Post Workshops, under attendance of the representatives (focal points) of the ASEAN countries participated, we reported the results and achievements of the activities implemented in the ten countries, so that the outcomes could be shared among the ASEAN member countries. Then, the future direction of the project, including the basic implementation plan of the project for FY 2006 was also discussed.

The following are the specific activities of the PROMEEC (Energy Management) project in the fiscal year of 2005.

June 30th, 2005 - July 1st, 2005 (The period of the business trip was from June 29th to July 2nd):

“Inception Workshop on Promotion of Energy Efficiency and Conservation (PROMEEC) (Major Industry, Building and Energy Management), SOME – METI Work Program 2005 - 2006.”

The workshop was held in Manila, in the Philippines. The workshops for the “major industries,” “buildings” and “improvements of energy management systems” were held together.

Although the representative from Myanmar was absent, fourteen members consisted of the representatives from the ASEAN countries and the ASEAN Center for Energy (ACE) including the representatives of the Energy Conservation Center, Japan (ECCJ) participated. The following activities were carried out in the workshop.

Opening addresses by representatives of the concerned parties, including the host country

Session 1: Presentation on “Highlights of the PROMEEC Project Accomplishment” and “Promotion of Best Practices in Industries in Japan” (presented by ECCJ)

Session 2: What was learned and what is expected from the PROMEEC Project (presented by the representatives of the ASEAN countries)

Session 3: Explanation, discussion and finalization of the implementation plan for 2005 – 2006 (led by ECCJ)

July 25th, 2005 - July 29th, 2005: Implementation of the “Research and Study Workshop in Japan”

Twenty participants, including the focal points from the ten countries and ACE, gathered for the workshop. In the workshop, the participants brainstormed ideas of the plan for the “ASEAN Energy Management System” and its required functions. This program was conducted as a part of the multi-country training programs on energy conservation. The program included the lectures on governmental policy and measures for energy management in Japan and the visits to factories to deepen the participants’ understanding of the voluntary activities of improvement for energy conservation by Japanese companies. On the last day of the program, we setup the brainstorm session to create ideas of the plan for the “ASEAN

Energy Management System” and its required functions. The issue was vigorously discussed and the program was completed successfully.

September 4th, 2005 - September 14th, 2005: The first local activities

The following activities were carried out in Indonesia, Malaysia and the Philippines.

1. Intensive survey and discussion on the possibilities and intension for the existing implementation organizations to provide other ASEAN countries with their facilities and services

We visited the existing implementation organizations in the above three countries and conducted surveys on the facilities and services of the implementation organizations. In the surveys, we also discussed whether these organizations had the possibility and intension to provide the other ASEAN countries with the facilities and services owned by them.

2. Discussion on the proposed basic plan for the “ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings”

We explained to and discussed with the focal points and concerned persons in the respective countries about the draft plan which we had prepared beforehand. We also asked them about their requests for the plan.

October 18th, 2005 - October 27th, 2005: The second local activities

The following activities were carried out in Vietnam and Thailand.

1. Intensive survey and discussion on the possibilities and intension for the existing implementation organizations to provide other ASEAN countries with their facilities and services

We visited the existing implementation organizations in the above two countries and conducted surveys on the facilities and services of the implementation organizations. In the surveys, we also discussed whether these organizations had the possibility and intension to provide the other ASEAN countries with the facilities and services owned by them.

2. Discussion on the proposed basic plan for the “ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings”

We explained to and discussed with the focal points and concerned persons in the respective countries about the draft plan which we had prepared beforehand. We also asked them about their requests for the plan

January 25th, 2006 - January 28th, 2006: Summary and Post Workshops

“Summary Workshop and Post Workshop on Promotion of Energy Efficiency and Conservation (PROMEEC) (Major Industry, Building and Energy Management), SOME - METI Work Program 2005 - 2006.”

The workshops were held in Bandung, Indonesia. The workshops for the “major industries,” “buildings” and “improvements of energy management systems” were held together.

Although the focal points of Myanmar, Singapore and Vietnam were absent, twenty-two members consisted of representatives from the ASEAN countries, the ASEAN Center for Energy (ACE) and the Energy Conservation Center, Japan (ECCJ) participated in the workshops. The summary of the activities and discussions were made in the workshops.

Firstly, ECCJ reported the results and achievements of the activities in the fiscal year of 2005, namely the “Research and Study Workshop in Japan” and the two above-mentioned local activities. We then explained and discussed proposals for the basic plan of the “ASEAN Energy Management System,” as well as the proposed basic implementation plan for 2006 - 2007.

The following two points were especially valuable outcomes. Namely, firstly, the basic plan for the “ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings” was established, agreed and has become ready to be implemented from the fiscal year of 2006. Secondly, the proposed basic plan of the “ASEAN Management System” are becoming more established and concrete.

Opening addresses by representatives of the concerned parties including the host country

Summary Workshop

Session 1: Major industries

Session 2: Buildings

Session 3: Energy management

- Report on the accomplishment of the activities in the fiscal year of 2005
- Explanation and discussion on the proposed basic plan of the “ASEAN Energy Management System”
- Basic direction of the activities after the fiscal year of 2006, including the basic implementation plan of PROMEEC (Energy Management) for 2006 – 2007

Post Workshop

Session 1: Confirmation of the results of discussion for each project made in the Summary Workshop

Session 2: Basic implementation plan after the fiscal year of 2006, including the basic implementation plans of the three PROMEEC projects for 2006 – 2007

As a summary, we implemented the higher-level of activities in the fiscal year of 2005, pursuing the enhanced self-help efforts by the ASEAN member countries, aiming at the support for the ASEAN countries to in steadily establish a system or infrastructure for sustainable energy conservation activities.

The PROMEEC (Energy Management) project is situated as an important one to build such an infrastructure. Based on the surveys and studies made in these two years, we were able to establish the following for the purpose of providing more specific services under the “ASEAN Energy Management System”.

(1) More concrete basic plan for the “ASEAN Energy Management System.”

(2) The award system of best practices in energy management for major industries and buildings to be executed after the fiscal year of 2006
These are the most valuable outcome of the fiscal year of 2005.

Finally, for the implementation of this project, we were able to gain full cooperation from the people in charge of this project in the respective concerned organizations of the ASEAN countries. We would like to express our sincere appreciation for the cooperation.

I Objectives and Background of the Project

The objective of this project is to explore and propose measures for efficient use of energy in the countries and the regions which contribute to a stable energy supply for Japan, through the investigation and analyses on the energy policies and tendency of energy consumption, provision of advice on efficient use of energy by exchanging resource persons, targeting to build a stable and suitable infrastructure for energy supply and demand to meet the international and domestic economic and social environment.

By building the infrastructure and basis for energy management for the purpose of promoting energy conservation in the major industries and buildings, in order to achieve the above objective, the PROMEEC (Energy Management) aims at contributing to the promotion of energy conservation and environmental protection through the promotion in realizing energy conservation measures in Southeast Asian nations by assisting the activities of ASEAN.

This project was established in 2004, and is called “PROMEEC (Energy Management)” in the ASEAN side. PROMEEC is the abbreviation for the “Promotion of Energy Efficiency and Conservation.” It is a collaboration program between the Ministry of Economy, Trade and Industry (METI) and ASEAN, approved by the ASEAN Ministers on Energy Meeting (AMEM). METI-ECCJ is technically and operationally cooperating with ASEAN by supporting ASEAN both in the establishment of the infrastructure and basis for energy management essential for promoting energy conservation in the industry and building sectors of ASEAN countries and in the realization of improvement. We are also cooperating by supporting improvements of the system from a technical and operational point of view.

The goals of this project are to establish the following.

1. Sustainable infrastructure and system for energy management called as the “ASEAN Energy Management System” which can be shared by the ASEAN countries and contributing to the promotion of energy conservation in the industrial and building sectors.
2. Specific functions for the “ASEAN Energy Management System” to provide customers with facilities and services to assist the activities for implementing and disseminating various improvement for energy conservation, such as energy audit, training services and information provision, including rule to smoothly and properly work these functions in the “ASEAN Energy Management System”
3. Effective collaboration with the PROMEEC (Major Industries) and PROMEEC (Buildings) for the purpose of sharing information and utilization of accomplishments of the projects to disseminate the outcomes, and so on.

This project was established based on the experience and the achievements of PROMEEC (Major Industries) and PROMEEC (Buildings) being implemented since 2000. Namely, this project was established in the fiscal year of 2004, as a new project of PROMEEC, to promote improvements in energy management which is the common issue for both PROMEEC (major Industries) and PROMEEC (Buildings) and is the most effective measures for energy conservation.

To achieve the above-mentioned goals, the activities for a long term of approximately 5 years

will be required and the PROMEEC (Energy Management) has been implemented based on the following stepwise approach.

[The first stage]

Development of the plan of the “ASEAN Energy Management System”, based on the investigation on the actual situations of the infrastructure and basis for energy management in ASEAN countries and on the transfer of technologies and experience realized in Japan.

[The second stage]

Establishment of the “ASEAN Energy Management System” including measures and procedures to work the system

[The third stage]

Actual operation to work the “ASEAN Energy Management System” and improvement of the system

During the past two years, the activities of the first stage have been almost completed, and the actual activities have shifted to a level of the second stage. Through the activities in the fiscal year of 2005, the basic plan for the “ASEAN Energy Management System” was established and the activities to develop the “ASEAN Award System of Best Practices in Energy Management” as one of the activities the second stage have been implemented toward realization to work the award system.

Following the above activities, we will enhance the various activities for the second stage of the ASEAN Energy Management System, and will move on to the activities for the third stage to implement and work any of the systems which are completed and ready for implementation or operation.

This project was actually implemented by the Energy Conservation Center, Japan (ECCJ), and was conducted mainly by the following two members who were in charge of the project.

Mr. Kazuhiko Yoshida General Manager, International Engineering Department

Mr. Takashi Sato Technical Expert, International Engineering Department

II ASEAN Energy Management System: Discussion and Study on the Utilization of Existing Implementation Organizations

II-1 Summary

In the fiscal year of 2004, the ECCJ and ASEAN team conducted investigation on the present situations of the actual infrastructure and basis for energy management in the ten ASEAN countries. The investigation includes that of the existing implementation organizations. The results of the investigation confirmed the existence of some implementing organizations which promote energy conservation through conducting energy audit and training for factories and buildings. Based on the results of the investigation, it was considered that these existing implementation organizations could provide services and facilities to the other ASEAN countries and that utilization of the existing organizations would be the most realistic and feasible method to be tried first.

In the fiscal year of 2005, therefore, based on the actual result of the investigation made in the fiscal year of 2004 and on the recommendation by the focal points, the team visited major organizations which were providing services such as energy audits and training. The team investigated the actual services and facilities provided by the organizations and discussed the possibility and intension for these organizations to provide customers in the other ASEAN countries with their services and facilities. Specifically, the team visited the implementing organizations in five countries, namely Indonesia, Malaysia, the Philippines, Thailand and Vietnam and sent the questionnaire to Singapore to investigate the above-mentioned issues. In actual, the team carried out investigation on twenty implementation organizations all together, including ESCOs (energy service companies).

As a result, it was confirmed that all these implementation organizations were eager to provide their services to other ASEAN countries. The fact shows a high possibility that we can utilize the existing implementation organizations as an important function in the “ASEAN Energy Management System”.

What shall be done next is to discuss and establish the procedure and system for the clients in the ASEAN countries to utilize these implementation organizations.

The details are described in the following sections.

II-2 Intensive Discussion and Survey on the Possibility of Utilizing the Facilities and Services of the Existing Implementation Organizations in ASEAN Countries

II-2-1 Indonesia

Summary of Survey

(1) Outline of the activities

The initial plan was to meet the focal points of the Indonesian Ministry of Energy and Mineral Resources (MEMR) and other interested parties, to explain and exchange ideas on our proposal for the award system of best practices in energy management for industries and buildings. However, due to their busy schedule, we decided to receive their comments and opinions at a later date.

One person from the Ministry of Energy and Mineral Resources and one person from the ASEAN Center for Energy (ACE) joined us at the meetings with persons from the implementing organizations.

At each meeting with the organizations or the companies, we first explained the whole picture of the PROMEEC Projects and the role including the objectives and specifics of the PROMEEC (Energy Management) Project, as well as the purpose of the survey. We then verified the answers in the questionnaire which we had distributed beforehand, and discussed whether the organizations had the possibility of cooperating as one of the implementation organizations for the ASEAN Energy Management System. We also discussed the conditions for the cooperation.

(2) Survey schedule and main interviewees

Date	Organization visited	Main interviewees of the organization
September 4	Arrive at Jakarta	
September 5	Education and Training Center for Energy and Electricity (ETCEE) Ministry of Energy and Mineral Resources (MEMR)	Mr.Kansman Hutabarat (Head)
September 6	KONEBA GOGINDO Daya Bersama,	Mr. Gannet Pontjowinoto (President, Director) Mr.Sri Djoko (President, Director)
September 7	Leave Jakarta	

1.1 Organizations visited for discussion and survey

1.1-1 Education and Training Center for Energy and Electricity (ETCEE)

[Interviewees]

Mr. Kansman Hutabarat (Head)

Mr. Zendra Permana Zen (Head, Energy and Electricity Development)

(1) Outline of the organization

The organization was established in 2001 mainly as an education and training center for officials of central and local governments. It is a 100% state-owned organization under the Ministry of Energy and Mineral Resources (MEMR). They mainly provide education and training to governmental officials, but also conduct energy audits.

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

According to the chief executive of ETCEE, they have the basis in terms of facilities and capacity, so it is possible to receive trainees from foreign countries as one of the implementation organizations of the ASEAN Energy Management System. They are willing to consider involvement in the system. As a state-owned organization, they are required to report their activities to the government, but they can implement projects independently.

They indicated the conditions which are needed for the actual cooperation, such as collection of the fees from the trainees, official assistance from the government, as well as expansion and improvement of the facilities. However, as a whole, they showed a very keen and positive attitude towards the proposal. They also might expect the following, if they participate in PROMEEC as an implementation organization of the ASEAN Energy Management System.

- Technical assistance from ECCJ They might also have a vague expectation that
- Introduction of training facilities through assistance of Japan, possibly through JICA (Japan International Cooperation Agency)

The positive attitude of the ETCEE staff was impressive. ETCEE is an attractive candidate as an implementation organizations of the ASEAN Energy Management System in the future.

(b) Situation of existing resources/infrastructure

They presently have sixty-five staff, twenty of them are technicians and around three staffs are economists. They mainly conduct education programs on energy conservation, which put major emphasis on buildings and building facilities.

The training center building has three floors above ground and one underground floor. The lecture rooms are large and spacious. Although handmade, they have simulation equipment for the operation of electric facilities such as motors and lighting facilities. They also have photovoltaic systems, wind turbines and the equipment for the simulated operation of a small-scale hydropower generator. They are equipped with measurement instruments which are used in the training, such as different sort of equipment for electricity measurement, as well as gas analyzers. Besides they have laboratories and a library as well. Although the training is carried out in Indonesian and the textbooks are written in Indonesian, the lecturers can deliver the lectures in English. Some staffs who we met were able to have conversations in English sufficiently well. There is a language laboratory in the

training center so that the trainees can practice English there. According to them, they bring in twenty trainees for one training program, but the above-mentioned training facilities are not sufficient to accommodate the number of trainees that they host. This is because of a lack of budget. At present, the trainees are principally supposed to stay in hotels, but it is also possible to stay in the training center for one or two nights, although the trainees have to share rooms for accommodation. They have a plan to construct a dormitory-style accommodation facility, hopefully by the end of next year.

1.1-2 KONEBA

[Interviewees]

Mr. Gannet Pontjowinoto (President Director)
Mr. Judianto Hasan (Operation/Marketing Director)
Ms. Julia Indrayani Puar (Technical Manager)

(1) Outline of the organization

This state-owned company was founded in 1987, and is the implementation organization of the government for energy conservation. Their operations consist of energy audits and training, as well as various projects including their own ESCO business. According to them, unlike the previous year, the energy situation has fallen into a critical state, and the surroundings of the implementation of energy conservation have changed dramatically. The changes were remarkable after July 2006, when the “Presidential Instruction and then the Minister of Energy and Mineral Resources Decree” on energy conservation were issued. In response to this change, they already added six staffs this year, and are planning to add around five more staffs. They presently have sixty staffs including twenty-six engineers. Most of the engineers are experienced workers with more than ten years experience.

As for business, they implement energy audits for industries and buildings, as well as training, and engineering for projects including the ESCO business and consulting services on energy management.

Regarding the facilities, they only have an ordinary office, meeting rooms but have no training rooms inside the KONEBA buildings, so they rent a hotel and its facilities to hold the training courses. They are equipped with measurement hardware for the energy audits. They almost have sufficient facilities.

They requested support from ECCJ, including provision of various sorts of information. Therefore, we explained again about the specifics of the present activities of the three projects of PROMEEC, and how the establishment of the ASEAN Energy Management System would effectively meet their needs. They have understood the value of the project very well, and showed great expectations for the future development of this project. We had thought before the visit that KONEBA was likely to participate in this project, in reality, they were much more eager than we expected.

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

Similar to ETCEE, KONEBA was also very keen to implement the energy audits and the training in other countries, as one of the implementation organizations of the ASEAN Energy Management System. According to KONEBA, although they are a state-owned company, they have independent management authority for implementing the projects, and so they do not need to gain approval from the government. The conditions for the implementation were to secure the financial resources, including the collection of fees from clients, as well as financial assistances from public institutions such as the government. However, they did not have a plan to construct any new training rooms or accommodation facilities for the training programs. Instead, they were planning to utilize external commercial facilities such as hotels. This was different from the plan that ETCEE expressed.

(b) Situation of the existing resources/infrastructure

KONEBA was established in 1987 as a state-owned company for energy conservation, which would be engaged exclusively in energy conservation projects in general. Therefore, the company has a certain level of equipment for energy audit and is implementing training programs. However, the business basis is becoming weaker, partly because of the change in the management / business environment. They struggle with securing the experts to carry out the energy audits or the training. There are presently less than twenty experts who can carry out the energy audits or the training in the company. In this situation, the other registered nine private companies are carrying out the training independently or they sometimes carry out the training in collaboration with KONEBA. KONEBA is also providing consulting services, including many energy audits and advice on policy for the government. KONEBA is the only existing implementation organization specialized for energy conservation, and so strengthening the organization of KONEBA will be necessary, for example official assignment of specific role under the law when the law is legislated.

(c) Recent situation of energy in Indonesia

The president of KONEBA explained recent changes in the situation in Indonesia. According to the explanation, the Indonesian enterprises are alarmed by and strongly objecting to the government's plan to quickly eliminate its subsidies on prices on energy such as fuel oil, natural gas and electricity, because the plan would threaten the continuation of their businesses. Although the electricity tariffs were changed to reduce the peak demand, many factories are operating around the clock and a sudden change in the tariff affects the profits of the businesses significantly. Under such changes to the energy situation, while the "Minister of Energy and Mineral Resources Decree" was issued in July, the possibilities of a concrete improvement in the situation have not been made clear. Therefore, there are many inquiries on how to meet the requirements specified in the "Minister of Energy and Mineral Resources Decree" and demand for the energy audits are rising steeply. KONEBA has to conduct some 300 energy audits this year, and the issue now is the

coverage of the cost of the energy audits.

As part of the diversification of energy sources, a natural gas pipeline is being constructed from Sumatra to Java, and will be completed in 2007. The enterprises cannot wait for the completion of construction and more factories are switching fuel to coal, which is escalating the problem of environmental pollution.

On the other hand, there is more criticism of the government, questioning why they do not conduct the energy audits in the transportation sector. KONEBA said that they are dismayed by requests to study such energy audits, which are put to them.

1.1-3 GOGINDO Daya Bersama

[Interviewees]

Mr. Sri Djoko Parato (President Director)

Mr. Basuki Siswanto (Director of Marketing)

Ms. Cita Dewi (Business Development Manager)

(1) Outline of the organization

The company is an energy supplying company which offers wholesale supplies of energy, such as electricity, cold water and steam, though it is an ESCO 100% owned by PLN which is a state-owned power company. They construct and operate cogeneration power plants and supply energy to their clients. Their present capacity is 150 MW, and they are planning to expand to 200 MW of capacity in the future. As a part of their business, they are providing clients with energy audits, training for its operation and maintenance, as well as information services in the project. The company's policy is to start a full-scale project which focuses on energy conservation from 2006. Although they own ninety staffs and outsource sixty staffs hence 150 staffs, there are less than five staffs who actually can conduct the energy audits and training. The actual situation is that they are only conducting activities for energy conservation of the supply side and the demand side including DSM (demand side management), as a part of their retail business. During our survey made in 2004, officials of MEMR said that there were ten ESCOs registered as the implementation organizations for training on energy conservation, and GOGINDO was the best of the ten ESCOs. It seems that the reality of the operating situation is somewhat different.

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

The actual business of GOGINDO and its role as the Indonesian implementation organization was different from what we had expected before the meeting. Nonetheless, the top management including the president was keen on participating in the project as one of the implementation organizations of the ASEAN Energy Management System. For actual implementation, they will need to gain approval from their shareholder or PLN, and set up the fees on a commercial basis. Therefore, they are requesting financial assistance from the government etc.

(b) Situation of existing resources/infrastructure

They do not have little existing infrastructure. Their main work is in wholesale supply of electricity as a subsidiary organization of PLN. Related to this work, they are providing operational and maintenance services to the plants, as a part of the whole service package. According to them, they have experience in energy auditing because the energy audits are included in this package. They have a limited number of engineers (about two or three) who can carry out the energy audits.

1.2 Results of the discussion and survey

The ECCJ-ASEAN team visited the existing implementation organizations in each country and investigated the facilities and the services owned by them, based on the questionnaire prepared and distributed beforehand. We also discussed with them about the possibility of providing their facilities and services to other ASEAN countries under “ASEAN Energy Management System”.

The results of discussion in Indonesia show that the three Indonesian implementing organizations can offer their integrated services, including energy audits, training and education, as well as information services. It is likely to be able to utilize these existing organizations. All the three organizations are looking forward to the future of the ASEAN Energy Management System. Especially, ETCEE and KONEBA showed a very willing and positive attitude towards their cooperation. These two organizations are fully equipped with training facilities, lecture rooms and the measurement hardware. They also seem to have sufficient capacity to take active roles as the trainers or as energy auditors.

II-2-2 Malaysia

Summary of Survey

(1) Outline of the activities

The ECCJ-ASEAN team had a meeting with Energy Commission (EC) and Ptm in Kuala Lumpur on September 8th. The team also visited the Center for Education, Training and Research in Renewable Energy and Efficiency (CETREE) and had a meeting with concerned people in Penang on September 9th. Similar to the activities in Indonesia, we did survey and discussed about whether the organizations had the possibility of offering their existing functions and services to the “ASEAN Energy Management System” for the purpose of sharing the functions and services among the ASEAN countries. Moreover, the team discussed with them about the conditions for their cooperation, as well as their ideas for operational methods when they can provide specific services.

The discussions proceeded efficiently thanks to their deep understanding of the specifics of our proposed plan explained by us.

At all the organizations which we visited, the top managers of each organization attended the meetings. Of course, each organization requested different conditions for participation in the project, but they said that they could offer their services and facilities to the other ASEAN countries. Furthermore, they showed positive attitudes towards contributing to “the ASEAN Energy Management System” through providing services such as energy audits and training as implementation organizations. The Malaysian organizations as well as Indonesian organizations showed such a keen willingness to participate, that we are starting to get a better perspective on the feasibility for future implementation. All the results so far have been better than we had expected. We are getting ready to discuss how to utilize and manage these organizations.

The personnel from ACE accompanied us on the visits to these organizations. A staff from Ptm also visited CETREE with us.

At each meeting with the organizations or the companies, we first explained the whole picture of the PROMEEC Projects and the role including the objectives and specifics of the PROMEEC (Energy Management) Project, as well as the purpose of the survey. We then verified the answers in the questionnaire which we had distributed beforehand, and discussed whether the organizations had the possibility of cooperating as one of the implementation organizations for the ASEAN Energy Management System. We also discussed the conditions for the cooperation.

(2) Survey schedule and main interviewees

Date	Organization visited	Main interviewees of the organization
September 7	Arrive at Kuala Lumpur	
September 8	Ptm, Energy Commission	Dr. Hassan Ibrahim (Director, Energy Efficiency and Innovation Unit)
September 8	Arrive at Penang	
September 9	CETREE	Dr. Abdul Malek Abdul Rahman (Deputy Director)
September 11	Leave Penang	

At EC, we explained and exchanged ideas with Ptm's focal points and other concerned people about our proposed system for the award of best practices in energy management for major industries and buildings. EC commented that they understood the difference between our proposal and the presently implemented award system for buildings. They also said that they thought the aims of the proposed system were very good and wanted us to proceed with discussions with interested parties of ASEAN to realize the system. The award system for buildings has already been implemented, and so it is important to make clear the difference between the existing award system for buildings and the proposed award system. It is necessary to explain the same explanation made in the visiting countries for the other ASEAN countries as well.

2.1 Organizations visited for discussion and survey

2.1-1 Energy Commission (EC) and Ptm

[Interviewees]

Dr. Hassan Ibrahim (Director, Energy Efficiency and Innovation Unit)

Mr. Muhammad Sharul 'Azam bin Abdul Rhaim (Assistant Director, Energy Efficiency unit)

Mr. G. Lalchand (Chief Engineer, Mensilin Holdings SDN BHD) (He is a resident consultant with EC.)

Ms. Azah Ahmad, Research Officer, Ptm

Mr. Faizul Ramdan Zainal Abidin, Energy Engineer, Ptm

(1) Outline of the organization

The Energy Commission is the implementation organization under the Ministry of Energy, Water and Communications. It was founded in 2001, when the Ex - Department of Electricity and Gas Supply was reformed. There are units handling energy conservation and renewable energy. Dr. Hassan is the director of the energy conservation unit. It is said that he was the key person who had proceeded with discussion and negotiation with Japan and Australia pursuing the possibilities of cooperation in the late 1990s, even before the first Executive Director of ACE was appointed. It was just after the end of the period in which cooperation between the EU (European Union) and ASEAN was agreed and implemented under exclusive conditions. ACE was not founded at the time, but he has been recognized as the predecessor of the first Executive Director of ACE, and has been a key player in the cooperation between Japan and ASEAN. He was also deeply involved in the initiation of PROMEEC, which we are implementing now.

Although EC is an implementation organization, the number of staff is small, and so in reality, they assign Ptm or the certified ESCOs to actually implement projects. Their main work is to provide advisory services to the government on political measures such as the development of the master plan. For the implementation of the projects, they are receiving assistance from Denmark, and employing Danish consultants in this process.

In relation to the Energy Efficiency Regulation on Electricity, which is presently in process of legislation in the Parliament, they have started training energy managers for accreditation in the electricity area. According to EC, they have certified five ESCOs and assigned the implementation of the projects to them, but only three or so companies are actively implementing the projects.

Ptm, as well known, was established in 1998 as the implementation organization for projects such as the MIEEEP project. Many of their activities are project based, like MIEEEP or DSM. They mainly implement energy conservation projects through energy audits. They have an energy audit team of five engineers and ten technicians and own sensors and equipment sufficient for energy audits. The training is actually carried out by the same team, on a project basis.

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

Energy Commission (EC) has understood the basic concept and aims of the ASEAN Energy Management System. As the Malaysian organization, they showed a clear intention to provide their resources to the system and said that they would like to cooperate on the project. As for Ptm, although they are a government organization, they can implement projects independently, and they do not need to gain approval from EC or other government ministries but they are requested to report their activities to the government. EC's position on this was that there was no problem with Ptm offering services such as energy audits to the other ASEAN countries.

In terms of the certified ESCOs for the training of the energy managers, EC's position was that there was no problem with these ESCOs participating, by providing their resources, on a business basis. Malaysia has an association of ESCOs called as MAESCO (the Malaysian Association of ESCO), and so one way of requesting the cooperation of ESCOs would be through this organization. However, EC commented that there will be an issue about how to deal with their accreditation process, if the ESCOs are to participate in the international cooperation. Dr. Hassan commented that it would be necessary to set up a concept similar to AEMAS (ASEAN Energy Manager Accreditation System) in ASEAN, although its nature would be different. We agree with his opinion, and this will be an important issue to be considered in the process of detailed planning in the future.

(b) Situation of the existing resources/infrastructure

They are outsourcing to conduct energy audits and the training, mainly

commissioning the ESCOs for the work. Therefore, they do not possess personnel or facilities, and employs or rents these resources from external sources as necessary.

2.1-2 Center for Education, Training and Research in Renewable Energy and Efficiency (CETREE)

[Interviewees]

Dr. Abdul Malek Abdul Rahman (Deputy Director)

Mr. Badrol Hisham Mohd Nowani (Co-ordinator)

(1) Outline of the organization

The organization was established in 2000 under the 8th Malaysian Plan and initially operated by receiving funds from DANIDA of Denmark. Their objective is to educate and raise the public awareness in Malaysia on energy conservation and renewable energy through education and training. The center is situated inside the complex of USM (Universiti Sains Malaysia, University of Science Malaysia) in Penang. The Ministry of Education and USM are implementing education and training on energy conservation and renewable energy through CETREE, carrying out their responsibilities under the Ministry of Energy, Water and Communication (MEWC).

Fourteen staffs including the administration staffs operate the center, and they are outsourcing for lecturers and experts. The following are the main categories of their activities.

- 1) Educations targeting children in primary and secondary schools
- 2) Educations in the universities (They have two courses.)
- 3) Planning and implementation of mobile exhibitions (They offer exhibitions on energy conservation and renewable energy for housing, a demonstration car fueled by used cooking oil, etc.)
- 4) Information services for the general public
- 5) Training for professionals (They put a major emphasis on energy conservation and renewable energy for building design, including energy audits for buildings.)
- 6) Information services through the website and activities to enhance public awareness

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

The result is that they can offer services to the other ASEAN countries utilizing their existing facilities and personnel, and they would like to participate in the project as an implementation organization of the ASEAN Energy Management System. According to them, CETREE was an independent organization and they could make decisions on their business and projects by themselves without any approval from government ministries. If they are requested the implementation, assuming that the existing functions and facilities are utilized, the possible services would be the education on energy in general and energy conservation in particular

for persons from a wide range of categories from professionals for buildings through the top management and the general public. While the participation fees would of course be collected from the participants, the fees could be low because the infrastructure of the university is already fairly well established.

At first, they did not seem to understand the purpose of our visit or the contents of the questionnaire distributed beforehand and were a little confused while kindly receiving us. However, after the introductory explanation of the project by the visiting team at the beginning of the meeting, they seemed to understand the purpose and specifics of the project as well as the purpose of our visit at the time. We felt that we were able to make a valuable discussion after that. Even the focal points sometimes do not well understand all of the points of the project to an extent for the focal point to explain it to the other concerned parties.

As this situation is expected from the start, it will be necessary to take time for introduction prior to discussing the main issues so that the concerned people including the focal points can fully understand the purpose and specifics of the project.

CETREE was so eager that they asked when they would receive notice of the implementation request from us, as if their participation was already decided. We explained the procedure and the schedule for how the decision would be made in the future. We explained that the next consultation, on the premise that we would delegate the implementation to CETREE, will be held in April in 2006 or later, after the decision is made with the focal points in the Post Workshop scheduled in February 2006. It was impressive that they were even a little disappointed to hear that they would have to wait for so long.

(b) Situation of the existing resources/infrastructure

The building at the university which accommodates CETREE has several large lecture halls, and the capacity of each hall is of 150 people. They have rooms for workshops, and for stocking the displays which are used in mobile exhibitions, as well as rooms for the preparation of practical training. CETREE said that they would move to a different building which was also situated inside the campus of the university in the near future. After the meeting, we looked around the facilities on the university campus. The university is situated in a spacious place with a comfortable environment, and is very well equipped with facilities including a guesthouse, a dormitory, a canteen and a medical center.

2.2 Results of the discussion and survey

The ECCJ-ASEAN team visited the existing implementation organizations in each country and investigated the facilities and the services owned by them, based on the questionnaire prepared and distributed beforehand. We also discussed with them about the possibility of providing their facilities and services to other ASEAN countries under "ASEAN Energy Management System".

The results of discussion in Malaysia show the following.

Namely, Ptm has been providing various services using the outsourcing method, as the actual implementation organization for energy conservation under the government. CETREE was

being managed with a fund from Europe in the past, but is now working on education, training on energy conservation and renewable energy, carrying out their responsibilities under the Ministry of Education and USM. Especially, CETREE said that they would be able to offer integrated services which include energy audits, training, education, and information services, etc. Partly because they are situated on the university campus where all the facilities for lectures and accommodation are equipped with. It will probably be able to fully utilize these existing facilities. They are also fully equipped with measurement hardware, and seem to have sufficient capacity to actively work as trainers or as energy auditors.

Both Ptm and CETREE have expectations for the future of the ASEAN Energy Management System. Especially, CETREE showed a very keen and positive attitude towards their cooperation in the project.

II-2-3 The Philippines

Summary of Survey

(1) Outline of the activities

The result is that all the organizations that we visited, under different conditions for each organization, would be able to offer their services and facilities to other ASEAN countries as implementation organizations for the ASEAN Energy Management System. All of them were positive about their participation in the project, and have the capacity to implement the system, including English language ability. There was an organization which even showed their clear intention by asking for our suggestions on how they could participate in the project.

Mr. Zamora from ACE, as well as Mr. Domingo and Ms. Santiago from DOE (the Department of Energy) accompanied us on the visits to the organizations.

At each meeting with the organizations or the companies, we first explained the whole picture of the PROMEEC Projects and the role including the objectives and specifics of the PROMEEC (Energy Management) Project, as well as the purpose of the survey. We then verified the answers in the questionnaire which we had distributed beforehand, and discussed whether the organizations had the possibility of cooperating as one of the implementation organizations for the ASEAN Energy Management System. We also discussed the conditions for the cooperation.

In the Philippines, ENMAP (the Energy Management Association of the Philippines) prepared their answers to the questionnaire beforehand, but other organizations could not, and so we asked them to send their answers for confirmation to us as soon as possible.

(2) Survey schedule and main interviewees

Date	Organization visited	Main interviewees of the organization
September 11	Arrive at Manila	
September 12	Department of Energy(DOE) Energy Research Testing Labo.	Mr. Jesus C. Anunciacion Mr. Isagani C. Soriano (Supervising Science Research Specialist, Appliance Testing Section)
	ENMAP	Dr. Alice B. Herrera (President)
September 13	DOST, Philippine Council for Industry and Energy Research and Development (PICIERD)	Mr. Nonilo A. Pena (Senior Science Research Specialist, Energy Utility Systems & Technology Development Division)
	Institute of Integrated Electrical Engineers (IIEE)	Mr. Virgilio C. Flordeliza (National President)
September 14	Leave Manila	

3.1 Organizations visited for discussion and survey

3.1-1 Department of Energy (DOE)

[Interviewees]

Mr. Jesus C. Anunciacion (Chief, Energy Efficiency and Conservation (EE&C) Division)
Mr. Malon Romulo U. Domingo (Senior Science Research Specialist, EE&C Division)
Ms. Helen B. Arias (Chief, Consumer Welfare and Promotion office9
Ms. Jocelyn B. Santiago (Senior Science Research Specialist, EE&C Division)
Ms. Vilma R. Hernandez (Senior Science Research Specialist, EE&C Division)
Name unknown (We could not confirm the name.) (Director, Energy Research and Testing
Laboratory)

We also interviewed five other concerned staffs from the energy audit team, the training team
and the Energy Planning Division

(1) Outline of the organization

The department is in charge of political measures and legislation related to energy in the
Philippines. In relation to energy conservation, they are designated under the law as the
department which would develop and enforce the country's political measures and
legislation. Presently, the Energy Conservation Act drafted by DOE is still pending after
being delivered to the Congress for legislation.

Inside the department, they have a team which implements energy audits and training, a
testing laboratory for labeling, and a team which is in charge of campaigns, events and
education. The energy audit team is implementing audits of buildings and factories
using twenty-five engineers, and they have instrument for energy audit including a bus
for conducting energy audits. They have more than twenty years of experience in
implementing around forty energy audits per year, with a standard five day on-site
measuring investigation in each energy audit. Therefore, they said that each engineer
had more than ten years of experience in this area. These engineers majored in not only

science and technology but also economics and finance majors at universities.

They also conduct some twenty training courses per year by lecturers who are mostly the same people who implement the energy audits together with some other visiting lecturers. The main programs cover energy audits, energy management and energy conservation technology, as their key contents. As far as training facilities inside DOE, they have lecture rooms. The training for operating equipment is also partly possible, using boilers, lighting facilities and air-conditioning facilities etc. However, they do not possess accommodation facilities, so they rent hotels during the training.

On the other hand, the Energy Research and Testing Laboratory is implementing not only evaluation testing for labeling, but also conducting the calibration of instrumentation. (For details, please refer to section of 3.1-2 below.)

Besides, sixteen staffs are engaged in public relations and awareness activities such as education and events.

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

DOE said that they could provide the other ASEAN countries with energy audits and training services. We asked whether or not they might need complicated approval procedures, if DOE as a government department were to carry out cooperation with foreign countries, using their personnel and other resources. Their understanding was that they could implement such cooperation under the ASEAN energy cooperation scheme of AMEM (ASEAN Ministers on Energy Meeting). Therefore, they think that they could implement the project under the conditions that they could collect the fee of the energy audits and training from the clients, and improve their existing measurement hardware. We expect that they have a high possibility of becoming an implementation organization, because they are already actually implementing energy audits and training with experts who have long experience, and they have the full equipment required.

We also explained and exchanged ideas with the focal points and interested people on our proposal for the award system of best practices in energy management for major industries and buildings, as we did in the other countries.

Because of the limited time, we asked them to send us their comments and opinions on the details, at a later date.

(b) Situation of the existing resources/infrastructure

During the past twenty-five years, they have been implementing forty energy audits per year in industrial sectors such as cement, food products and steel, as well as in hospitals and office buildings. They have also been implementing twenty-four seminars and training sessions per year on average, including on individual energy conservation technologies such as energy management, advanced efficiency and technology, and boilers.

They possess all the facilities and instruments, but they hire commercial hotels for the accommodation of the trainees.

3.1-2 Energy Research and Testing Laboratory

[Interviewees]

Mr. Isagani C. Soriano (Supervising Science Research Specialist, Appliance Testing Section)
One other member

(1) Outline of the organization

To implement the labeling system in the Philippines, the laboratory functions as an organization which measures energy performance (efficiency) of products subject to labeling, such as refrigerators, air-conditioners and light fittings, and then they certify them. The laboratory is located in Quezon City far away from the DOE. They set up the criteria for the measurement and evaluation, certify the products in accordance with their criteria, and issue the labels. They set up the criteria based on the Philippine (industrial) standards and they apply international standards such as ISO (International Organization for Standardization) and NEMA (National Electrical Manufacturers Association) for the work which the Philippine standards are not sufficient. Actual certification is carried out when the laboratory receives appliances from the manufacturers or the importers. The testing devices are mainly handmade, but some of the equipment such as an illumination testing device was imported from Germany etc.

They also calibrate sensors. The calibration apparatus that we saw during our visit to the laboratory is for calibrating sensors measuring current, voltage and power, as well as thermometers and pressure gauges. They mainly use imported calibration apparatus, such as products from Yokogawa Electric Corporation of Japan, but they are also using some obsolete instruments.

(2) Results of the survey and discussion

We visited this organization based on a recommendation from the DOE. The labeling system is another cooperation area under ASEAN Energy Cooperation implemented by ASEAN, so it is not irrelevant for our project. However, should ASEAN utilize this organization under the ASEAN labeling, the future role of this laboratory will be decided according to the ASEAN policy.

In terms of the possible future role of this laboratory in the PROMEEC (Energy Management) project, we may look into the possibility that this organization functions as an organization which calibrates the instruments for energy audits though their facilities at the moment do not seem to be fully equipped.

3.1-3 Energy Management Association of the Philippines (ENMAP)

[Interviewees]

Dr. Alice B. Herrera (President)
Mr. Raymond A. Marquez (Director, Technical Services)

(1) Outline of the organization

This organization carries out energy audits and training for energy management under the Department of Science and Technology (DOST). The President of the organization is also a member of the Industrial Technology Development Institute (ITDI) of DOST.

In reality, the organization has only two permanent staffs including the President, and they assign actual implementation of energy audits and training to ESCOs utilizing their personnel and the facilities. Presently, fourteen members are engaged in energy audits, and around sixteen members are engaged in training-related work. Almost 30% of the members have more than ten years of experience. The training programs are consisted of energy management (there are two programs, namely “Basic” and “Advanced.”) and energy audit including a method of field training at buildings and factories. They conduct the training courses for around 150 trainees per year.

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

According to the President, ENMAP could participate in the project as one of the implementation organizations of the ASEAN Energy Management System. The president also showed a strong desire to provide their services to the other ASEAN countries. Although it is a NPO (non-profit organization), it is not a governmental organization, so that there is a possibility that the conditions could be tougher than governmental organizations. It would be necessary to collect the fee from the clients on a business basis. Because they are presently assigning the actual implementation of their jobs to ESCOs, they would need to reinforce their personnel and facilities to a certain level, if they expand their business in the future. However, they have experience and network functions accumulated through many years of implementation of energy audits and training courses, while cooperating with the government, ESCOs, consultants and persons from universities. Their experience and networking functions are noteworthy.

3.1-4 Philippine Council for Industry and Energy Research and Development (PICIARD)

[Interviewees]

Mr. Nonilo A. Pena (Senior Science Research Specialist, Energy Utility Systems & Technology Development Division)

Other five members from the energy audit team of Industrial Technology Development Institute (ITDI)

(1) Outline of the organization

The organization belongs to the Department of Science and Technology (DOST). DOST itself is a large organization with some 5,000 officials. Their core role includes scientific and technological development, standardization, transfer of technology, provision and

dissemination of technological information. They are organized by industrial sub-sectors such as food, metals and textile, energy, transport, construction and the environment. More specifically, they are a group composed of organizations called as Institutes. The sector that we visited this time was the Industrial Technology Development Institute (ITDI). Its main role is to promote energy conservation for small and medium-sized enterprises etc., and they have a team which implements energy audits and training. The same members are implementing both energy audits and training. Mainly, they have twenty-five members based in Manila who are engaged in energy audits and training, but they also have people in charge of the audits and training in regional areas (we did not get the number of staffs working for EE&C in the regional areas). As another function, they have a unit to implement engineering work and offer such services as technological development and consulting.

In terms of energy audits, they have a full set of measuring instruments, although some of them are somewhat old-fashioned or not sufficiently maintained. They implement energy audits as a paid service. They are also planning to introduce a bus for energy audits. In terms of cooperation with foreign countries, they have had experience of implementing energy audits and training in Sri Lanka in the past. Regarding the training, they have capacity for hosting up to around 100 trainees. They have large training rooms including lecture halls inside the DOST complex. The program mainly deals with energy audits mainly based on the field training at factories and buildings.

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

It is possible for them to implement energy audits and training as an implementation organization of the ASEAN Energy Management System, and they are eager to participate in the project. Regarding the conditions for participation, they would need approval from the Secretary (of DOST) in order to provide foreign countries with their services. Another condition is that the clients should pay the cost of the services.

DOST has sixteen regional offices (cf. DOE has two regional offices). They established the Industry – Energy Consortium with concerned organizations including universities, so that the network of regional offices can be fully utilized. Therefore, they can utilize regional universities and implementation organizations through this scheme. This is a strong and attractive point for them to utilize their resources and facilities for ASEAN.

(b) Situation of the existing resources/infrastructure

Because the institute is situated in a large-scale research and development center, they have many sizes of lecture rooms and all the measuring instruments needed. They seem to have many quality personnel as well.

3.1-5 Institute of Integrated Electrical Engineers (IIEE)

[Interviewees]

Mr. Virgilio C. Flordeliza (National President)
Mr. Raymond A. Marquez (National Vice President. He is also the Director of ENMAP.)
Ms. Mary Jane T. Ramos (Executive Director)
Mr. Arthur N. Escalante (National Auditor)

(1) Outline of the organization

Under the Philippines' law, electricians who are engaged in electrical enterprises have to belong to accredited professional organizations (APOs). IIEE is the only APO. This thirty years old organization is certified ISO9000:2000.

They have 31,000 members in branches called Chapters in regional areas. They have fourteen committees working on putting together information on electrical-related standards and various electrical technologies, as well as information on state-of-the-art technology, to distribute to the members (including through their website). They also implement training for the members. University students belonged to faculties of electrical engineering are also obligated to become members of this organization, and they receive practical training here.

In recent years, promotion of energy conservation has become an important theme in the areas that they are working on, and so they are cooperating on this issue with the DOE etc.

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

The team visited IIEE, because ENMAP visited on September 12th introduced the team to this organization. The reason that we were introduced to them was that they were well equipped with lecture rooms etc. for training.

Although we were only planning to look at the facilities, they also showed strong interest in our project. The President of IIEE understood the concept and goals of the ASEAN Energy Management System, and showed his strong desire to participate in the scheme as one of the implementation organizations offering training and information services. They emphasized that their activities on energy conservation were increasing and they are accumulating experience in this area, although their main activities are focused on the area of electricity.

Similarly to PICIERD of ITDI, it is valuable that they have a strong network of electricians in the country. This network could be a very good access route to individuals and companies. The President was probably considering the provision of training services when he expressed his intention to participate in the project, and we are also hoping for such a contribution from them. However, after learning about their organization, we had the idea that they could participate with a team of electrical experts and advisors.

They were also very interested in the activities of ECCJ, and asked us to participate

in their seminar or forum and make a presentation about energy conservation. We asked them to go through the procedure and send us a more concrete request to METI through the Philippine government (DOE or DOST).

(b) Situation of existing resources/infrastructure

Their facilities are small but they have a four-story building where are a library and lecture rooms. They also have a practical training room, where trainees can practice controlling the operation of a motor using a control panel for training. In this way, they can practice electrical control using sequencers etc. They explained that the training facilities were donated by Rockwell Allen-Bradley of the United States.

3.2 Results of the discussion and survey

The ECCJ-ASEAN team visited the existing implementation organizations in each country and investigated the facilities and the services owned by them, based on the questionnaire prepared and distributed beforehand. We also discussed with them about the possibility of providing their facilities and services to other ASEAN countries under “ASEAN Energy Management System”.

The results of discussions in the Philippines show as follows.

DOE and the Philippine Council for Industry and Energy Research and Development (PICIARD) are government agencies, which have been working on various services on energy conservation. They have accumulated abundant experience. PICIARD and DOE said that they could provide integrated services such as energy audits, training and education. PICIARD, partly because it is located in the complex of the integrated development institute, is fully equipped with facilities for lectures and training. It is likely that they can fully utilize these existing facilities. They also have full sets of measuring instruments, and they seem to have the capacity to provide trainers and energy auditors. On the other hand, ENMAP and IIEE, which are private organizations, are working on energy conservation even more enthusiastically than the government organizations. They strongly agreed with, support our plan and promised their future cooperation. Each implementation organization we visited has differences in the degree of its present capacity in terms of personnel, facilities and equipment. However, all four organizations have great expectations for the ASEAN Energy Management System which we proposed, and they have expressed strong interest in their participation in the system.

II-2-4 Vietnam

Summary of Survey

(1) Outline of the activities

In Vietnam, the ECCJ-ASEAN team visited the Ministry of Industry (hereinafter called MOI) and the Institute of Energy (hereinafter called IE) on October 20th. Then, we moved to Ho Chi Minh City and visited the Energy Conservation Center of Ho Chi Minh City (hereinafter called ECC-HCMC) and the ENERTEAM Energy Conservation Research and Development Center (hereinafter called ENERTEAM) on October 21st. For ENERTEAM, the focal point recommended us to visit and make discussion with them. Therefore, an arrangement was made at short notice after we entered the country.

At MOI, the team explained and consulted with the focal points, on the proposal for the implementation plan for the award system of best practices in energy management, which ECCJ had prepared. The team also visited to the above three implementation organizations for survey and discussion on the possibility of providing the other ASEAN countries with their existing functions and services under the “ASEAN Energy Management System” to be shared among the ASEAN countries in the future. The team also discussed the conditions for their cooperation, as well as ideas for operational methods.

Regarding the questionnaire sent to them beforehand for survey and discussion, ECCJ received the answers before the ECCJ team left Japan except from ENERTEAM because they were added onto the list of visits at short notice in Vietnam. Although we only had a short period of time for the visit to Vietnam and there were long distances between the organizations that we visited, we were able to complete the activities in Vietnam without any trouble, thanks to the good arrangement, preparation and smooth hosting by these organizations through the focal point.

In general, there are some aspects of the present capacity of the organizations that are not yet sufficient. However, they have a high level of motivation to learn from more advanced parties and to make self-help efforts to master what they learn. They also have strong enthusiasm for the future development of their own organizations. We felt that there were many individual people of high ability. Especially, ECC-HCMC has an interesting project management policy and an interesting perspective about the future. They also have recent experience and existing personnel. All these are good resources for their future operation. Therefore, ECC-HCMC is a very attractive and capable organization, in terms of being a potential implementation organization under the ASEAN Energy Management System. (For the actual cooperation, it will be necessary to discuss further some of the conditions.)

As a whole, those organizations were very positive about their participation and cooperation in the ASEAN Energy Management System. Among these organizations, there was strong enthusiasm to dramatically improve the infrastructure of energy management system in the country, by actively participating in the ASEAN activities as well.

(2) Survey schedule and main interviewees

Date	Organization visited	Main interviewees of the organization
October 19	Arrive at Hanoi	
October 20	Ministry of industry (MOI)	Mr. Le Tuan Phong (Official on Energy and Environment, Technology and Product Quality Management Department)
	Institute of Energy (IE)	Mr. Tran Minh Khoa (Deputy Head of Energy Economics, Demand Forecast and Management Dept.)
	Moved to Ho Chi Minh City	
October 21	Energy Conservation Center in Ho Chi Minh City(ECC-HCMC) EnerTeam	Mr. Huynh Kim Tuoc (Director) Mr. Nguyen Tran The (Director)
October 22	Holiday Leave Ho Chi Minh City	

4.1 Organizations visited for discussion and survey

4.1-1 MOI

[Interviewees]

Mr. Le Tuan Phong (Official on Energy and Environment, Technology and Product Quality Management Department)

Mr. Ngo Huy Toan (Energy expert, Department of International Cooperation)

Mr. Tran Viet Hoa (Hydropower Engineer, Department of Science and Technology)

(1) Outline of the organization

Since the Decree on Energy Conservation (hereinafter referred to as “EC Decree”) entered into force on September 13th 2003, MOI has issued the first circular (guidelines) mainly on designated energy management factories and energy managers in July 2004 and has been preparing for an additional circulars on the coordination with other ministries and agencies, supporting systems, implementation organizations and labeling etc. At the same time, almost all the staffs of MOI are holding seminars on the methodology of enforcement in various regions in the country, including lectures on the contents of the EC Decree and the circular. With this background, MOI currently suffers from a lack of staff who can draw up the circulars and hold seminars. They are hoping that they can receive support from Japan and other countries in this respect. For example, although they have thirty industrial sectors, they have only five staff to do the work, in comparison with Thailand which has fifty staff for the equivalent work. They would also like to learn about the systems of Japan and Thailand in the future, especially on enforcement of the law and the designing of implementation organizations equivalent to ECCJ. MOI is considering would like to forward a request for support to Japan as well, which would include support for the above activities.

The main work related to the EC Decree is standardization, including setting up the judgment criteria and labeling. Under the Vietnam Energy Conservation Program

(VECP), energy conservation for approximately 120,000 small and medium-sized enterprises is also being promoted in cooperation with MOI.

While many ministries and agencies are involved in this program, the coordination between the ministries is not functioning well. Small and medium-sized enterprises are supervised by local governments at the prefecture level, and there is a plan presently being advanced to establish ten ECCs (energy conservation centers) in different regions of the country for the purpose of implementation of training and energy audits. The fund for EE&C (energy efficiency and conservation) activities is absolutely lacking, which is a common problem throughout ASEAN countries. MOI said that they would like to proceed with the activities, looking to Thailand in the future.

Awareness of the public on the importance of energy conservation is weak in general, which is observed among the top managements of companies and SMEs (small and medium-sized enterprises). This is because of cheap energy prices due to government subsidies, which is a barrier for promoting EE&C activities. On the other hand, there are no government subsidies for purchasing energy-efficient equipment, and this is why the purchase of this equipment has not been promoted.

(2) Results of the survey and discussion

The team explained the purpose of the discussion and survey in Vietnam at this time, and confirmed the schedule. Then, the team explained, discussed and exchanged ideas on our proposal for the implementation plan of the award system of best practices in ASEAN energy management. There was a proposal from MOI to set up two runner-ups in addition to one winner in each sector for industries and buildings, which makes six awards all together. The discussion was made together with this proposal from Vietnam. We also exchanged ideas on the evaluation criteria. We confirmed that they would continue to contact us by e-mail if they had any more opinions, suggestions or requests.

MOI had a lot of opinions on the proposed system. As the ministry responsible for enforcement of the EC Decree, MOI has had to establish and operate the guideline and institution for energy management including their energy manager system as early as possible since the EC Decree entered into force in September 2003. This situation may be a background of their various opinions.

According to the focal points, MOI has already put forward a proposal to set up implementation organizations to certify the qualifications of energy managers etc. However, they have not been able to gain approval from the Ministry of Finance and the Prime Minister because of financial problems etc. At the same time, they see the actual progress in PROMEEC (Energy Management) Project and AEMAS seemed to be developing faster in ASEAN. They would consider a more realistic way of establishing implementation organizations while keeping an eye on these developments.

4.1-2 Institute of Energy (“IE”)

[Interviewees]

Mr. Tran Minh Khoa (Deputy Head of Energy Economics, Demand Forecast and Management Dept.) and another two members

(1) Outline of the organization

This government organization was established by MOI as a research and planning institute for energy in 1989. Their role is essentially to advise the government on national strategy and political measures on energy and electric power development and to draw up a master plan for electric power development. They also carry out feasibility studies on projects for power generation and transmission and work on technological development in the energy sector including renewable / alternative energy development and energy conservation. They are also in charge of international cooperation in the energy sector including electric power. The 175 staffs are implementing a wide-range of activities in the energy sector. Among staffs, eight staffs are working on energy audits and training. These specific activities related to energy conservation have been implemented as a part of the DSM programs which are led by MOI using GEF (Global Environment Facility) fund. Their technology has partly been built up through the international cooperation projects.

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

IE wants to contribute to the ASEAN Energy Management System through providing energy audit (especially in the industry sector) and training services. According to them, although they are a government organization, they are an independent institute hence they are able to participate in this ASEAN project by their own management decision.

Behind their enthusiasm, there seems their expectation that IE could improve their own capacity through the international cooperation because of their past experiences.

(b) Situation of the existing resources/infrastructure

In terms of facilities, they only own instruments for energy audits and a training room possible to accommodate around fifteen people. They would need to improve these facilities and personnel if they are to actually participate in the project. The existing textbooks written in Vietnamese will also have to be translated into English etc. However, they are very enthusiastic to cooperate in the project. In terms of their capacity, they have built a model plant of a large-scale hydroelectric power station inside their facility, and are testing its various technical aspects. They have also constructed an experimental facility for biomass energy development. Therefore, they have potential human resources and capacity in facility to expand their operation under the conditions that the management policy and financial resources are in place.

4.1-3 Energy Conservation Center of Ho Chi Minh City (“ECC-HCMC”)

[Interviewees]

Mr. Huynh Kim Tuoc (Director)
Ms. Nguyen Thi Ngoc Tho (Manager (Training), Technical - R&D Division)
Mr. Truong Quang Vu (Information - Marketing Division)
Three other members

(1) Outline of the organization

The organization was established in 2002 by the People's Committee of Ho Chi Minh City and is presently managed under the supervision of the Department of Science and Technology (DOST) of Ho Chi Minh City. Their business covers a wide-range of activities on energy including not only energy conservation but also renewable energy. Therefore, they are conducting energy audits and training, providing information services and working on ESCO-like projects including a consulting service for building design, engineering services and equipment supply on a project basis, and so on. They also implement projects related to cleaner production, as well as CDM (clean development mechanism) projects in which Japanese companies (such as Tohoku Electric Power Co., Inc) are the partners. The area of their activities is not limited only to inside Ho Chi Minh City, in fact expanding to the neighboring districts as well.

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

They also expressed a strong desire and enthusiasm to contribute to the ASEAN Energy Management System through providing their services for energy audits (especially in the industry sector), training and information provision. Since they are practically implementing their activities independently, they could implement projects under their management without any approval from the government. They also have highly flexible ideas on projects, and it is noteworthy that they are considering spinning off the ESCO business in the future, for example. In addition, they uniquely established a database for the industrial sector, based on the results of the energy audits that they implemented for more than 180 companies from various areas. They have accumulated more than 30,000 pieces of data on the energy consumption and production of companies. They are also producing and working to distribute some material like a technical directory for the dissemination of technology. These achievements are very attractive from a technical point of view. At first, the team explained what PROMEEC has implemented and achieved in the past and the expected future development. They commented that these activities were exactly the same as what ECC-HCMC is implementing. On the operational aspects, their clients bear half of the cost (and the other half is covered by government subsidy) for energy audits. For training, they pay US\$ 1,000 for the outside lecturer for the two days of program on a commercial basis. In this way, they are developing their business while expanding the number of staffs and facilities. Therefore, they are well managing the ECC-HCMC meeting the needs for their projects and marketing requirements. They seem to have good management know-how and showed a very strong interest in participating in the ASEAN Energy Management System from a business point of view, which was very impressive.

(b) Situation of the existing resources/infrastructure

The total number of staff is 244, of which thirty are engineers. Twenty of those engineers work on energy audits and training. Besides, there were twenty more external personnel including lecturers cooperating for the training.

ECC-HCMC seems to have built their capacity within a short period. In terms of their achievements, they implement almost 100 energy audits per year mainly in the industrial sector and also conducted forty to forty-five training courses per year (one course normally lasts for two days). It is remarkable that they have completed the training for 500 trainees. As of the visiting date, they have already implemented training for 400 trainees in 2005. In terms of facilities, ECC-HCMC equip with instruments and equipment for energy audits including a bus for the audits. For the training, they are applying a rational method. Namely, they conduct the training at the clients' factories etc. using the clients' meeting facilities. Therefore, in ECC-HCMC, there are only have two training rooms which accommodate fifteen people each and one training room for fifty people.

4.1-4 ENERTEAM Energy Conservation Research and Development Center (“ENERTEAM”)

[Interviewees]

Mr. Nguyen Tran The (Director)
Mr. Nguyen Quoc Bao (Vice Director)
Mr. Hoang Viet (Vice Director)
Mr. Huynh Van Nam

(1) Outline of the organization

The organization was established in 1995 with the assistance of the French TRANS ENERGI, and was certified as an NGO/NPO (non-governmental organization/non-profit organization) on energy in 2000. According to them, they are an ESCO. It is a small company with twelve staff, ten of which are engineers who are engaged in energy audits, training, engineering and consulting services for the projects. They also have around twenty external supporters/collaborators. As for the facilities, they just have an office and some sets of energy audit instruments. This company is also implementing a wide range of projects not only on the energy area such as energy conservation and renewable energy but also on the environmental protection including cleaner production, though they have only a small number of staffs. They are operating projects which are related to cooperation with EU especially from France such as COGEN. In relation to energy conservation, they are implementing projects which are in line with the DSM program mainly led by MOI. Their training programs consist of mainly lectures with only five courses being held per year.

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

For the ASEAN Energy Management System, they would have the capacity to participate in the service of energy audits and training and would strongly like to participate in the system.

Because this is a private organization, they would need to collect fees from the clients while they do not need to go through complicated procedures to participate in the project.

(b) Situation of the existing resources/infrastructure

It is our observation that they would need to improve the present personnel power and facilities before they participate in the ASEAN Energy Management System. However, financial arrangement for the initial investment might be difficult for them because the organization is an independent and small private company.

4.2 Results of the discussion and survey

The ECCJ-ASEAN team visited the existing implementation organizations in each country and investigated the facilities and the services owned by them, based on the questionnaire prepared and distributed beforehand. We also discussed with them about the possibility of providing their facilities and services to other ASEAN countries under “ASEAN Energy Management System”.

The results of discussion in Vietnam are as follows.

All the three implementation organizations visited in Vietnam understood the ASEAN Energy Management System and actively offered us their cooperation. Especially, ECC-HCMC had made many self-help efforts and has great potentiality for future development, though it was established only recently. Moreover, there were many personnel who had great individual abilities. They have been working for various services in energy conservation and accumulated abundant achievements. They could provide integrated services such as energy audits, training and education. They have full sets of measuring instruments and seem to have the capacity to be good trainers or energy auditors. ECC-HCMC is an attractive organization in terms of their project management policy, recent achievements and the existing management resources.

It is true that those implementation organizations have differences in the present capacities of personnel or facilities and equipment. However, all the organizations have great expectations for the ASEAN Energy Management System which we proposed and expressed strong interest in their participation in the activities under the ASEAN Energy Management System.

II-2-5 Thailand

Summary of Survey

(1) Outline of the activities

Although October 24th was a compensatory holiday for Chulalongkorn Day in Thailand, the ECCJ-ASEAN team reviewed and discussed the activities actually implemented and the plan of activities afterward for the PROMEEC projects, together with ED (the Executive Director) and the Project Coordinator of ACE.

In the morning on 25th, the team visited DEDE (the Department of Alternative Energy Development and Efficiency) and made explanation and discussion on the actual results and the present situations of the PROMEEC projects. Moreover the team explained and discussed with the focal points about the proposal for the implementation plan of the award system of best practices in energy management which ECCJ had prepared beforehand.

In the afternoon, the team visited the Training Division of DEDE and its mini plant with ED of ACE. We discussed the possibility they could provide the ASEAN Energy Management System with the services and functions presently owned by them. Then, we had a tour to look at the mini plant. (Mr. Yoshida left for Manila to attend intergovernmental policy dialogue by the afternoon flight.)

On 26th, the team invited four consultant firms to DEDE and discussed with them together with the focal points of Thailand, as to whether they could offer their facilities and services for the ASEAN Energy Management System.

Although Thailand is the leading country in ASEAN in terms of energy management, the consultant firms explained us their experiences in difficulties, problems and barriers when offering consulting services in Thailand.

Although it was a short visit, we were able to complete the survey without any trouble, thanks to the smooth hosting and careful preparation by the focal point and the concerned parties.

(2) Survey schedule and main interviewees

Date	Organization visited	Main interviewees of the organization
October 23	Arrive at Bangkok	
October 24	Internal Meeting	Dr. Weerawat and others
October 25	DEDE Training Division (DEDE)	Dr. Prasert Mr. Manaswee and others
October 26	Joint Meeting (DEDE)	Mr. Francis R. H. Chin and others
October 27	Continue staying (Another Project)	

5.1 Organizations visited for discussion and survey

5.1-1 Consultation with DEDE

[Interviewees]

Dr. Prasert Sinsukaprasert (DEDE)

Mr. Komol Buaket (DEDE)

Mr. Sarat (DEDE)

(1) Results of the survey and discussion

First, the team explained the purpose of the discussion and the survey in Thailand and confirmed the schedule. The team then explained, discussed and exchanged ideas on the proposed implementation plan for the ASEAN Award System of Best Practices in Energy Management. Regarding the evaluation criteria, the focal point of DEDE suggested that not only the achieved energy performance, but also the process of improvement activities and the methods of data collection (i.e. monitoring) etc. for achieving energy conservation should be included in the criteria. They also suggested that not only academics but also experienced practical people from business areas should be added to the member of the judging committee. They also made some suggestions about the frequency of the committee meetings. The team proposed to further discuss these issues in the Post Workshop, contacting each other by e-mail if they had any further more opinions, suggestions or requests.

5.1-2 Training Division of DEDE

[Interviewees]

Mr. Manaswee Hakeme (Training Division, DEDE) and another four members of Training Division

Mr. Komol Buaket (DEDE)

Mr. Salat (DEDE)

(1) Outline of the organization

The Training Division was established in 1992 under the present DEDE and is engaged in training for PRE (Person Responsible for Energy) using the mini plant. They have many training courses varying from courses on fundamentals of energy conservation to courses on instruments and equipment for energy conservation. Although they are solely a governmental organization, they could offer trainers to the ASEAN project in the future under the conditions that they should consult with the DEDE of the superior organization. In terms of facilities, they own the mini plant equipped with training rooms and full sets of simulation equipment and instruments for energy audit. Probably, the mini plant is the most equipped facilities in the ASEAN countries. However, their existing textbooks are written in Thai and should be translated into English. In this case, the permission DEDE will be required to use the copyright of these textbooks. As they have recently conducted training courses for the neighboring countries with use of their facilities for training, they could utilize their facilities for the ASEAN training as long as the cost of hosting the trainees is provided. The conditions should be consulted further with the DEDE. The Training Division employs forty staffs, among which twenty could implement training and energy audits. In addition, they assign consultant firms for conducting the normal training courses. In this case, the Training Division functions as a

coordinator. They recently set up simulators for training of energy conservation in hospitals, hotels, textile factories, food factories, etc., in addition to the training by utilizing the mini plant.

(2) Results of the survey and discussion

(a) Possible contributions of the organization to the ASEAN Energy Management System

According to the Training Division, they have the capacity to participate in the program of the ASEAN Energy Management System through providing energy audit and training services. They actually have a strong desire to participate in it. The organization is a 100% governmental organization and they need approval from DEDE of the superior organization for them to participate in ASEAN projects.

(b) Situation of the existing resources/infrastructure

They have the most equipped facilities of all the ASEAN countries, including training facilities such as a mini plant and measuring instruments. The personnel have a lot of experience in training though they do not seem to have much experience in energy audits.

5.1-3 Joint meeting with consultant firms

[Interviewees]

Dr. Prasert Sinsukaprasert (DEDE)

Mr. Komol Buaket (DEDE)

Interviewees from consultant firms

Mr. Francis K. H.Chen (Managing Director, EEC ENERGETICS)

Mr. Pieree Cazelles (Project Manager, EEC ENERGETICS)

Mr. Nutdhapun Ngernbunmroog (Manager/Energy Dept. EEC-CM, -EEC Group)

Dr. Somchai Dechapanichkul (Managing Director, UEE Technology Ltd.)

Mr. Chartdanai Chartpolrak (Executive Managing Director, Able Consultant Co. Ltd)

Mr. Chirasak Boonrowd (Deputy Executive Director, ECCT)

(1) Results of the discussion

Firstly, the team explained the background of the PROMEEC project as well as the purpose of the present survey. Then, the attendees at the meeting stated various opinions and comments. As a whole, their attitude toward cooperation with the ASEAN Energy Management System was very positive, regardless of their very official statements in front of other rival companies in the same business field. Anyway, they showed a strong desire and enthusiasm to contribute to the ASEAN Energy Management System through providing energy audits, training and information services. On the practical side, they are private companies and able to operate projects without any approval from the government because they independently operate their businesses. They also have a lot of flexibility in their ideas about the operation.

EEC ENERGETICS and UEE Technology are working in different fields in ASEAN,

and they pointed out the following common problems observed in ASEAN.

- There is a big gap between ASEAN countries in the understanding of or activities for energy management and it is important to fill these gaps. More systems for closing the information gap should be put in place. EEC ENERGETICS also pointed out that, in the AEMAS project as well, there were differences in the degree of commitment between the participating countries and they have experienced various problems with the project.
- Generally, management groups in ASEAN countries are short-sighted and the energy management and safety for a long-term are not prioritized. They would rather put their efforts into increasing production. In many cases, the training is of an ad hoc nature and nothing follows on from it.
- It is said that Thailand is advanced in terms of energy conservation and energy management. However, it is only the cases of some large-scale companies and foreign-affiliated companies and is not the cases of SMEs.
- There was a case that Thai consultants were excluded in Singapore. Other consultants did not seem to have any problems. (We could have asked about this matter in more detail if we had an individual meeting.)
- 80% of the needs for energy conservation could be covered if “e-training” etc. is available and local consultants are employed.
- The Energy Management Standard under development with cooperation by UEE Technology would be established in the regulation as the national standard within two or three months.

Partly because they have a wide range of management know-how about business in ASEAN countries, they expect that their participation in the ASEAN Energy Management System will create a business opportunity. Accordingly, they probably expressed very strong enthusiasm for participation from a business point of view. We confirmed that we would carry on contacting each other via e-mail about matters which we could not ask about at the time, because it was not an opportunity to individually discuss.

5.2 Results of the discussion and survey

The ECCJ-ASEAN team visited the existing implementation organizations in each country and investigated the facilities and the services owned by them, based on the questionnaire prepared and distributed beforehand. We also discussed with them about the possibility of providing their facilities and services to other ASEAN countries under “ASEAN Energy Management System”.

The results of discussion made in Thailand are as follows.

DEDE is a governmental organization and is fully equipped with everything for energy conservation activities such as the mini plant with training rooms, measuring instruments and so on. Their facilities are overwhelmingly superior to all the other organizations. Although their facilities might be perfect for conducting training courses, they might have problems

with the number and quality of staffs for energy audits in field by visiting industrial sites. Because the meeting with consultants was a joint meeting, we have not visited each consultant firm to find out about their facilities and personnel. These consultant firms are involved in energy conservation services not only in Thailand but also in ASEAN countries as part of their business. Therefore, they expressed high expectations for the ASEAN Energy Management System to work in the future.

Further clarification for each company will be needed. Namely, it is necessary to clarify what are the specific services possible to provide for ASEAN clients, for example, availability of energy audits for both or either of factories and / or buildings. If they can energy audit for factories, then we need to know what kind of industries they can implement the energy audits . In case of training, they need to specify the available programs such as general course on energy management, or technical courses including energy audits with clarification of specific theories and technologies possible to teach, etc.

They also offered the conditions for providing their services and facilities. A condition required by all is the finance. They would charge fees for their services. Furthermore, some implementation organizations clarified other conditions to improve the existing personnel and facilities, or to get approval from their superior organization such as the case of the Training Division of DEDE.

The current capacities of these implementation organizations vary in terms of the existing personnel, facilities and equipment. However, in actual, all the organizations have great expectations for the ASEAN Energy Management System proposed and they expressed strong interests in their participation in the activities under the ASEAN Energy Management System.

II-3 Results of the Discussion and Study on the Proposal for How to Utilize the Existing Implementation Organizations in ASEAN Countries

II-3-1 Functions to Be Required for the ASEAN Energy Management System and Scope of Services and Facilities for the Existing Implementation Organization to Be Able to Provide

In the fiscal year of 2004, the basic concept of the “ASEAN Energy Management System” was discussed and agreed by concerned persons in all the ASEAN countries. Based on the agreed concept, in this fiscal year, the required functions for the “ASEAN Energy Management System” was discussed in the “Research Study in Japan” described in Chapter IV. Based on the results of these discussions, it was concluded that the ASEAN Energy Management System will be required to equip with the following basic functions.

- 1) Provision of information
- 2) Implementation of energy audits, training and education
- 3) Function to properly work and operate the above-mentioned services

In accordance with this conclusion, and based on the results of the investigations made in the fiscal year of 2004 on the existing implementation organizations in ASEAN countries, the team visited the existing implementation organizations and carried out surveys and discussions explained in Article II – 2. The following are the points that the team verified and discussed.

- ◆ General information on the outlines and business scopes of the implementation organizations
- ◆ Verification of possibility / intension including conditions for the implementation organizations to provide the ASEAN countries with their services or facilities
- ◆ Assessment of the present capabilities of person power, equipment and facilities for energy audit, training and education

We carried out survey through interviewing persons from the existing implementation organizations in the above-mentioned five countries and through sending out a questionnaire to get information from the existing implementation organizations in Singapore. As a result of the surveys, all twenty organizations where the team conducted surveys expressed their intention to provide the ASEAN countries with the services and facilities that they presently own and provide. Table II-3-1 shows the service areas for these implementation organizations to be able to and/or to intend to provide.

Table II-3-1: Service Areas Possible to Provide and Number of Implementing Organizations

Energy Audits	Training and Education	Other Services (Information Service etc.)	Number of Implementing Organizations
YES		YES	2
YES	YES	YES	12
YES	YES		2
	YES		4
Total			20

Twelve implementation organizations, which is equivalent to 60% of the total surveyed, could provide integrated services including energy audits, training and education and other services

such as information services. Therefore, the fact shows a larger possibility that the ASEAN countries could utilize those existing organizations. However, there is a big variance between these implementation organizations in the present capacities of personnel, facilities and equipment. Accordingly, in reality, a smaller number of organizations would be able to meet various requirements from clients based on the assessment on the specific scopes of services that they can provide. Namely, the following should be required to clarify.

- 1) Available scope of field for energy audit such as industry including specific industrial sub-sectors or building or both
- 2) Available programs of training such as a general program on energy management and a technical program on EC technology / its theory including practice of energy audit

When all these points are considered, the actual combination of the scope of services possible for them to provide will be more.

The implementation organizations, moreover, proposed the conditions for providing their services and facilities. The most-frequently requested conditions were those from a financial point of view. All the organizations that the survey team visited would like customers to charge fees for their services. Also, in order to provide customers in the outside the country with their services, some implementation organizations clarified other conditions as follows.

- Improvement of the existing personnel and facilities
- Approval or agreement from their superior organizations

However, these are the expected conditions from a management point of view. Therefore, these should not be difficult issues to realize, though better ways to meet these conditions should be studied.

II-3-2 Proposal for Utilizing the Existing Implementation Organizations in the ASEAN Energy Management System

As the next step, it will be required to establish a specific procedure so as to utilize the services that the existing implementation organizations can offer, based on the actual survey and discussion made in the fiscal year of 2005. Although this is the key task targeted to complete in 2006 and 2007, one draft proposal of the basic plan was discussed in the Summary and Post Workshops with the participating focal points of the ASEAN countries in the fiscal year of 2005. Namely, the point of the proposal is to set up a system or a function so that the clients wishing to purchase some services / facilities can find the existing organizations possible to meet the requirements of such clients. One of the proposed ideas was the open tender system. In this system, the implementation organizations clarify and publish the specific services including conditions that they can and want to provide. On the other hand, the clients also specify the services including conditions wished to purchase and inquire these implementation organizations to provide the services. The proposal also includes the idea that the ASEAN Energy Management System would offer a platform for this tender system to connect a client with service providers or registered implementing organizations.

More specifically, the tendering (or meeting) site is set up on a website. The information about the existing implementation organizations and their services possible to provide would be made available on the website. The clients looking at the site would prepare their specifications and the purchase conditions of the required services and directly contact and negotiate with the possible implementation organizations. Or, the clients would upload their specifications on the website and the implementation organizations looking at the site would

contact the potential clients to negotiate individually.

The survey was conducted on only twenty existing implementation organizations this time. However, it will be important to add a function that the other implementation organizations could register and upload the information of such organizations so that they could also participate in the system.

While the proposed idea was discussed in the Summary and Post Workshops with the focal points of the ASEAN countries in the fiscal year of 2005, they did not seem to fully understand the proposal. Therefore, in the fiscal year of 2006, it will be necessary to develop and discuss a more specific proposal based on the above-mentioned proposal.

III Introduction of the Award System of Best Practices in Energy Management for Major Industries and Buildings

III-1 Summary

Aiming at widely collecting the best practices in energy management from the industry and building sectors in the ASEAN countries and sharing the information among ASEAN countries, this system was proposed in the fiscal year of 2004 and agreed in the Post Workshop. Regarding the other award systems in ASEAN countries, the award system for energy efficient best practice buildings has been successfully implemented since 2000. However, the reality in many cases is that the awards have been given to buildings which were newly constructed with state-of-the-art designs and equipment, or to revamped buildings which introduced energy efficient equipment. Those buildings are segregated in some specific countries like Singapore, Thailand or Malaysia, where the economy has more developed and large-scale investment is possible. Moreover, concerning the evaluation criteria, the ratio of marks allocated to energy management is small.

In addition, there is a plan to introduce the similar kind of award system for the industrial sector in ASEAN. However, the actual realization seems to require a long time.

On the other hand, it has been five years since the transfer of technology started through the PROMEEC projects for major industries and buildings in which activities such as training through OJT basis of energy audits has been carried out.

In this activity, the Japanese experts tried to make recommendation on improvement in energy management such as operation and maintenance improvement with no or little cost because such kind of improvement can be easily realized. As a result, they could enjoy a relatively large benefit. Based on the actual experience, they have learned that the improvement in energy management is very effective for energy conservation and it is essential to enhance their capability in order to introduce a high-level of technology and achieve its maximized performance.

Also through the actual activity, it is observed that some factories and buildings in the fairly developed ASEAN countries own good energy management in place applying some advanced hardware, which we could have expected. However, at the same time, we also found some examples in the less developed countries, where energy management was well in place and the people involved have made innovative improvements in some factories and buildings.

As a result of these activities, we recognized as follows. Namely, it would be very important and effective to establish the system for energy management for factories and buildings for promoting energy conservation based on the day-to-day improvements and it would be very valuable to share and publicize the information about successful cases of energy management which were actually implemented in the ASEAN countries. Therefore, this award system was proposed and agreed, as a realistic method of collecting best practices in energy management for major industries and buildings. The award system was named as the “ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings.”

In fiscal year 2005, the basic plan for the award system in energy management was proposed by ECCJ, was discussed with the focal points of the five countries that were visited for the survey on the existing implementation organizations, and was amended reflecting the outcomes of these discussions. The amended basic plan was sent to all the focal points of the ten ASEAN countries for reviewing beforehand and was discussed and agreed in the Summary and Post Workshops held in January 2006. Finally, we were able to start selecting

the members of the judging committee from February 2006 and it can be expected to launch the full-swing operation of the system from May 2006, as targeted.

III-2 Basic Plan for the Award System Proposed by the Japanese Side and Results of Discussion with the Focal Points

III-2-1 Outline of the Plan Proposed by the Japanese Side and Discussion with the Focal Points

ECCJ proposed the basic plan of the award system for energy management including the future operation plan of the system. The proposed plan is based on the award system of best practices in energy conservation realized in Japan

The proposed basic plan consists of the following. Verification and discussions with the focal points were carried out on these points.

1. Purpose
2. Targets
3. Outline of the award system and important evaluation items
4. Implemented activities and yearly time schedule (including the preparation for implementation)
5. Members of the judging committee
6. Plan of related activities
 - Preparation for the application form
 - Conditions for application
 - Major evaluation items in the industry and building sectors

This award system has the following features.

- ◆ The applicants are invited from the both industry and building sectors. And the applied cases shall be of cases succeeded in improvement with no / low cost in energy management.
- ◆ Regarding the members of the judging committee, the persons with abundant experience in the industrial sector should be prioritized and the focal points are advised to nominate applicants who actually practiced energy management in factories or buildings. One member of the judging committee will be selected from each country.
- ◆ One winner and one runner-up for each sector (major industries or buildings) will be chosen hence four cases will be awarded for the industry and building sectors. Each country can apply two cases for the award system and these awardees will be selected among a maximum of twenty cases of which information including that of awardees will be publicized every year.

III-2-2 Results of the Discussion during the Visits to ASEAN Countries and the Amended Plan

In the discussions made with the focal points in each country, the focal points provided many comments on the evaluation criteria, the selection of members of the judging committee and so on. However, these comments were not critical to dramatically change the proposed plan and minor changes in some parts were made in amended plan. The amended plan was

circulated to the focal points for their final reviews and comments. Appendix III-2-2-1 shows the amended basic plan finalized.

III-3 Results of Discussion on the Proposed Basic Plan of the Award System and the Policy of Implementation in the Future

III-3-1 Final Basic Plan and the Policy of Implementation

The finalized basic plan was explained, confirmed and finally agreed by the focal points of the ASEAN countries in the Summary and Post Workshops on January 27th,2006. The finalized basic plan is shown in Appendix III-2-2-1.

After the basic plan was agreed, ECCJ immediately commenced the selection process for the judging committee members targeting to call the first application in May 2006. In the Summary and Post Workshops, accordingly, the focal points of the ASEAN countries were requested to immediately start selecting their nominees. Also, ECCJ prepared the preliminary criteria to qualify the nominees for the judging committee members and the application form to submit the application of nominees. In practice, since it was predicted that it would take a long time to complete all the nominations, it was decided to start the selection once among the nominees applied by some countries at certain timing.

The first work to be done is to prepare the application form for the award system, which should be completed by April 2006. Therefore, the first screening of the nominees of the judging committee was made at the end of February 2006.

After then, the first “Research Forum in Japan” was held to develop the application form by inviting the selected committee members.

After the above work is completed, all the committee members shall be selected and they will complete the developed application form for the award system so that the judging committee can start inviting the first applications in May 2006.

In March 2007, the judging committee will decide which factories and buildings will receive awards and information on all the cases submitted for the ASEAN award system will be publicized in May 2007. The same activities will be repeated every year, thereafter.

III-3-2 Research Forum in Japan

By inviting some of the judging committee members as mentioned above, the “Research Forum in Japan” was held on March 22nd through 24th 2006. Malaysia, the Philippines, and Thailand submitted applications for the judging committee members, and two committee members (from Malaysia and the Philippines) and two advisors (from Malaysia and Thailand) were selected at the beginning of March 2006. ECCJ invited the four members, of which three members participated in the forum, hence four ASEAN members including one ACE staff in charge of the project. In the forum, the participants were expected to develop the basic application form and to verify a further detailed plan for the future activities of the “ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings.” The program consisted of the following contents.

(1) Presentation to exchange information on the existing award systems actually realized in

the ASEAN countries

(2) Presentation of the award systems in Japan

The specifics and implementation procedures of the award systems are presented, especially the award systems for cases of best practices in energy conservation and the award system of excellent energy management for factories.

(3) Information exchange with the members implementing award systems in Japan

(4) Workshop

In the workshop, the basic application form was prepared, and the future activities plan was verified.

Table III-3-2-1 shows the details of the program.

Situation and purpose of “Research Forum in Japan”

In accordance with the plan determined through the discussion made in the Summary and Post Workshop held at the end of January 2006, the first application will be started to launch the “ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings”. Before starting the first application, it is necessary to select members of the judging committee and to develop the application form. In order to meet the plan, it was determined that the “Research Forum in Japan” would be held in March 2006 for major members of the judging committee to develop the preliminary application form to be finalized by the end of April 2006.

In accordance with the plan, by inviting main members of the judging committee the “Research Forum in Japan” was planned and implemented for the purpose of developing the basic application form and confirming the time schedule after the forum.

Results and achievement of “Research Forum in Japan”

In the “Research Form in Japan”, the participants developed the basic application form of the “ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings” and revised the time schedule.

At first, through the lectures made by ECCJ experts, the participants deepened their understanding of the award system realized in Japan and the basic plan of the “ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings”. Next, based on the knowledge, the participants made active discussion including information exchange and Q&A.

Finally, the participants developed the basic application form and confirmed the future time schedule, so that the purpose of the “Research Forum in Japan” was achieved. The prepared basic application form is shown in the Appendix III-2-2-1. The basic application form includes basic items and contents of which details will be developed in April and May 2006 reflecting comments by the focal points. The application form will be authorized and the first call for application will be made in the meeting of EE&C-SSN. The updated plan and schedule confirmed in the workshop session is shown in Appendix III-3-2-2.

The big achievement will drive the future development of the PROMEEC (Energy Management) Project and the smooth implementation of the project can be expected in the next fiscal year too.

We were able to carry out the Research Forum in Japan smoothly and achieve the aims set for the forum.

Basic Plan of the Award System of Best Practices in Energy Management

PROMEEC (Energy Management) for 2005-2006

Proposed Basic Plan of “ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings”

January 27, 2006

1. Purpose

The “ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings” (hereinafter referred to as “Award System”) aims at the following.

- (1) Providing the factories and buildings with incentives to improve their reputations of applicants hence improve their business
- (2) Collecting/Disseminating successful examples in ASEAN countries
- (3) Giving the winners chances for business related to energy conservation

2. Targets of the Award System

Enhanced Promotion of Energy Conservation in ASEAN by Sharing Collected/Disseminated Information on Best Practices in Energy Management for Major Industries and Buildings.

3. Brief Outline of Award System

Basically, the cases applied for the Award System should be practice-oriented improvement with a large effect actually proven and with potentiality of dissemination in the ASEAN region with no or low cost, rather than projects to introduce new equipment.

A judging committee for the Award System will be organized under the ACE and its members will be also recommended and decided by the ASEAN members under coordination by ACE. The judging committee evaluates all the applied cases and determines the winners.

The evaluation should be transparent, comprehensive, and understandable to meet the purpose.

Important evaluation items are listed up as follows:

- Effect of Reduction in Energy Consumption
- Economy
- Creativity
- Potentiality of Dissemination and Estimated Effect
- Impact on Environmental Protection
- Overall Evaluation

4. Process of Preparation through Implementation and Yearly Schedule

- (1) General Discussion and Reflection of requests/comments from each focal point
 - From September through December, 2005
- (2) Explanation/Agreement of Proposed Energy Management Awarding System
 - Summary/Post Workshop in January 2006
- (3) Recommendation of Members for Judging Committee by ASEAN
 - Mid-February 2006
- (4) Determination of the judging committee members
 - February 2006
- (5) Research forum in Japan for some of selected judging committee members
 - March 2006
- (6) Preparation of Application Form
 - April 2006
- (7) Call for First Application
 - May to July 2006
- (8) Screening in Each Country
 - August to September 2006 (if necessary)
- (9) Determination of Local Candidates
 - October 2006 (if necessary)
- (10) Competitive Presentation by Local Candidates in Each Country
 - November to December 2006 (if necessary)
- (11) Decision of First Local Winners
 - December 2006

(12) Presentation by Local Winners

••• February 2007

Number of Local Winners:

- Basically two (2) winners for Major Industries and Buildings in each country
- Twenty (20) Final Candidates (= Two winners/country x 10 Countries)

(13) Determination of Two (2) ASEAN Winners and Two (2) Runner-ups

••• March 2007

- One (1) Winner/One (1) Runner-up for Major Industries
- One (1) Winner/One (1) Runner-up for Buildings.

(14) Publishing through Website of ACE & ECCJ

••• May 2007

20 Cases of Local Winners including ASEAN Winners

5. Members of the “Judging Committee”

(1) Qualification: The members are required the following.

- Working experience for energy management in factories or buildings during over 5 years. (Engineer/Manager/Executive)
- Educational background with bachelor or higher degree in science/engineering
- Neutral position (governmental/public/retired person, etc.)

(2) Number: 10 to 12

For Industries: 7 with background of 7 Industries
(Iron/Steel/Other Metal, Cement/Ceramics, Chemical, Petro, Textile, Pulp & Paper and Food)

For the buildings: 3 to 5
Some members may be from members of the “Board of Judges”

Basically, more members are from the industrial sectors and own abundant experience of working for improvement in process, energy conservation with experience of management.

(3) Term: One (1) Year and Maximum Two (2) Consecutive Years for A Same Person

The term of assignment would be basically one (1) year.

(4) Recommendations of Members

Every year, all the focal points are invited to recommend candidates for the committee members. A maximum of two (2) candidates can be recommended by each country.

(5) Chairperson of Judging Committee

The chairperson and the vice chairperson will be circulated among persons from the 10 countries in an alphabetic country order.

(6) Advisor

The judging committees will own an advising team with advisors from ECCJ and ACE.

While the advisors can provide their views and advice when required, they cannot recommend/vote to select winners and runner-ups.

ATTACHMENT

1. Outline and History of the Proposed Award System

In the Summary/Post Workshop held in February 2005 at Singapore, the basic concept of the “ASEAN Energy Management System” including the future plan prepared by ECCJ was discussed with the focal points. As a conclusion, the basic concept was agreed. And the future plan includes the activity for an activity for 2005 – 2006 to study and prepare for the introduction of the “Award System for Best Practices of Energy Management in Major Industries and Buildings”. Moreover, in the panel discussion made during the “Research and Study Workshop in Japan” held in July 2005, the participants also emphasized an importance to share information among ASEAN countries, which meet the purpose of the award system. As mentioned above, the purposes of the Award System are to promote the improvement in “Energy Management” in the industry and building sectors through disseminating awarded and applied excellent cases. Accordingly, the selected excellent cases shall be suitable and effective for ASEAN conditions and attractive for related stakeholders to apply. And the evaluation shall be strict, fair, transparent, comprehensive, and understandable.

2. Preparation for Application

2.1 Preparation of Application Form

The application form reflecting the evaluation items and the detailed operating procedure of the Award System will be developed and finalized by the judging committee.

2.2 Way of Application

The applied cases will be collected by the focal point of each country and then the focal point would screen the applied cases to choose cases submitted for competition. ACE will collect the applied cases submitted for competition from all the ASEAN countries.

(1) Announcement in ASEAN countries by ACE and the focal points:

The purposes and background of the awarding system will be explained for applicants at an appropriate timing.

(2) Application form shall be submitted to ACE through the focal point in each country.

(3) The focal points of each country indicate and suggest to applicants on application form.

2.3 Necessary Conditions for Application

(1) In application, under the condition that the applicants shall provide information and data possible to publish, applicants shall fulfill the stipulated application form in accordance with the indication stated in the Item 3.

(2) In the selection process, applicants shall correspond to questions from the judging committee and receive the survey team of committee members and/or focal points, if required.

- (3) Prior to submitting the application form, all the activities of the proposed cases shall be completed and actual effects of the project shall be confirmed for an appropriate period after the completion.
- (4) In principle, excellent cases chosen as candidates including winners will be disclosed in publishing form or web site.
- (5) Language

Application format submitted to the committee shall be written in English.

3. Major Evaluation Items in Industry and Building Sectors

3.1 Format of Common Evaluation Criteria in Industry and Building Sectors

(1) Overview of Project

Description on Outline/Reasons of Theme Selection/Purpose and Target of Project

(2) Specifics of Energy Saving Activities

- Yearly Energy Consumption/Unit Energy Consumption in the past two to three years before Improvement (Base Load)
- Setting Target/Problems and Solutions
- Viewpoints and Process to Study Measures for Improvement
- Specific Measures and Activities for Improvement

Plan and Implementation including process, steps and time schedule for realization

- Responsible Organization or Team to implement the Project (including “Small Group” etc. to develop/implement activities)

(3) Actual Results

- Effect of Reduction in Energy Consumption

In Comparison of Yearly Energy Consumption/Unit Energy Consumption for one year or longer after Improvement with Base Load

- Economical Effect
- Potentiality of Dissemination and Estimated Effect
- Featured Efforts in Activities
- Impact on Environmental Protection

(4) Overall Evaluation

- Assessment of Item (3) including investment for Improvements (Payout time),
- Other Tangible and Intangible Effects (Increasing business efficiency, quality, productivity, morale, better communication and pleasant workplace, etc.)
- Creativity
- Sustainable Activities and Implementing Organization (Organization Chart, New Standardization, New Operation Mode, etc.)

3.2 Format of Individual Evaluation Criteria in Industry and Building Sectors

Applicants could explain the effects of the project by using their own method (using understandable and appropriate index).

	Building	Industry
1. Outline of Project	Yes	Yes (with Outline of Related Process and Equipment)
2. Expected and Actual Effects - Energy Consumption - Economical Improvement	Yes *1 &*3	Yes *1&*3
3. Investment Amount for Energy Conservation/Payout time	Yes	Yes
4. Top Policy and Awareness of Top Managers	Yes *4	Yes *4
5. Energy Management System	Yes *2	Yes(Achievement Measures)
6. Organization for Implementation	Yes *5	Yes *5
7. Future Development	Yes *6	Yes *6

*1 Energy Consumption

- Total Energy Consumption
- Energy Consumption for the concerned area/process
- Evaluation of Unit Energy Consumption in terms of MJ/ton and MJ/m², etc.

*2 Energy Management Systems

(Hardware with Engineered Software)

- Building Energy Management System (BAS)
- Energy Management Monitoring System
- System to Control Energy Supply/Demand (Practice)
- Acquisition of ISO etc.
- Mandatory Reporting and Activities in accordance with EC law if any
- Manpower in Energy Management Improvement:
 - Assignment of Energy Managers -
 - Training and Education Program, etc.
 - Standardization of Improvement

*3 Data with Expected /Actual Effects (Energy Consumption and Economy)

- Production Rate in the Past Two to Three years
- Energy Consumption and Unit Energy Consumption in the Past Two to Three Years
- Economical Effects

*4 Top Policy and Awareness of Top Management

- Attitude of Top Management toward activities for EE&C
- Specific Support for Project by Top Management (Technical or Financial Assistance, etc.)
- Situation of the Project (Recommended Proposal) in The Company's Business Plan
- Policy Statement including Issuance of Long Term Plan and Investment Plan

*5 Organization for Implementation

- Organization Chart (including Small Group Activities)

*6 Future Development

- Recommendation/Proposal for Further Improvement
(Item, Briefed Description on Expected Effects and Schedule)
- Status of Acceptance/Commitment by Top Management

Table III-3-2-1: Program of the Research Forum in Japan

Date	Activities
March 21 (Tue.)	Lv. Each Country Ar. Tokyo
March 22 (Wed.)	<p>AM</p> <p>1. Opening 2. Presentation for Information Exchange (1) Basic Plan on ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings (ECCJ) (2) Award System for Energy Management in ASEAN Countries (2-1) Philippines (Don Emil)</p> <p>PM</p> <p>3. Presentation of Japanese Award System (1) - Award System of Best Practices in Energy Management in Japan - Some Awarded Cases</p>
March 23 (Thu.)	<p>AM</p> <p>3. Presentation of Japanese Award System (2) - Example to Application Form Used in Japan - Procedure for Application and Evaluation including Criteria for Evaluation of Applied Cases</p> <p>PM</p> <p>4. Meeting with Japanese Members Implementing Award System - Free Discussion, Exchange Opinion and Advice (Various Issues on The Award System including Evaluation)</p>
March 24 (Fri.)	<p>AM</p> <p>5. Workshop : Application Form for ASEAN and Future Schedule 5-1. Discussion Required Items To Be Included in Application Form / Schedule</p> <p>PM</p> <p>5. Workshop : Application Form for ASEAN and Future Schedule 5-2. Summarization of Results of Discussion Preparation of Basic Form of Application Form (DRAFT) / Schedule</p>
March 25 (Sat.)	Lv. Tokyo Ar. Each Country

Basic Application Form

PREFACE

Purpose

The “ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings” aims at the following.

- (1) Providing the factories and buildings with incentives to improve reputations of applicants hence improve their business
- (2) Collecting / Disseminating successful cases in ASEAN countries
- (3) Giving the winners opportunities for business related to energy conservation

Required Conditions for Application

- (1) Under the condition that the applicants shall provide information and data possible to publish, applicants shall complete the stipulated application form.
- (2) In the selection process, applicants shall correspond to questions from the judging committee and receive the survey team of committee members and/or focal points, if required.
- (3) Prior to submitting the application form, all the activities of the proposed cases shall be completed and actual effects of the project shall be confirmed for an appropriate period after the completion.
- (4) In principle, excellent cases chosen as candidates including winners will be disclosed in publishing form or web site.
- (5) Language
Application format submitted to the committee shall be written in English.

REQUIRED ITEMS FOR APPLICATION FORM

CATEGORY OF APPLICATION : INDUSTRY / BUILDING

TITLE OF ACTIVITY/ PROJECT :

GENERAL OUTLINE OF APPLICANT

(Do not abbreviate but write in the full official name)

(1) Name of Company:	
(2) Address of the place of business:	postal code:
(3) Number of Employees:	
(4) Industry/Building Sector:	
(5) Paid-up Capital:	(in units of \$ USD)
(6) Nature of Business:	
(7) Contact:	
	Name:
	Section or Department / Position:
	Telephone No.:
	Fax No.:
	E-mail:

ABSTRACT (Please describe in 200 words)

KEYWORD

PROJECT SPECIFICS

- (1) Overview of Activity / Project
Description,
Reasons,

Purpose

Target

- (2) Top policy on Energy Conservation / Energy Management
(Including specific support for the activity / project)
- (3) Specifics of Energy Saving Activities (during the last 2 years)
 - Specific Measures and Activities implemented for Improvement
Plan and Implementation including process, steps and time schedule for realization
 - Yearly Energy Consumption / Unit Energy Consumption (base load)
Energy unit in (Electricity: kWh / Fuel kg, kl, m3 etc. (with MJ / (kg or kl, etc.))
Preferably Production Volume / Mass, Width, Numbers etc. to Derive Unit Consumption
 - Identification of Problems and Countermeasures
 - Setting Target
 - Special efforts to Study Measures and the implementation for Improvement
 - Responsible Organization or Team to implement the Activity / Project
(Including “Small Group” etc. to develop / implement activities)
- (4) Actual Results
 - Effect of Reduction in Energy Consumption
In Comparison of Yearly Energy Consumption / Unit Energy Consumption for one year
or longer after Improvement with Base Load
 - Economical Effect
Reduction in Cost / ROI
Payout time
 - Featured Efforts of Activities
 - Impact on Environment
- (5) Additional Benefits
 - Potentiality of Applicability for Dissemination and Estimated Effect
(Number of Potential Factories / Buildings, Utilization of Technology in A Similar
Factory / Building, etc.)
 - Creativity / innovation or new ideas
 - Sustainable Activities and Implementing Organization (Organization Chart, New
Standardization, New Operation Mode, etc.)
 - Other Tangible and Intangible Effects (Increasing business efficiency, quality,
productivity, safety, morale, better communication and pleasant workplace, etc.)
- (6) Future Energy Improvement Activities
- (7) Supporting Document

Total number of pages not exceeding 15 including photograph and appendices

Revised Schedule

- (1) Determination of the judging committee members
• February 2006 (Continued in accordance with the procedure previously informed))

- (2) **Research forum in Japan for some of selected judging committee members**
• **March 2006**

Circulation of Draft Application Form among Focal points

- (3) Finalization of Application Form
• April 2006

EE&C-SSN Meeting (Approval of Application Form and Plan)

- (4) Call for First Application
• May to July 2006

Inception Workshop for 2006 - 2007

Start of Activities of "Energy Management" Projects (Including Local Workshops) in June

- (5) Screening in Each Country
• August to September 2006 (if necessary)

- (6) Determination of Local Candidates
• October 2006 (if necessary)

- (7) Competitive Presentation by Local Candidates in Each Country
• November to December 2006 (if necessary)

Research Forum (2nd)

- (8) Decision of First Local Winners
• December 2006

- (9) Presentation by Local Winners
• February 2007 (Summary and Post Workshop)

Number of Local Winners:

- Basically two (2) winners for Major Industries and Buildings in each country
- Twenty (20) Final Candidates (= Two winners / country x 10 Countries)

- (10) Determination of Two (2) ASEAN Winners and Two (2) Runner-ups
• March 2007

- One (1) Winner / One (1) Runner-up for Major Industries
- One (1) Winner / One (1) Runner-up for Buildings.

- (11) Publishing through Website of ACE & ECCJ
• May 2007

20 Cases of Local Winners including ASEAN Winners

IV Policy on Future Activities to Develop the ASEAN Energy Management System

IV-1 Proposed Basic Plan of the ASEAN Energy Management System and its Operation Procedure

Based on the basic concept of the ASEAN Energy Management System which was discussed and agreed in the fiscal year 2004 and the results of discussion and survey made in the fiscal year 2005, the more detailed and specified plan for the ASEAN Energy Management System was studied and the developed plan was discussed and agreed in the Summary and Post Workshops. It is aimed that to the ASEAN Energy Management System should be shared by all the ASEAN countries.

IV-1-1 Outcome of Discussion in the Research and Study Workshop in Japan (July 2005)

This five-day workshop was held in Tokyo from July 25th to 29th 2005, as one of the hosting programs of training on energy conservation. (This program was called as the “1st Multi-Country Training Program on Energy Conservation.”) Twenty members participated in the course and the invitees consisted of one or two members from each ASEAN country and representatives of the ASEAN Center for Energy (ACE). In reality, ECCJ invited the focal points and / or their delegates who are basically the officials from energy related ministries and agencies of each country.

The purpose of the workshop was for the participants to come up with better ideas and requests for the plan of the ASEAN Energy Management System through a brain storming session, and to have them reflected in the establishment of the plan. The workshop program aims at achieving the following. First, the participants would study the Japanese situation including the political measures which have been implemented, activities of the implementation organizations, and the present situation of energy conservation activities of corporations. Next, they would visit to factories and buildings and observe / learn the Excellent Case of Energy Conservation. Then, on the last day of the workshop, they would have a brainstorming session and discussion, to wrap up the activities. Table IV-1-1-1 below shows the program for the workshop.

Prior to the workshop, the participants were requested to prepare the reports (called as “Country Report”) with the following contents for the participants and Japanese to share information through the presentations of these reports on the first day of the workshop.

- ◆ Outline of the countries’ energy infrastructure or basis of management systems
- ◆ Suggestions on the ASEAN Energy Management System
- ◆ Requests for the ASEAN Energy Management System

The summarized present status and evaluation of the infrastructure / basis for energy management clarified the following two problems common to many of the countries.

- (1) The weak incentives for promotion of energy conservation because of low energy prices which are subsidized by the government
- (2) Weak awareness and a lack of knowledge on energy conservation in the private sector partly because of the above situation

In addition to the above problems, half of the participating countries pointed out that there should be improvements in political measures. In the light of this situation, the participants shared the understanding that there were large challenges to overcome to promote energy conservation. Also, they shared the idea that the first step for establishing the plan was to clarify which aspects and through what activities the ASEAN Energy Management System could effectively contribute to the solving these problems. After sharing the above information and recognition on the present status, they studied the Japanese situation through lectures and tours, to use it as a reference for the discussion.

Table IV-1-1-1: Program of the Research and Study Workshop in Japan

Date		Morning Session 9:30 ~ 12:30	Afternoon Session 14:00 ~ 17:00
25 July	Mon	Orientation / Program Guidance / Opening Ceremony	LECTURE: Promotion of Energy Conservation in Japan by ECCJ
		KEYNOTE LECTURE: Energy Conservation Policy and Measures by METI	
26 July	Tue	LECTURE: Energy Conservation Law - System for Qualified person for Energy Management in Japan	LECTURE: Energy Conservation Law - Top Runner System
			VISIT: Excellent Consumer Products Shop of Energy Conservation (Bic Camera)
27 July	Wed	LECTURE: Energy Conservation Audit & ESCO	VISIT: Excellent Building of Energy Conservation (Itabashi Ward Office)
28 July	Thu	VISIT: Excellent Company of Energy Management (Mitsubishi Electric Co.,ltd)	VISIT: Excellent Case of Energy Conservation (OSRAM-MELCO)
29 July	Fri	PRESENTATION: Country Report	PANEL DISCUSSION: Final report Program Evaluation / Introduction of Next Training Course / Conclusion Closing Ceremony

According to the Country Report, it is noteworthy that five countries informed that there were implementing organizations for implementing energy audits and training and the organizations have been already established or now in the process of establishing. This confirmed the importance of the survey and discussion on the possibilities of utilizing the existing implementation organizations, as discussed in Chapter II.

Figure IV-1-1-1 shows the outcome of the Country Reports.

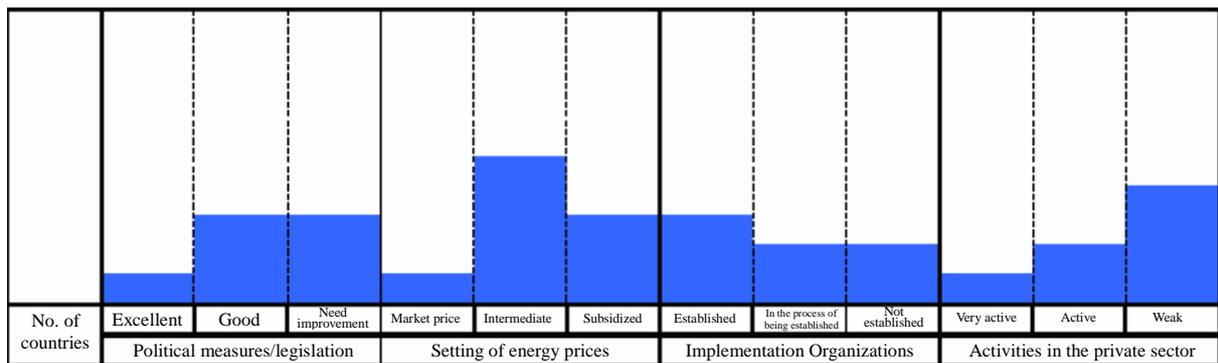


Figure IV-1-1-1: Situation on the establishment of energy management systems in ASEAN countries

Based on the outcome of the above-mentioned activities, the participants had a brainstorming session to create ideas and proposals including requests while taking into consideration the proposals, requests and wishes which had already been raised by the countries. In this session, the participants discussed the elements / functions be included in the ASEAN Energy Management System. There were many ideas, opinions, proposals and requests raised, and the brainstorming session concluded that mainly the following functions should be included in the ASEAN Energy Management System.

- (1) Function to provide information and data
The system should provide information and data necessary for the policy considerations of the countries and energy conservation activities of each company. It should include the best practices, effective technologies, information on effective projects, and data such as energy indices.
- (2) Function to provide services for energy audits and training
This would include effective use of the existing implementing organizations or an idea to establish new ASEAN implementation organization(s).
- (3) Function of training and advice to improve the personnel capabilities for implementation
This would include activities which utilize the above-mentioned implementation organizations.

IV-1-2 Proposed Plan of ASEAN Energy Management System and Procedure to Work the System

1. Scope of the functions to be included in the ASEAN Energy Management System

The scope of functions to be included in the ASEAN Energy Management System is summarized as in Table IV-1-2-2. These are based on the contents of the basic concept for the ASEAN Management System which was discussed in the fiscal year of 2004, the outcome of the above-mentioned Research and Study Workshop, and the outcome of the discussions with the existing implementation organizations in ASEAN countries in the fiscal year of 2005. As confirmed by discussions made in the past, the establishment of political measures and institutional frameworks is the issue which each country shall

implement. Therefore, regarding this issue, the ASEAN Energy Management System will only equip with only a function of information services to support such a process.

Table IV-1-2-2: Functions which should be included in the ASEAN Energy Management System

Necessary Elements	Functions Required		
	A. Information Sharing	B. Provision of Facilities and Services	C. Framework and Rules for Operation
1. Political measures and institutional frameworks	Element 1-A	<u>Out of Scope</u>	<u>Out of scope</u> (Except the part needed for Element 1-A)
2. Implementation organizations (shared among ASEAN)	Element 2-A	Element 2-B	Element 2-C
3. Improvement of conditions for promotion of energy conservation by private companies	Element 3-A	Element 3-B	Element 3-C

In accordance with the above basic idea, the ECCJ team is presently studying and preparing for provision of the following functions.

In the area of information services so far, the PROMEEC (Major Industries) and PROMEEC (Buildings) have been preparing the technical directory of energy conservation technologies for major industries and buildings and a database for promotion of energy conservation. Under the guidance and supervision of ECCJ, ACE is conducting the editorial work of the technical directory of energy conservation technologies and the design and development of the database. Also as aforementioned, for the purpose of sharing and dissemination information on the best practices in energy management, the plan of the ASEAN Award System of Best Practices in Energy Management for Major Industries and Buildings has been developed and its actual implementation is in process of preparing to start in early 2006.

Regarding the implementing organizations, the most important expected functions are essentially provision of services for training, education and energy audits.

For the improvement in infrastructure and environment for private enterprises to promote energy conservation, it will be very effective to develop a guideline for voluntary activities by self-help efforts, to provide information of suppliers of technologies and equipment for energy conservation in addition to the above-mentioned technical information etc.

Moreover, if possible, an organization of expert teams that can provide advice when consulted. The plan proposed by ECCJ, as mentioned above, was discussed as possible future activities.

2. Procedures of providing the functions of the ASEAN Energy Management System
As for the information services, it is realistic to utilize the existing system for the ACE or ECCJ website, in terms of cost, easiness of accessibility by many people considering the widespread use of computers. Concerning information gathering, it is possible to collect and build up information on best practices in energy management through the operation of the award system.

Regarding the implementation organizations, the most realistic option is to utilize the existing implementation organizations in ASEAN countries. Therefore, we will need to develop the further specific and detailed plan to operate the system based on the study and discussion made in the fiscal year of 2006. Of course, if the needs and demands are increased to an extent that exceeds the capacity of the existing implementing organizations, it may be required to establish a new ASEAN organization which can implement full-scale operations from energy audits to training. However, the priority shall be to start working the system and clarify points necessary for modification, rather than the establishment of a new organization. In this context, the best method will be to start with effectively utilizing the existing implementing organizations by the ASEAN ten ASEAN countries, as mentioned above.

Regarding the improvement in infrastructure and environment for private enterprises to promote energy conservation, it is important to gather the key persons from enterprises and provide information on energy conservation and also effective for business by utilizing various workshops, in addition to relying on the access by people to the website. Moreover, the gathering of useful information for the information services is crucial, it is also important to ask for the cooperation of private companies in providing the information taking some opportunities such as workshops.

3. Procedure of operation of the ASEAN Energy Management System

The details of the operation method will be studied and discussed from the fiscal year of 2006. ECCJ will draw up the proposed plan and discuss it with concerned people from the ASEAN countries to develop the specific plan for the operation method.

IV-2 Proposed Future Policies on Establishment of the ASEAN Energy Management System

Based on the results of discussion made in the Post Workshop in the fiscal year of 2004, the important requirements for the ASEAN Energy Management System are as follows.

- (1) The basic role of the system is to provide functions and tools for implementation for the purpose of supporting governments and private companies in the activities for improvement for promotion of energy conservation.
- (2) The system functions related to the policy and legal frame work of the individual governments shall not be in does not include activities on the political measures or institutional frameworks of each country.
- (3) In the future, the system have the function as a coordination organization that will play a role of efficiently and effectively implementing cooperation on energy conservation between ASEAN and countries outside the region such as Japan or the EU.
- (4) The above functions of the system can be shared among the ASEAN countries.

Figure IV-2-1 shows the basic concept of the ASEAN Energy Management System, which was agreed upon based on these policies.

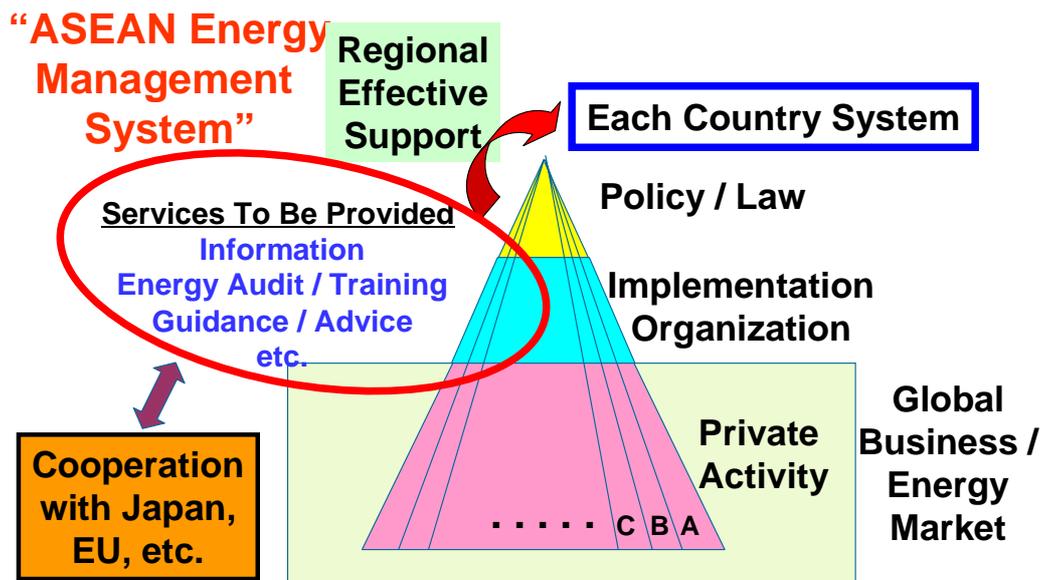


Figure IV-2-1: Basic concept of the ASEAN Energy Management System

As described above, the system will need to have implementation functions for providing information services, services to conduct energy audits, training and education, advisory services for implementation of specific activities, and organizing campaigns for improving awareness, etc. Then, the establishment of an operation system shall be developed to provide these functions.

From an operation point of view, it will be necessary to design the most appropriate whole system in both hardware and software sides, considering the realization of the policy to share the ASEAN Energy Management System among ASEAN countries. Also, considering the system's future role to effectively implement the cooperation projects between ASEAN and the countries outside the region, it will be required to organize a coordination team for the ASEAN Energy Management System.

Figure IV-2-2 shows the concept of the ASEAN Energy Management System, based on the above vision.

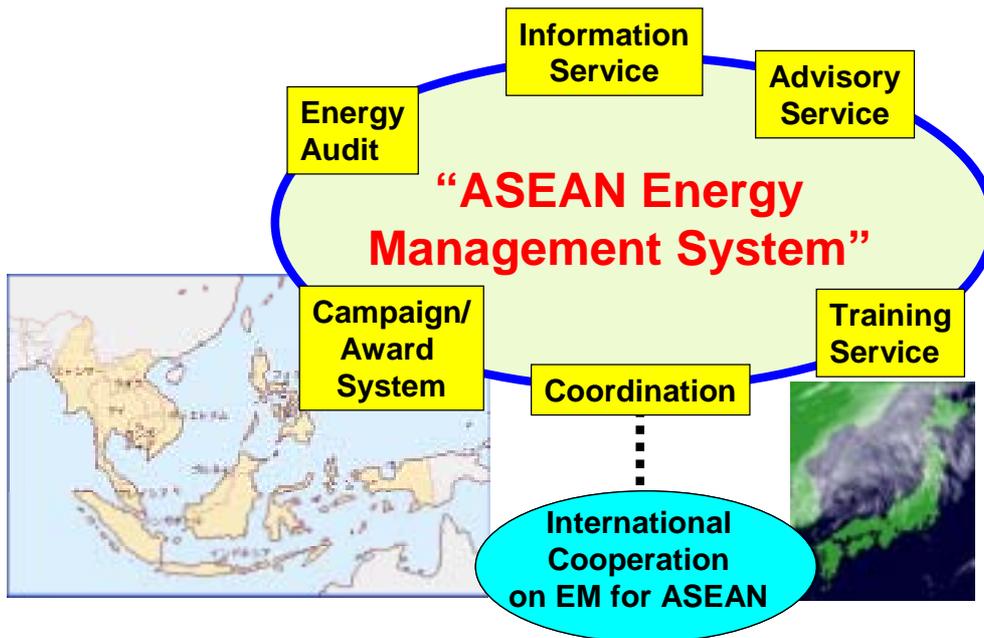


Figure IV-2-2: Conceptual picture of the ASEAN Energy Management System

When we see the whole picture, it would be easier to find an organization to collectively provide all the functions mentioned above. However, to launch such an organization, the consensus should be established among the ASEAN countries since it would require a long time and a big cost. Therefore, it is desirable to effectively utilize the existing organizations and facilities as a realistic way of proceeding with the project.

It is very fortunate that we could see the possibility of utilizing the existing implementation organizations of the ASEAN countries to provide the energy audits and training services, through the above-mentioned survey and discussion. In detail, however, each organization is working under different policy frame works and business conditions in each country. Therefore, there are variations in the areas of their specialty, personnel and facilities such as measuring instruments that they possess, even if the function of implementing energy audits is compared. Also from a capacity point of view and in the areas in which they can provide services, they differ from organization to organization. These situations may cause a concern on problems of inconsistent quality of services that they provide. However, we can also predict that there will be a variation in the level of the clients as well. This may mean that there are various choices and an appropriate variance is good for clients in the ASEAN countries. Nonetheless, it is essential for these organizations to reach at least the minimum standard of quality and capacity. Therefore, these existing organizations will need to work on capacity building also through providing their services to other countries.

On the other hand, there is an issue of what sort of operation the ASEAN Energy Management System should realize for the clients of ASEAN countries to utilize these existing organizations. According to the results of the past survey and discussions, in principle these implementation organizations could provide their service by payment of clients for services. The current plan is to discuss the proposed basic procedure and make a decision on the basic procedure with the concerned people of the ASEAN countries in April 2006 and onwards. It is considered that a realistic way is to actually implement the basic procedure agreed on a trial basis, clarify problems and find solutions, as we go.

Provision of the functions to implement energy audits and training is essential to firmly establish the energy management system of each company. We will need to go through the following stages to establish a sustainable energy management system for promoting energy conservation in companies. At first, they will need to start with technology transfers from external sources for the introduction of the system, and next move on standardization and the establishment of a related database based on the activities through their own self-help efforts. Then, the final step is to try operating, working and improving the established system including an organization for energy management on a daily basis for firmer energy management. The ASEAN Energy Management System will especially support the initial stage of this process, such as the introduction of energy conservation technologies and energy management, and systematization and standardization for building the system. Figure IV-2-3 shows this concept.

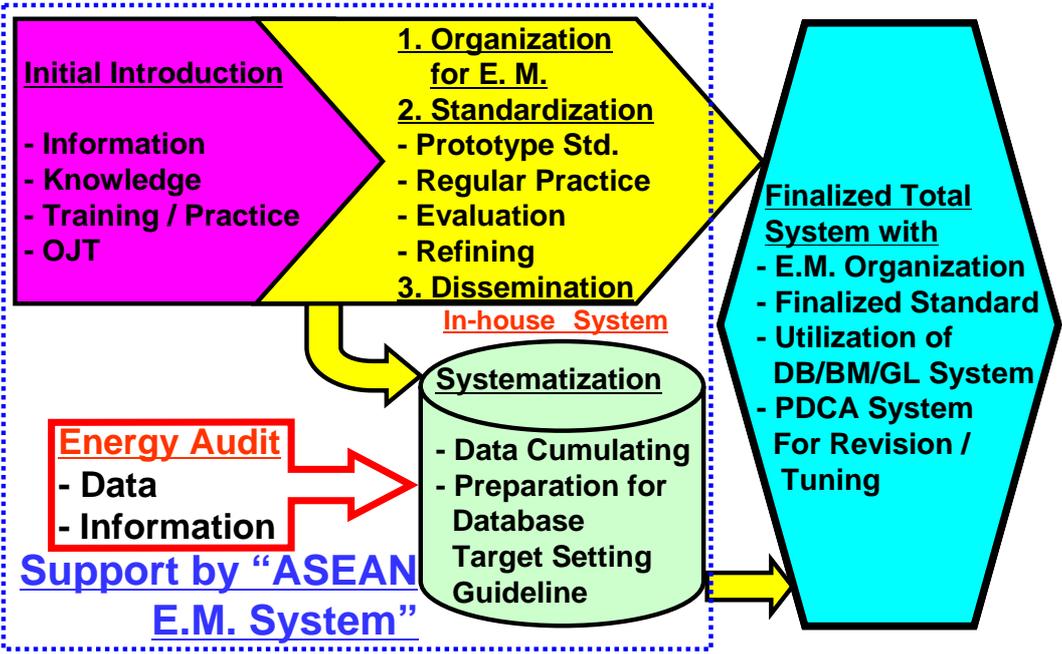


Figure IV-2-3: Establishment of a sustainable energy management system in companies and the scope of the ASEAN Energy Management System

Concerning the energy audit, experts from ECCJ have been transferring technologies and experience through the practices infield which have been implemented in factories and buildings in ASEAN countries by employing the method of OJT (on-the-job training) for the concerned local people in each country. Therefore, now it is the stage of disseminating the technologies and experience transferred not only domestically but also in the other ASEAN countries. These activities are already being implemented in the PROMEEC (Major Industries) and PROMEEC (Buildings) projects. For the ASEAN Energy Management System, it will be ideal to support companies’ activities to promote energy conservation in each country and function the tools to share and disseminate the achievements of the activities through working the system under cooperation with these projects,.

Therefore, it is important for the system to have a function which supports the efforts of companies in each country in implementing energy audits or training for energy conservation, in order to promote energy conservation. As a result of the survey conducted in 2005, we found that it would be possible to utilize each country’s existing implementation organizations to realize this function hence to discuss proposed procedures of sharing and utilizing these

existing organizations among ASEAN countries hereafter.

The other required function of the system would be to put in place a comprehensive and standard procedure called as the energy conservation promotion cycle for different sectors of industries or buildings. This cycle consists of the three stages of the identification of improvement by conducting energy audits, the improvements and then the evaluation of results. Energy conservation should be promoted on an individual factory / building basis, therefore, it is essential to build a consistent “in-house system” available for individual factories and buildings to establish a sustainable energy management system by utilizing a system base provided through the ASEAN Energy Management System. Establishing the “in-house database/benchmark/guidelines” using this system base will be the foundation of establishing the database/benchmark/guidelines at a higher level in each country or in ASEAN.

For information services, we will need to implement specific activities based on the following points, as we mentioned before.

- (1) To verify useful information for ASEAN countries and evaluate priorities.
- (2) To secure information sources to gain information available for publication through:
 - Establishing the award system
 - Increasing the number of cooperating companies
(Cooperating companies are ones which provide factories or buildings for energy audit activities, participate in workshops, or provide information by responding to requests.)
- (3) To build a system to share and disseminate the collected information.
 - Preparation of a database including a system to allow access by the clients to the database.
(It will be possible to utilize the existing databases and websites of ACE and ECCJ.)
 - Preparation of a system to maintain and update data, including modification of the database.

Figure IV-2-4 shows the concept of the system to utilize the existing implementing organizations based on the above points.

To establish the above-mentioned functions, in Phase-1, it is necessary to specify the details from the functions with a high priority so that they can start operating the ASEAN Energy Management System equipped with the most basic functions. In this way, the most important is to start with functions ready for working.

In Phase-2, targeting to build the better system, any problems with functions worked in Phase-1 should be improved and further functions shall be added.

Currently, the PROMEEC (Energy Management) project aims at completing Phase-1 within about five years hence within the next 3 years because two years have past already.

In this process, the achievements and problems found in the Phase-1 should be verified and the direction and specific activities shall be in Phase-2.

Figure IV-2-5 shows the basic long-term schedule to establish the ASEAN Energy Management System.

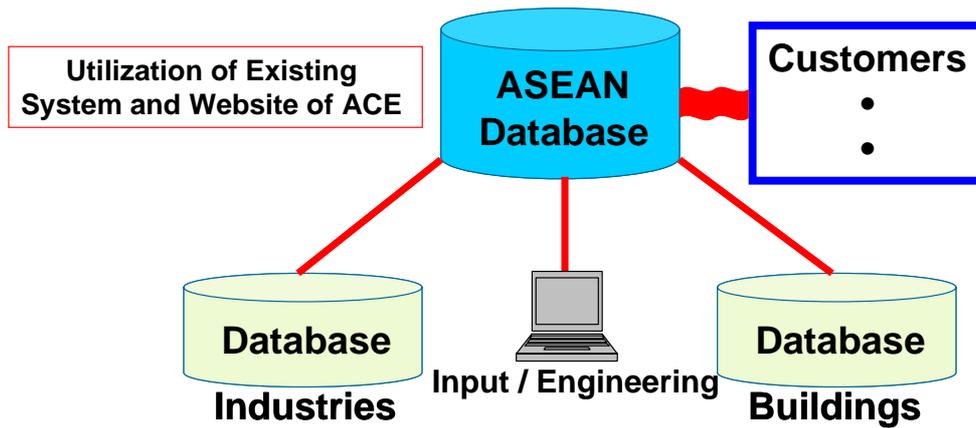


Figure IV-2-4: System Concept to Utilize The Existing Implementing Organization

Phase	Main Activities	2004	2005	2006	2007	2008	After 2009
Phase - 1	Investigation / Study Concept						
	Prepare Basic Functions						
	Develop Specific Plan						
	Prepare / Work Functions						
	Verification Result						
Phase - 2	Study / Prepare / Add Functions						

Figure IV-2-5: Basic Schedule to Establish the ASEAN Energy Management System

V Results of Discussion in the Summary and Post Workshops

The Summary and Post Workshops were held on January 27th 2006. Table V-4-1 shows the agenda of the workshops.

V-1 Results of Discussion on the Basic Plan of ASEAN Energy Management System and Procedure to Work The System

The proposed basic plan described in IV-1-2 in Chapter IV was explained, discussed and basically agreed by the focal points. As a result, it became possible to partially establish the basic plan to work the functions of the ASEAN Energy Management System from the activities ready to start providing specific services step by step. However, as mentioned before, there are some issues which should be discussed and decided in detail through the activities for working the system and it will be necessary to modify a part of the basic plan in the future.

Regarding the specifications of the database for major industries and buildings which are not agreed by some of the focal points, for example, the specifications should be authorized in the Inception Workshop for the fiscal year of 2006 based on the continues discussion of the specifics further developed by ECCJ. More specifically, ECCJ considers that it is important to establish the “in-house database/benchmark/guidelines” for each factory or building to establish the system for sustainable energy management. On the other hand, some focal point thinks of a different hierarchy of system such as at the country level or at the ASEAN level, through their experience in another on-going project on “ASEAN Benchmarking for Buildings” Therefore, the understanding of the scope and the direction of the activities by such focal points was not sufficient.

V-2 Results of Discussion on Proposed Scope of Services and System for Utilization of the Existing Implementation Organizations of Each Country in the ASEAN Energy Management System

As described in II-3-1 and II-3-2 of Chapter II, it was confirmed that the existing implementation organizations of each country could be utilized in the following three areas. This was presented in the Summary Workshop.

- Implementation of energy audits in the industry sector and the building sector
- Implementation of training on energy management and energy conservation technologies, and education for students, technicians, etc.
- Provision of information

Although the specific plan on the procedure to utilize the existing implementation organizations will be further studied soon in the future, the following are agreed by the focal points taking the present incomplete agreement into consideration.

Namely, at first, more specific procedures further developed early next fiscal year by ECCJ should be discussed and agreed by the focal points. Following that, the plan will be tried to work for reviewing and improving. This kind of trial will be repeated.

V-3 Results of Discussion on Proposed Basic Plan for the Award System of Best Practices in Energy Management for Major Industries and Buildings and Procedure to Operate the System in the ASEAN Energy Management System

The basic plan described in III-1 and III-2 of Chapter III and a consensus to go was established by the focal points. In accordance with the consensus, specific activities have been already implementing. Specifically, in order to start the first application to meet the schedule of awarding the first winners in 2007, the required preparations such as selection of the members of the judging committee and development of the application form have already been in process.

V-4 Policy on the Future Activities and Proposal of the Basic Implementation Plan for 2006 to 2007

Based on the above-mentioned outcomes of the discussions, as the basic proposed basic implementation plan for 2006 – 2007, it was agreed that the following activities should be intensively implemented.

1. Implementation of the ASEAN Award System of Best Practices in energy management

Because 2006-2007 will be the first year of implementation, a very smooth implementation of the system should be targeted. Therefore, the team shall make best efforts to deepen understanding of the stakeholders through explaining the specifics of the system in the local workshops held in each country and evaluation criteria for the judging committee members (each one from each country) including concerned to discuss and establish.

2. Establishment of the proposed procedure of effectively utilizing the existing implementation organizations in each country and the launch of its trial use

ECCJ will introduce the proposed procedure at a workshop in each country. Based on the consensus, the procedures will be started to work on a trial basis. Through this methodology, problems to improve will be identified to develop a better procedure.

3. Establishment of the proposed procedure for information dissemination

The specific plan and measures will be determined and realized to disseminate the best practices in implementation of energy conservation collected through the above award system, the technical directory and “in-house database/benchmark/guidelines” in process of development in the PROMEEC (Major Industries) and PROMEEC (Buildings) projects.

4. Preparation of other tools

The plan proposed by ECCJ was to utilize or edit some existing information and handbooks for promoting energy conservation by choosing those available for ASEAN among the tools which ECCJ has prepared through the other projects under cooperation with some countries. For example, the plan includes the activities to develop a directory

of ESCOs, handbooks to give companies with guidelines for energy conservation activities through their self-help efforts based on small group activities, TQM (total quality management) and TPM (total productive maintenance).

5. Expansion of the number of companies who participate in and cooperate with the PROMEEC project

It is also important to try increasing the number of companies who will cooperate with the project. The companies are expected to participate in the project by providing opportunities of conducting energy audit in factories or buildings and realizing activities to improve based on recommend and to disseminate the results. Namely, they will be showcases in ASEAN. Moreover, in addition to the showcases, we also expect more companies to become information sources in the future. For this purpose, the focal points and ACE will invite as many companies as possible to the workshops which will be held in the respective countries.

Table V-4-1: Programs of the Summary Workshop and the Post Workshop

SUMMARY WORKSHOPS AND POST WORKSHOP
 PROMOTION OF ENERGY EFFICIENCY AND CONSERVATION (PROMEEC)
 (MAJOR INDUSTRY, BUILDING AND ENERGY MANAGEMENT)
 SOME-METI WORK PROGRAMME 2005-2006
 26-27 January 2006
 BANDUNG, INDONESIA

Day 1: 26 January

We held the Summary Workshop for major industries and buildings. The details are omitted here.

Day 2: 27 January 2006

SESSION 3			PROMEEC – Energy Management
9:00	-	9:40	Summary of Activities by Mr. Kazuhiko Yoshida (ECCJ) 1. Results of “Research & Study Workshop in Japan” 2. Results of Intensive Surveys/Discussion in 6 ASEAN Countries - Possibility to Utilize Implementation Organization for EE&C Existing in ASEAN Countries - Proposed Award System of Best Practices in Energy Management for Major Industries and Buildings
9:40	-	10:10	3. Proposed Plan for “ASEAN Management System” : Presentation & Discussion by Mr. Kazuhiko Yoshida (ECCJ)
10:10	-	10:25	Coffee Break
10:25	-	10:40	Q&A
10:40	-	11:10	4. Proposed Plan for 2006 – 2007 : Explanation & Discussion by Mr. Kazuhiko Yoshida (ECCJ)
11:10	-	11:30	Q & A
11:30	-	13:00	Lunch
POST-WORKSHOP			
13:00	-	14:15	Confirmation of Summary Workshop by Mr. Kazuhiko Yoshida (ECCJ) 1. Important Achievement 2. Plan for 2006 - 2007
13:00	-	13:20	PROMEEC-Major Industry
13:20	-	13:40	PROMEEC–Building
13:40	-	14:00	PROMEEC-Energy Management
14:00	-	14:15	Q&A
14:15	-	14:45	Closing Statements By Chairperson (EE&C-SSN) By Mr. Tsuzuru Nuibe (ECCJ) By Dr. Weerawat Chantanakome (ACE) By Representative of Host Country
14:45	-	15:00	Coffee for Relaxation
End of Session for Day 2			

VI Reference Materials

VI – 1 Documents Used for Intensive Survey and Discussion the Implementation Organizations of Each Country

Questionnaire

Summary of the Results of the Survey and Discussions

VI - 2 Materials Used for the Summary and Post Workshops

**VI – 1 Documents Used for Intensive Survey and Discussion the
Implementation Organizations of Each Country**

Questionnaire

Summary of the Results of the Survey and Discussions

Questionnaire

PROMEEC (Energy Management Project) : Questionnaire for Site Activities (Intensive Survey and Discussion) SHEET - 1

(Purpose of Intensive Survey and Discussion)

Discussion and Survey to Study on

Possibilities to Utilize the Existing Implementing Organization for Providing Services for "ASEAN Energy Management System"

Required General Information (As of 2005)

(Name of Country)

(Name of Organization or Company)

Category

Private Local International

Government (Ministry in Charge :)

Other (Description :)

(Outline of Organization / Company)

1. Business Category	<input type="checkbox"/> Implementing Organization Assigned by Government <input type="checkbox"/> ESCO <input type="checkbox"/> Engineering Company <input type="checkbox"/> Equipment Supplier <input type="checkbox"/> Other : (Specific Description)
2. Annual Business Size	USD/Y
3. Year of Establishment	
4. Address or Location	Headquarter Branch(es)
5. Number of Employees	Total Staff : Energy Audit Staff : Training Staff : Engineering / Project for EE&C Staff : Campaign / Event / Education Staff : ()
6. Business in EE&C	<input type="checkbox"/> Energy Audit <input type="checkbox"/> Training <input type="checkbox"/> Engineering <input type="checkbox"/> Equipment Supply Name of Equipment <input type="checkbox"/> Accreditation Certification Specific Description : <input type="checkbox"/> Provision of Information <input type="checkbox"/> Other Specific Description :

PROMEEC (Energy Management Project) : Questionnaire for Site Activities (Intensive Survey and Discussion)
SHEET - 2

Is it possible to provide other ASEAN countries with your services ?

		Specific Services Possible to Provide	Conditions for Provision
YES		<input type="checkbox"/> Energy Audit <input type="checkbox"/> For Industrial Sector (Factories) Field : <input type="checkbox"/> For Building Sector (Commercial Buildings) <input type="checkbox"/> Training <input type="checkbox"/> Lecture by Textbooks <input type="checkbox"/> Workshop <input type="checkbox"/> Training with mini-plant <input type="checkbox"/> Training in Factories and / or Buildings <input type="checkbox"/> Provision of Information (Please describe specifically.) ----- ----- <input type="checkbox"/> Others (Please describe specifically.) ----- -----	<input type="checkbox"/> No Condition <input type="checkbox"/> Under the Following Conditions 1. Finance <input type="checkbox"/> Fee by Clients <input type="checkbox"/> Financial Assistance by Government 2. Business Approval Required <input type="checkbox"/> By the Ministry in Charge <input type="checkbox"/> By Stockholders <input type="checkbox"/> By Other Third Party(ies) 3. Technical Capability / Intellectual Properties <input type="checkbox"/> Agreement or Written Consent with The Third Party(ies) <input type="checkbox"/> Enhancement / Expansion of Owned Facilities <input type="checkbox"/> Employment of Additional Auditor / Trainer <input type="checkbox"/> Employment of Interpreter <input type="checkbox"/> Revision of Program and Document <input type="checkbox"/> Improvement in Office Automation and IT Environment 4. Infrastructure <input type="checkbox"/> Accommodation / Meal Service / Medical Service <input type="checkbox"/> Transportation 5. Others : Please describe specifically.
	NO	Do you wish to be a technical service provider for ASEAN ?	
	NO	No Wish / No Intention / No Interest	
	YES	What kind of service do you want to provide ? <input type="checkbox"/> Energy Audit <input type="checkbox"/> Training <input type="checkbox"/> Provision of Information <input type="checkbox"/> Provision of Information	<input type="checkbox"/> Deregulation by Your Country Agreement by The Third Party(ies) Expansion / Modernization of Facilities Employment of Capable Engineers with Language Capability Capacity Development of The Existing Employees <input type="checkbox"/> Under Technical Assistance from Advanced Country(ies) <input type="checkbox"/> Increase in Available Interpreter <input type="checkbox"/> Others (Please describe specifically.) ----- -----

PROMECC (Energy Management Project) : Questionnaire for Site Activities (Intensive Survey and Discussion)
SHEET - 3

Please provide the following information on facilities and capacities for services by your organization / company. (As of 2005)

1. Energy Audit

(1) Profile of Auditors

Available Field	Number of Auditors & Qualification			Experience : Number of Auditors		
	Total No.	Certified	Accredited	> 3 Years	3 - 10 Years	> 10 Years
Building						
Industry (Sector)						

Total						

(If Any) (If Any)

(2) Qualification / Background of Auditors

- Job Experience (Engineer / Technician from Factory / Building)
- Academic Experience
- Certified by
- Accredited by

(3) Owned Facilities

Sensors for Measurement

- (Mechanical) Pressure Gauge Flowmeter Pitot Tube Anemometer
- (Thermal) Thermometer Infrared View Calorie meter
- (Chemical) Gas Analyze Gas Sampler
- (Electrical) Clampmeter Luxmeter
- (Data Collection) Data Logger
- (Data Processing) Computer Software

Bus / Vehicle with Equipment for Energy Audit

- YES
- NO

2. Training

(1) Profile of Trainers

Major Course	Number of Trainers & Qualification			Experience : Number of Trainers		
	Total No.	Certified	Accredited	> 3 Years	3 - 10 Years	> 10 Years
Thermal (Total)						
A. General						
B. Industry						
C. Building						
Electricity (Total)						
A. General						
B. Industry						
C. Building						
Other Specialized (Please Specify.) (Total)						
A.						
B.						
C.						
D.						
Total						

(If Any)

(If Any)

(2) Qualification of Trainers

Job Experience

Certified by

Accredited by

(3) Profile of Trainees

Top Manager / Company Owner

() persons/Year

Manager (Including Energy Manger)

() persons/Year

Engineers

() persons/Year

Technicians

() persons/Year

Student (University / College Level)

() persons/Year

Student (Under Senior High School)

() persons/Year

(4) Main Components of Curriculum and Features

- Lecture
- Training with Use Mini-plant
- Training with Visits to Factories and/or Buildings
- Practical Training for Energy Audit by Mini-plant
- Practical Training for Energy Audit at Factory and/or Building
- Specialized Workshop and/or Forum

(5) Owned Facilities

- Building and/or Lecture Room(s) for Training
- Lecture Facilities (Visual / Audio Facilities such as PC, LCD, OHP, etc.)
- Training Facilities (Mini-plant)
- Training Facilities (Sensors for Energy audit)
- Training Facilities (PC Simulator, etc.)
- Library
- Publishing Textbook
- Accommodation
- Transportation

Summary of the Results of the Survey and Discussions – 1

Implementing Organization	Indonesia			Malaysia		Philippines				Viet Nam		
	IN - 1	IN - 2	IN - 3	MY - 1	MY - 2	PH - 1	PH - 2	PH - 3	Ph - 4	VN - 1	VN - 2	VN - 3
1.General Information												
Place	Jakarta	Jakarta	Jakarta	KL	Penang	Manila	Taguig	Queson	Manila	Ha Noi	Ho Chi Minh	Ho Chi Minh
Category	MoEMR	Stateenterprise	Stateenterprise	Government	Government	Government	Government	NPO	NPO	Government	Gov.	NPO
Business Category	Training requested by Gov.	Training, ESCO, Audit	Operation to maintenance services/ESCO	Training, ESCO, Audit	Training	Training, Audit	Training, Audit requested by Gov.	Training	Training, Audit	Implementing by Gov.	Implementing by Gov.	Training, Audit
Annual Business Size			5MilliUS\$/Y									
Year of Establishment	2001	1987	150MW/y		700Mill.RM/Y					50KUS\$/Y		
NO. of Employee	57	51	118		14	40	20			175	30	12
Staff: Energy Audit	2-3	Total 26, Risk Management 2	2							14	8	10&Collaboration:20
Staff: Training	13		2							20		
Staff: Other	Eng.29		Eng.1									10
	Economist 2-3		Other 2									
Business in EEC	Training	Audit, Training, Engineering	Audit, Engineering	Audit, Training, Engineering	Training	Audit, Training	Audit, Training, Engineering	Training	Audit, Training, Engineering	Energy Audit, Information Provider	Audit, Training, Engineering	Energy Audit, Training, Information
2.Future Participation in ASEAN EM System	YES	YES	YES	YES	YES	YES	YES		YES	Yes	Yes	Yes
Energy Audit: Factory		Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Energy Audit: Building		Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Training: Lecture	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Training: Workshop	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Training: Mini-plant	Field Training	No(Field Training)				Boiler, Combustion				In-Site	In-Site	In-Site
Fee for Services	To be Required	To be Required	To be Required	To be Required	To be Required	To be Required	To be Required	To be Required	To be Required	To be Required	To be Required	To be Required
Approval to be required	by Ministries	By oneself	by shareholder	Information to	By oneself	By Ministry	By Ministry	By oneself	By oneself	By Shareholder	By Ministry	To be Required
Ip/Copy right	No	Required approval	No	No	Free	Free	NO	No	No	Yes	No	No
Infrastructure	Meal, Hotel, medical				Accom	No	Accom. Transp.			No	Transport.	No
3.Existing Resources												
Auditor(3-10 years)		Build.2 Ind.2	Ind.1	5Eng's,4Tec'n	Hospital in Saba					8		8
Auditor>10 years		Build.12 Ind.17	Build.1	50Experiences	Outsourcing	18	Build.20			4	8	9 Indust.
				Various Industries							Various Ind.	Various Ind.
				Outsourcing							Build.	Build.
Qualification							License Eng.					
Job Experience	Yes	Yes	Yes			Yes	Yes		Yes	Yes	Yes	Yes
Academic	All graduated	All graduated				Yes	Yes		Graduate	Graduate		All graduated
Certified/Accredited	No exist in Indo.	Same as left	Same as left			Registered Eng.				Fichtner/Colenco		
Instrumentation	Some	All	Some	Yes	In University	Yes	Yes		Some	All	All	Almost all
Bus/vehicle	Yes	No	No	No	In University	Yes	No			No	Yes	No
Trainer(<3years)	Industrial 2								2Therm.2Elec.			Same as Audit
Trainer(3-10 years)	Electrical 2	Auditor cum Traininer		Outsourcing					10Ther.4Elec		6	Same as Audit
Trainer >10 years	Mechanical 1		Elec.1/Econo.1	Outsourcing	Outsourcing	18	Therm.20, Elec.20		4Ther.2Elec.	2(Therm.)	6(Thermo)	Same as Audit
Qualification	National Exam.						License Eng.			6(Elect.)	4(Elect)	Same as Audit
Job Experience	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	3(other)	Same as Audit
Academic	All graduated	All graduated	Yes	Yes								Same as Audit
Certified/Accredited	No exist in Indo.	-	-	-			Registered Eng.			Certified		Same as Audit
Trainees	For Officials	Engineer, Top					Top Manag., Manager	Local Fact.		All level exc't. student	Top Manag., Manager	All Level
Curriculum	For Officials	Lecture/On site	On site Training				technical topics	Lecture/On-site		All style	Lecture	Lecture
	20person/Y for Engrs									Basic&Advanced	On-site	On-site
	20 person/Y for Techn.										Mini.Plant	Mini.Plant
Own Facility												
Lecture Room	Yes	No	Yes	No	University	Yes	Yes	Yes	No	Yes	Yes	No
Lectre Facility	Yes	Yes	Yes	No	University	Yes	Yes	Yes	No	Yes	Yes	Yes
Training Facility	Yes	No	No	No	University	Yes	No	Yes	No	Yes	No Mini plant	Yes(Simulators)
Library	Yes	Yes	No	No	University	Yes	Yes	Yes	No	No	No	Yes
Textbook	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes
Accommodation	Yes	No	No	No	University	No	No	No	No	No	No	No
Transportation	No	No	No	No	University	Yes	No	No	No	No	Yes	No

Summary of the Results of the Survey and Discussions – 2

Implementing Organization	Thailand							Singapore
	TH - 1	TH - 2	TH - 3	TH - 4	TH - 5	TH - 6	TH - 7	SN - 1
1.General Information								
Place	Pathum Thani	Bangkok	Bangkok	Bangkok	Bangkok	Bangkok	Bangkok	Sigapore
Category	Government	Private	Private	Private	Private	Private	NPO	University
Business Category	Implementing Org. by Government	EC Consultant	Energy Consultant	Engineering Co.	ESCO,Eng.Ot her	Eng. Co	Implementing Org.	Implementing Org.,ESCO
Annual Business Size			750Mill		1.2Mill US\$	0.3Mill	1.2Mill US\$	SS\$2M
Year of Establishment	1992	1996	1998		1995	1992		
NO. of Employee	40	40	16	250	31	70	52	8
Staff: Energy Audit	6		6		19	10		20
Staff: Training	14		2					12
Staff: Other	8		4		12	30(Eng)		20
Business in EEC	Outsourcing 6~7Co. Training	Energy Audit, Training, Engin eering	Energy Audit, Training,	Energy Audit, Training, Engineering	Energy Audit, Training, Engineering, E quip, Supply	Energy Audit, Enginee ring	Energy Audit, Training, Info rmation Provider	Energy Audit, Training, Informati on Provider, Accredi tation Certificate
2.Future Participation in ASEAN EM System	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Energy Audit: Factory	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Energy Audit: Building	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Training: Lecture	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Training: Workshop	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Training: Mini-plant	Yes	On-Site training	No	On-site	Yes	No	Yes	Yes
Fee for Services	To be Required	To be Required	To be Required	To be Required	To be Required	To be Required	To be Required	To be Required
Approval to be required	by DEDE	By themselves	By themselves	By themselves	By themselves	By themselves	By themselves	By themselves
Ip/Copy right	DEDE							Agreement Yes
Infrastructure					Future Expansion		Future Expansion	
3.Existing Resources								
Auditor(3-10 years)	6	Build:12 Ind:13	Ind.:24	Buil:6,Ind:6	Buil:7,Ind:	Buil:3,Ind:3	Buil:0,Ind:1	Buil:5,Ind:2
Auditor>10 years		Ind:9		Buil:4,Ind:10	Buil:4,Ind:4	Buil:2,Ind:2	Buil:9,Ind:9	Buil:5,Ind:2
Qualification								
Job Experience	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Academic		Yes	Yes		Yes		Yes	Yes
Certified/Accredited	No							
Instrumentation	Yes, All	Yes	No	Yes	Yes	Yes	All Yes	All Yes
Bus/vehicle	Yes	Yes	No	Yes	No	No	Yes	
Trainer(<=3years)								
Trainer(3-10 years)	6		Elec.:3,	Therm:3,Elec.:3	Therm:4,Elec.:3	-	Therm:0,Elec.:0	Therm:5,Elec.:5
Trainer >10 years	8	Therm:4,Elec.6	Therm.:2	Ther.2,Elect.:2	Therm.1,Elect.	-	Therm.2,Elect.:2	Therm.2,Elect.:2
Qualification		Other:1		Other:2		-	Other:4	Other:2
Job Experience	Yes	Yes	Yes	Yes	Yes	-	Yes	Yes
Academic						-		
Certified/Accredited			Yes?			-	PRE	
Trainees	PRE	Top Maneg.Eng.Tec	Manager(50),E ngineer(100),T echnician(300), Student(50)	Manager,engin eer,Technician	Top Manag.(50)Ma nager(100),En gineer(600),T echnician(50)		Top Manag.(120)Ma nager(300),Eng ineer&Tech.(76 0)	Top Manag.(100)Manag er(150),Engineer(15 0),Student(50)
Curriculum	All type (Simulator)	Lecture	Lecture	Lecture, Onsite	Lect., Onsite, Mi ni Plant		Lect., Onsite, Mi ni Plant	Lecture, Workshop
Own Facility								
Lecture Room	Yes	Yes		Yes			No	Yes
Lecture Facility	yes	Yes	Yes	Yes	Yes		Yes	Yes
Training Facility	yes	No	Yes	Yes	Yes(sensor)		Yes	Yes
Library	yes	No	Yes	Yes	Yes		No	Yes
Textbook	yes	No	Yes				Yes	
Accommodation	No	No						
Transportation	Yes	Yes					Yes	

VI - 2 Materials Used for the Summary and Post Workshops

Permission shall be required to give out the contents of this report in advance due to the copy right in a written form. To gain permission, please contact the International Engineering Department of the Energy Conservation Center, Japan.

Phone: +81 3 5543 3018
Fax: +81 3 5543 3022

J08

PROMEEC for 2005-2006 Energy Management Project Summary Workshop - Proposed Future Plan -



January 27th, 2006

Kazuhiko Yoshida

**General Manager, International Engineering Dept.
The Energy Conservation Center, Japan**

1. Project Status of 2006-2007

3rd Year

(Newly Established in 2004)

Results of Activities in 2005 – 2006

(1) Research & Study Workshop in Japan

- Learning and Observation What Japan do**
- Brainstormed Ideas / Proposals for “ASEAN Energy Management System”**

(2) Intensive Survey at 5 Countries

Possibility to Utilize The Existing Implementing Organizations

20 Organizations are eager to provide their Services for Energy Audit, Training and Others

Results of Activities in 2005 – 2006

(3) Study / Discussion on Plan of Award System of Best Practices in Energy Management for Major Industries and Buildings

- Discussion through Local Intensive Survey**
- Almost Established Plan**

(4) Study on Plan for “ASEAN Energy Management System”

- Development of Proposed Plan Based on The Results of The Above Activities**

2. Basic Direction for 2006-2007

- (1) Activities Based on The Proposed Plan**
- (2) Start Working Functions of “ASEAN Energy Management System”**
 - 1) Award System for Best Practices in E.M.**
- (3) Development of Specific Detailed Plan**
 - 1) Procedure to Utilize The Existing Implementing Organizations**
 - 2) Procedure to Disseminate Technical Directory & In-house DB/BM/GL System**
 - 3) Development of Other Tools for Energy Management**

Items (2)&(3) : Cooperative Implementation with Projects for Major Industries & Buildings

General Time Schedule

Phase	Main Activities	2004	2005	2006	2007	2008	After 2009
Step - 1 Prepare Basic Functions	Investigation / Study Concept						
	Develop Specific Plan						
	Prepare / Work Functions						... 
	Verification Result						
Step - 2	Study / Prepare / Add Functions					... 	

Updated Plan for 2006 - 2009

Project	Phase	Activities	2006-07	2007-08	2008-09	
Energy Manage.	<u>Step 1</u> Prepare Basic Function	Develop Further Specific Plans Verification / Feedback	Continue			
		Functioning Award System for Best Practice Dissemination of Info.	Start			
				Database to Disseminate		
			Plan			
	- Develop Procedure to Utilize Exist. Org. - Functioning Procedure		Trial	Finalize		
Development of Info. Sys. Development of New HB.						
		Start				
	<u>Step 2</u>	Study Prepare / Add Functions				
		Operation of System	Start-up	Ramp-up	Tune-up	

3. Activities for 2006-2007

1. Start “Award System for Best Practice in E.M. for Major Industries / Buildings in April

(1) Intensive Workshop

Explanation & Advice on Application (in Max. 6 Countries Such as Cambodia Lao PDR, etc., Including Judging Committee)

(2) Research Forum in Japan (Evaluation & Development of Dissemination Procedure)

1st : March 2006 (Kick-off),

2nd : December 2006 (1st Evaluation)

3. Activities for 2006-2007 (Continued)

2. Development of Procedure to Utilize The Existing Implementing Organizations (Introductory Trial, if Possible)

- (1) Intensive Workshop (Same as 1 (1))
Explanation & Discussion of Proposed Procedure**
- (2) Trial Operation to Probe Points to Improve**

3. Development of Procedure to Disseminate Information as follows

- (1) Successful Cases from Award System**
- (2) Technical Directory / In-house DB/BM/GL Sys.**

3. Activities for 2006-2007 (Continued)

4. Development of Other Tools for Energy Management

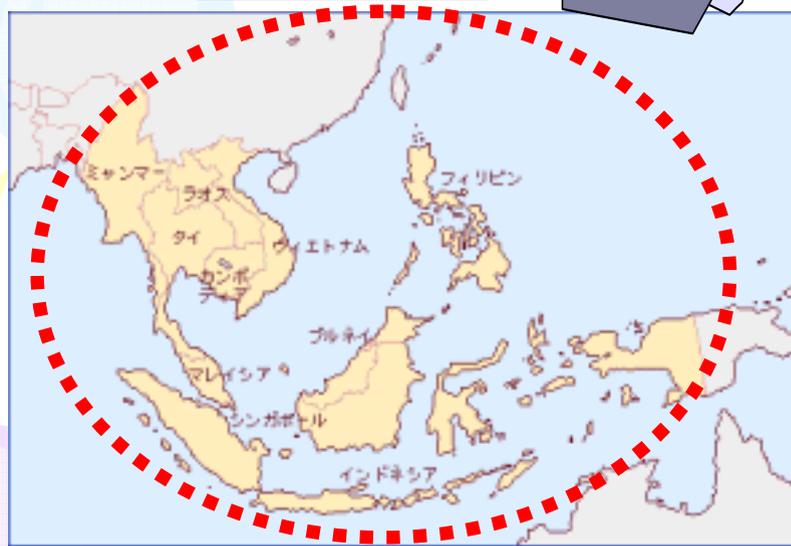
- (1) Total Energy Management Handbook for ASEAN (Based on HB Developed by ECCJ)
(Guidance for Voluntary Activities Based on Small Group Activities and TQM/TPM)**
- (2) Directories of ESCOs, Suppliers
(Technology and Equipment for EE&C)**

5. Development of Information Sources

- (1) Intensive Workshop (Same as 1 (1))
Encouraging Companies to Participate in
The Project Activities**

Thank You

Very Much



The Energy Conservation Center, Japan

PROMEEC for 2005-2006 Energy Management Project Summary and Post Workshop - Results of Activities -



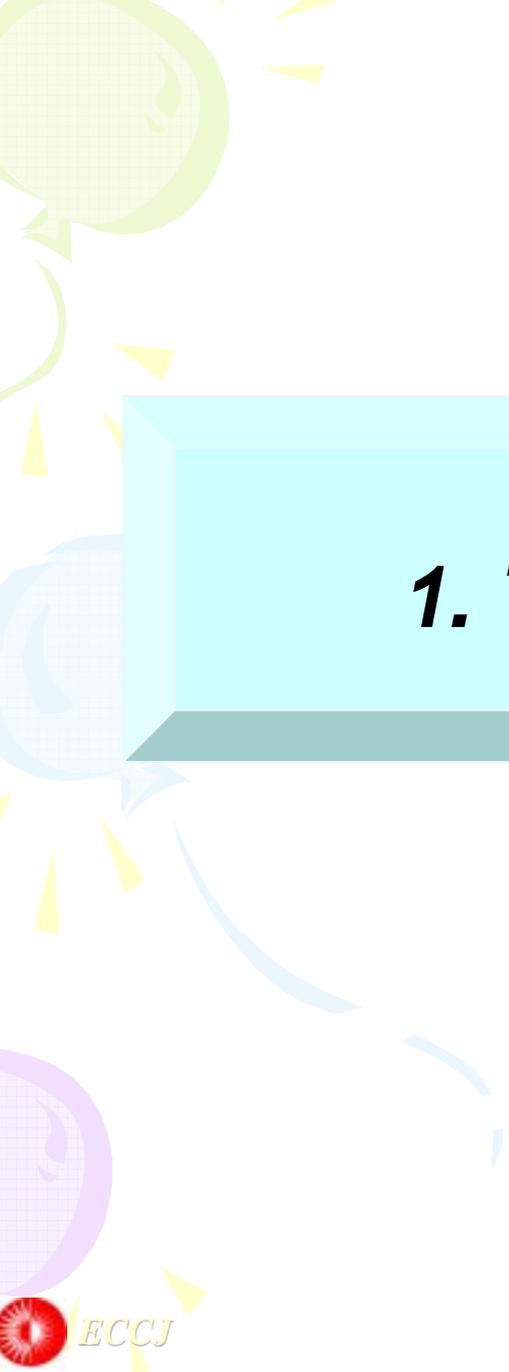
January 27th, 2006

Kazuhiko Yoshida

**General Manager, International Engineering Dept.
The Energy Conservation Center, Japan
(On Behalf of METI)**

Contents

- 1. Targets for 2005 - 2006***
- 2. Activities to Achieve Targets and Results***
- 3. Conclusion***



1. Targets for 2005 - 2006

Targets for 2005 – 2006 (1-2)

(Target 1)

Identification of Components Possible to Share among ASEAN or To Be Added for "ASEAN Energy Management System"

(Target 2)

Development of The Award System for The Best Practices in "Energy Management for Major Industries and Buildings"

Targets for 2005 – 2006 (2-2)

(Target 3)

Assessment of Possibility & Procedures / Rules to Utilize & Function Services and Facilities Owned by The Existing Implementing Organizations in ASEAN

(Target 4)

Assessment of Prioritized Components and Establishment of The Specific Plan of "ASEAN Energy Management System"



2. Activities to Achieve Targets and Results

Activities to Achieve Target

	Target 1	Target 2	Target 3	Target 4
Local Intensive Survey		●	●	
Workshops	● Research & Study (JP)	● <u>New</u> Research Forum (JP)		● Summary & Post
Internal Analyses & Study	●	●	●	●

Activity for Target 1

Research & Study Workshop in Japan Brainstormed Ideas & Proposals

- 1. Learning and Observation of Actual Situations of Various Activities for Energy Conservation Including Energy Management Realized in Japan**
- 2. Information Exchange between Participants including Japanese**
- 3. Discussion and Brainstorming To Create Ideas on The Plan for The “ASEAN Energy Management System”**

Activity for Target 1

Research & Study Workshop in Japan

Participants

1. Total Number : 20

1 or 2 from Ten (10) Country and ACE

2. Categories

1) Focal Points of EE&C-SSN for PROMEEC

2) Persons from

- Governmental Organizations Related to EE&C
- Non-governmental and Non-profit Implementation Organizations for EE&C

Activity for Target 1

Research & Study Workshop in Japan

Program and Schedule

Date		Morning Session 9:30 ~ 12:30	Afternoon Session 14:00 ~ 17:00
25 July	Mon	Orientation / Program Guidance / Opening Ceremony	LECTURE: Promotion of Energy Conservation in Japan by ECCJ
		KEYNOTE LECTURE: Energy Conservation Policy and Measures by METI	
26 July	Tue	LECTURE: Energy Conservation Law - System for Qualified person for Energy Management in Japan	LECTURE: Energy Conservation Law - Top Runner System
			VISIT: Excellent Consumer Products Shop of Energy Conservation (Bic Camera)
27 July	Wed	LECTURE: Energy Conservation Audit & ESCO	VISIT: Excellent Building of Energy Conservation (Itabashi Ward Office)
28 July	Thu	VISIT: Excellent Company of Energy Management (Mitsubishi Electric Co.,Ltd)	VISIT: Excellent Case of Energy Conservation (OSRAM-MELCO)
29 July	Fri	PRESENTATION: Country Report	PANEL DISCUSSION: Final report Program Evaluation / Introduction of Next Training Course / Conclusion Closing Ceremony

Activity for Target 1

Research & Study Workshop in Japan

Evaluation of Current Status

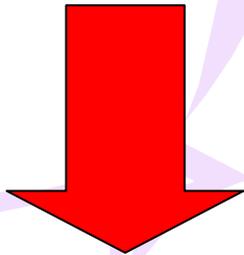
- Summary of Country Report -

10												
9												
8												
7												
6												
5												
4												
3												
2												
1												
No. of Countries	Excellent	Good	To Be Improved	Market Based	Partially Subsidized	Subsidized	Established	Establishing	To Be Established	Very Active	Active	Weak
	Policy / Regulative Framework			Energy Pricing System			Implementation Organization			Activities by Private Sector		

Activity for Target 1

Research & Study Workshop in Japan Brainstormed Idea and Proposal Including Desire / Wish

1. Provision by Country Report **Proposal and Desire / Wish**



Lecture and Visits to Business Units Best-Practiced in Japan

2. Brainstorming **Additional Ideas and Proposals**

Activity for Target 1

Research & Study Workshop in Japan Results : Ideas / Proposals for “ASEAN Energy Management System”

1. Provision of Information / Database
Useful Best Practices / Technology
/ Data / Other Project Information

2. Facilities / Services / Organization
to Implement EE&C Activities
Energy Audit / Training / Education

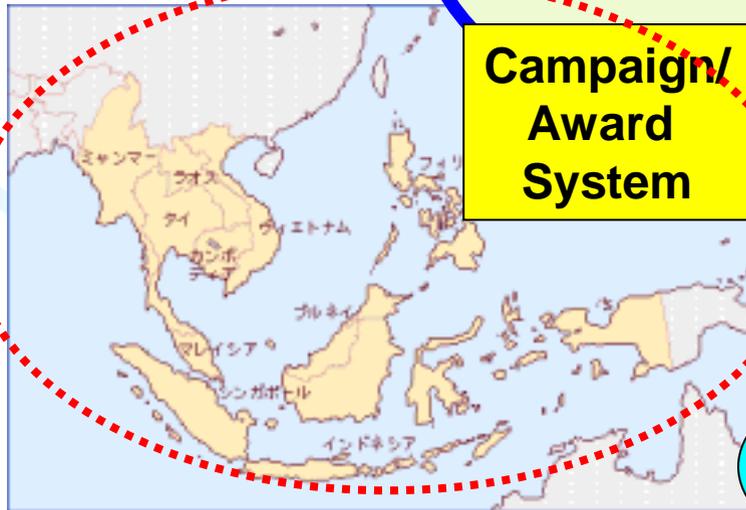
3. Building Capacity of Persons

Approach to Develop “ASEAN Energy Management System”

Investigation on Actual Status
Of “EM” Infrastructure
for Study ('04-'05)

Brainstormed
Ideas

“ASEAN Energy
Management System”



Energy Audit

Information Service

Advisory Service

Campaign/
Award System

Coordination

Training Service

International Cooperation on EM for ASEAN



Activity for Target 2
Local Intensive Survey
Development of Basic Plan for
Award System of Best Practices in
Energy Management for
Major Industries & Buildings

- 1. Draft Proposal by ECCJ**
- 2. Intensive Survey in 5 Countries**
Discussion with Focal Points
- 3. Preliminary Proposal by ECCJ**
- 4. Request of Comments from All Countries**

Activity for Target 2

Local Intensive Survey at 5 Countries

Discussing Draft Plan with Focal Points

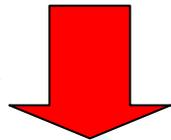
1. Visited Countries to Discuss Draft

Indonesia / Malaysia / Philippines

Thailand / Vietnam

2. Request of Comments by Sending Draft

Singapore



Internal Study by ECCJ

3. Preparation of Preliminary Plan by ECCJ

4. Comments of Preliminary Plan by E-Mail



Activity for Target 2

Outline of Preliminary Plan (1) : Award System for Best Practices in E.M.

**(Purpose) Collect & Share Information
on Best Practices in E. M.**

1. Category : Industries and Buildings

2. 2 Winners & 2 Runner-Ups Each Year

**1 Winner & 1 Runner-Up Each Category
among 2 Candidates from Each Country
(1 for Industries + 1 Buildings)**

3. Publishing Awarded Cases on Website

Activity for Target 2

Outline of Preliminary Plan (2) : Award System for Best Practices in E.M.

4. Judging Committee

1) Number of Members : 10 to 12

Main Members from Industries (7 or More)

- Recommendation by Focal Points and ACE / Advice by ECCJ for Finalization
- Assignment for 1 Year or 2 Years (Max.)

2) Research Forum in Japan (March 2006)

- Participants : Members from Industries
- Procedure & Evaluation Criteria in Japan

Activity for Target 2

Outline of Preliminary Plan (3) : Award System for Best Practices in E.M.

5. Schedule for The 1st Award

April 06 : Preparation of Application Form

May 06 : Call for Application

December 06 : Decision of Local Winners

February 07 : Presentation by Focal Points

(Same Timing as Post Workshop)

March 07 : Determination of ASEAN Winners

May 07 : Publishing Winners on Website

Activity for Target 3

Local Intensive Survey

Possibility to Utilize The Existing Implementing Organizations / ESCOs

1. Preparation of Questionnaire by ECCJ
2. Sending Questionnaire to Implementing Organizations through Focal Points
3. Intensive Survey in 5 Countries
 - Visit to Implementing Organizations
 - Interview / Discussion Based on Reply to Questionnaire
 - Observation of Owned Facilities

Activity for Target 3

Local Intensive Survey

(No. of Implementing Organizations)

	Total	Government	Private
Indonesia	3	3	0
Malaysia	2	2	0
Philippines	4	2	2
Thailand	7	1	6
Vietnam	3	2	1
(Singapore)	(1)	(0)	(1)

Total 20 Organizations including ESCOs ²²

Activity for Target 3

Local Intensive Survey : Questionnaire

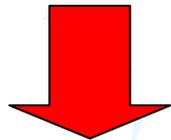
Part 1. Outline of Organization & Business

Part 2. Possibility / Intension to Provide
Services and Facilities for Other
ASEAN Countries

(Including Conditions for Provision)

Part 3. Services and Facilities Owned

(Energy Audit and Training, etc.)



Reply to Questionnaire

Visit : Interview / Discussion / Observation

Activity for Target 3

Local Intensive Survey : Results - 1

Almost All Organizations Showed Strong Intension to Provide Other Countries with Their Services and Facilities as Business !

1. Services Possible to Provide

(1) Energy Audit

For Industries and Buildings

(2) Training / Education (Inc. for Students)

Energy Management / Energy Audit, etc.

(3) Others (Engineering, Information, etc.)

Activity for Target 3

Local Intensive Survey : Results - 2

2. Conditions for Service Provision

(1) All Organizations

1) Fee for Services

(2) Some Organizations

2) Approval by Owners etc. (Some)

3) Expansion of Facilities and Manpower

4) Language is English.

(3) A Few

4) Agreement on Copy Right etc.

5) Interpreter for Local Language-English

Activity for Target 3

Local Intensive Survey : Results – 3 (Scope of Services by The Implementing Org.)

Energy Audit	Training / Education	Other Services	Number of Organizations
			2
			12
			2
			4
<u>TOTAL</u>			20

Activity for Target 4 **To Develop Plan of "ASEAN Energy Management System"**

1. Assessment of Prioritized Functions

(1) Provision of Useful Information

Award System (Preparation In Process)

Dissemination of Other Information

(2) Provision of Energy Audit and Training Measures Under Study

(3) Provision of Other Services

2. Development of Specific Plan of "ASEAN Energy Management System"

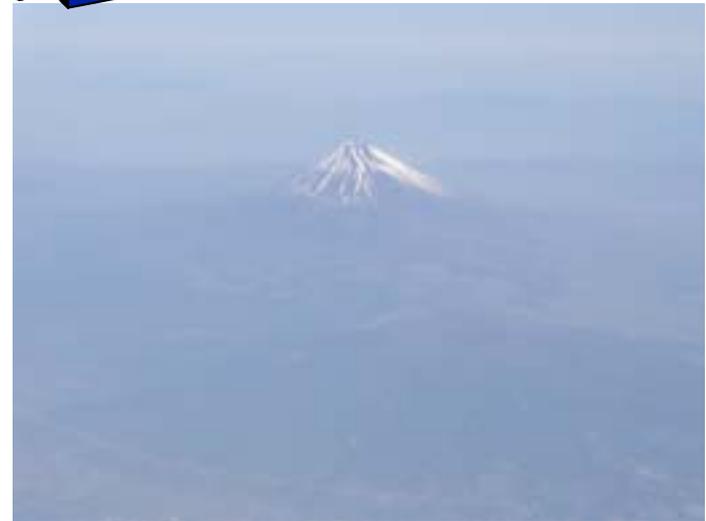
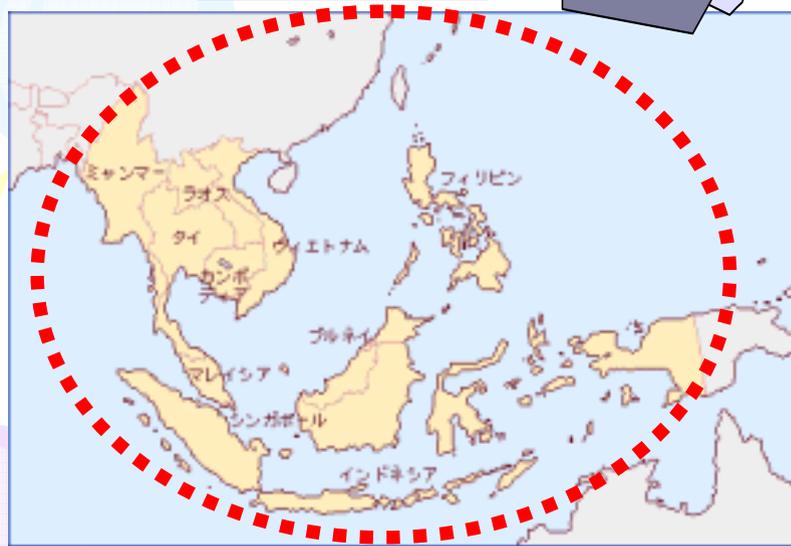
3. Conclusion

Conclusions

- 1. Targets Were Achieved or Will Be Achieved until March 2006 Under Cooperation by Focal Points and ACE.**
- 2. The Achievements Will Be Basis of and Accelerate The Activities for 2006 - 2007**
 - (1) Launching Award System for E. M.**
 - (2) Utilization of Existing Services for Energy Audit and Training**
 - (3) Study to Work Other Functions**

Thank You

Very Much



The Energy Conservation Center, Japan

J07

PROMEEEC for 2005 - 2006 Energy Management Project Summary Workshop



ASEAN Energy Management System - Proposed Basic Plan -

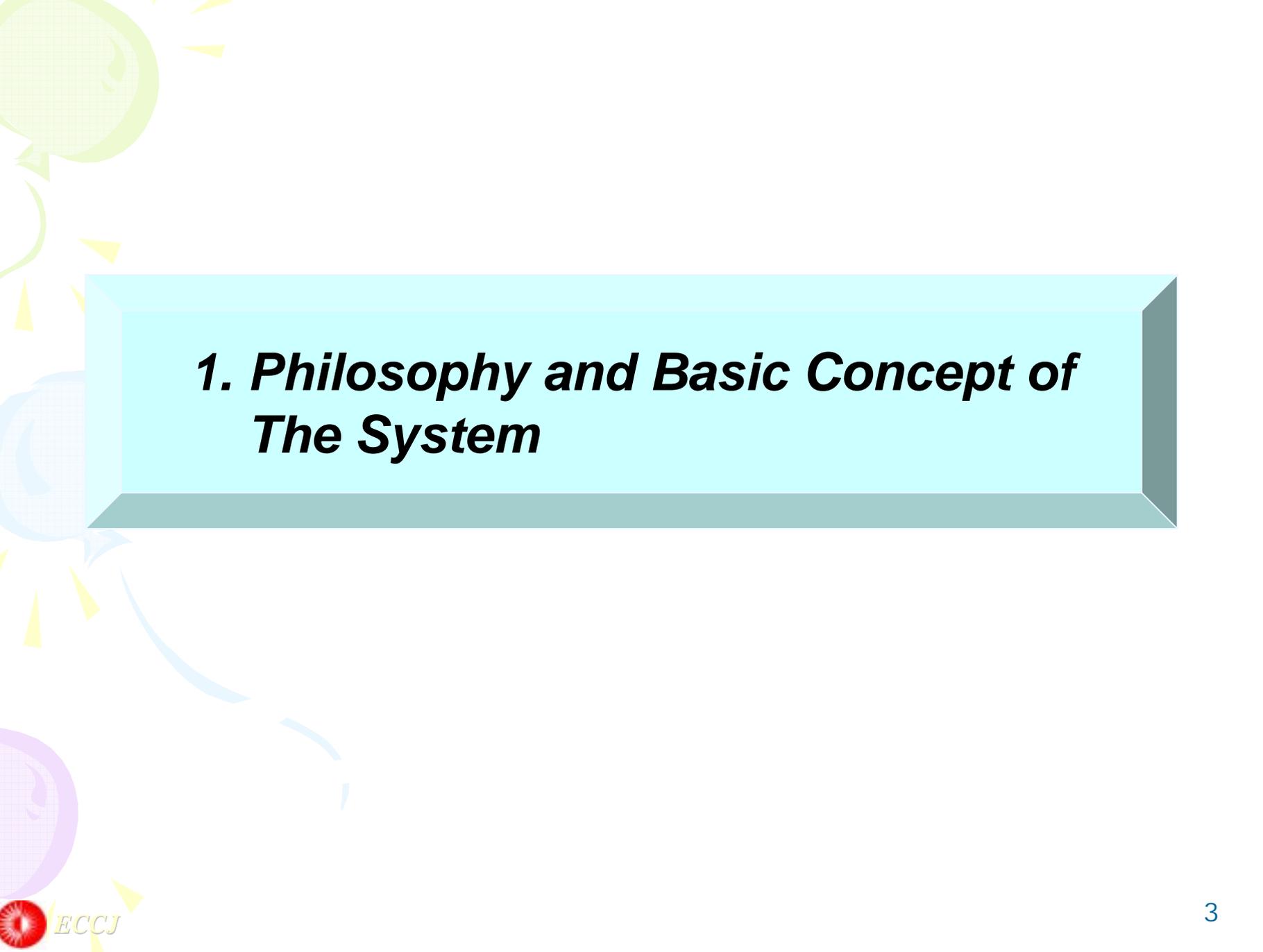
January 27th, 2006

Kazuhiko YOSHIDA

General Manager, International Engineering Dept.
The Energy Conservation Center, Japan

Contents

- 1. Philosophy and Basic Concept of The System***
- 2. Required Infrastructure and Functions for Energy Management***
- 3. Conceptual Plan on Specific Activities***
- 4. General Schedule***



1. Philosophy and Basic Concept of The System

“ASEAN Energy Management System” and Countries’ Respective Systems

“ASEAN Energy Management System”

Regional Effective Support

Each Country System

Services To Be Provided

Information
Energy Audit / Training
Guidance / Advice
etc.

Policy / Law

Implementation
Organization

Private
Activity

Global
Business /
Energy
Market

Cooperation
with Japan,
EU, etc.

..... C B A

Activity for Target 1

Research & Study Workshop in Japan

Evaluation of Current Status

- Summary of Country Report -

10													
9													
8													
7													
6													
5													
4													
3													
2													
1													
No. of Countries	Excellent	Good	To Be Improved	Market Based	Partially Subsidized	Subsidized	Established	Establishing	To Be Established	Very Active	Active	Weak	
	Policy / Regulative Framework			Energy Pricing System			Implementation Organization			Activities by Private Sector			

Utilize Existing Facility
Enhance Private Activities

Activity for Target 3

Local Intensive Survey : Results – 3 (Scope of Services by The Implementing Org.)

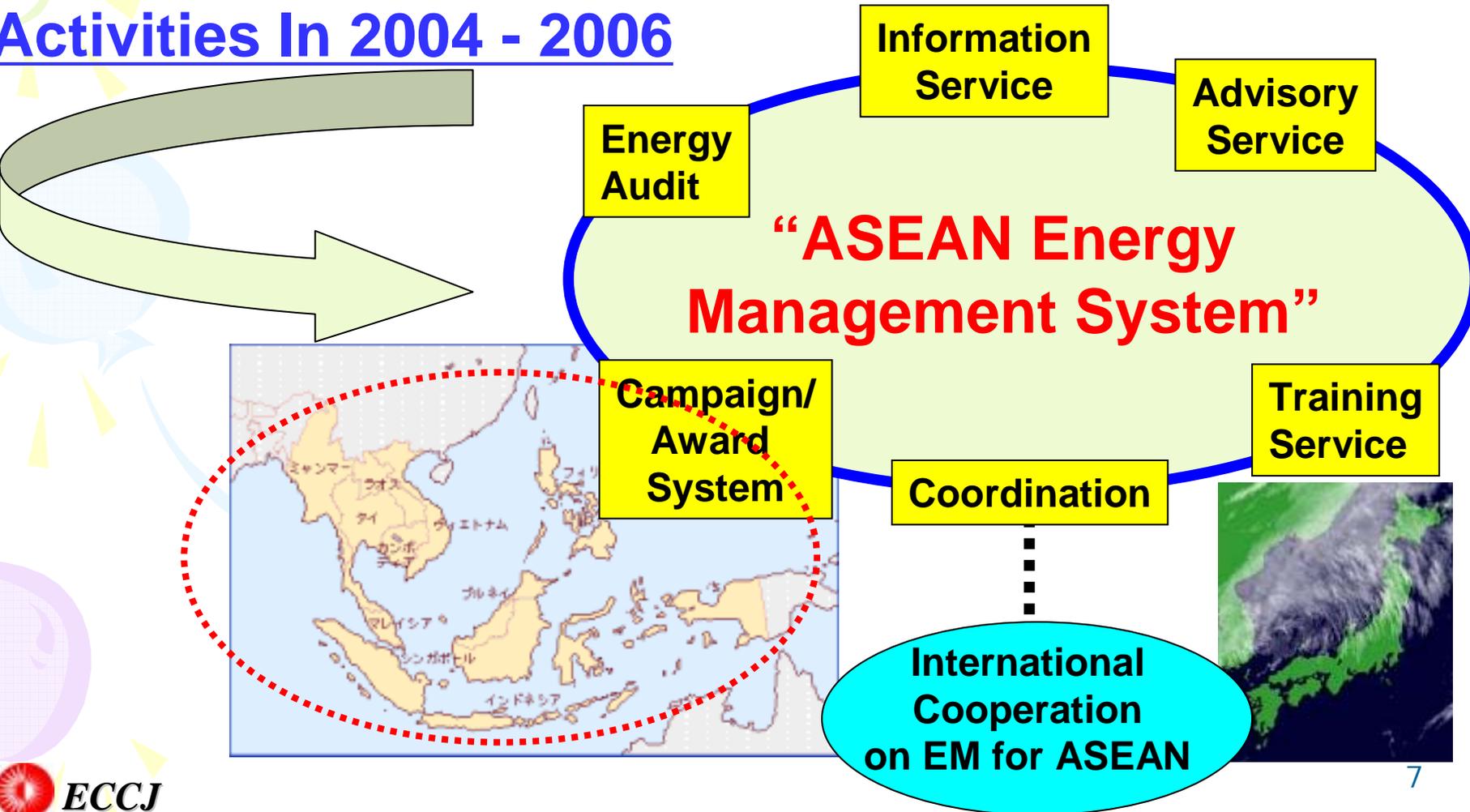
Energy Audit	Training / Education	Other Services	Number of Organizations
			2
			12
			2
			4
		TOTAL	20

Potentiality to Utilize Owned Capability

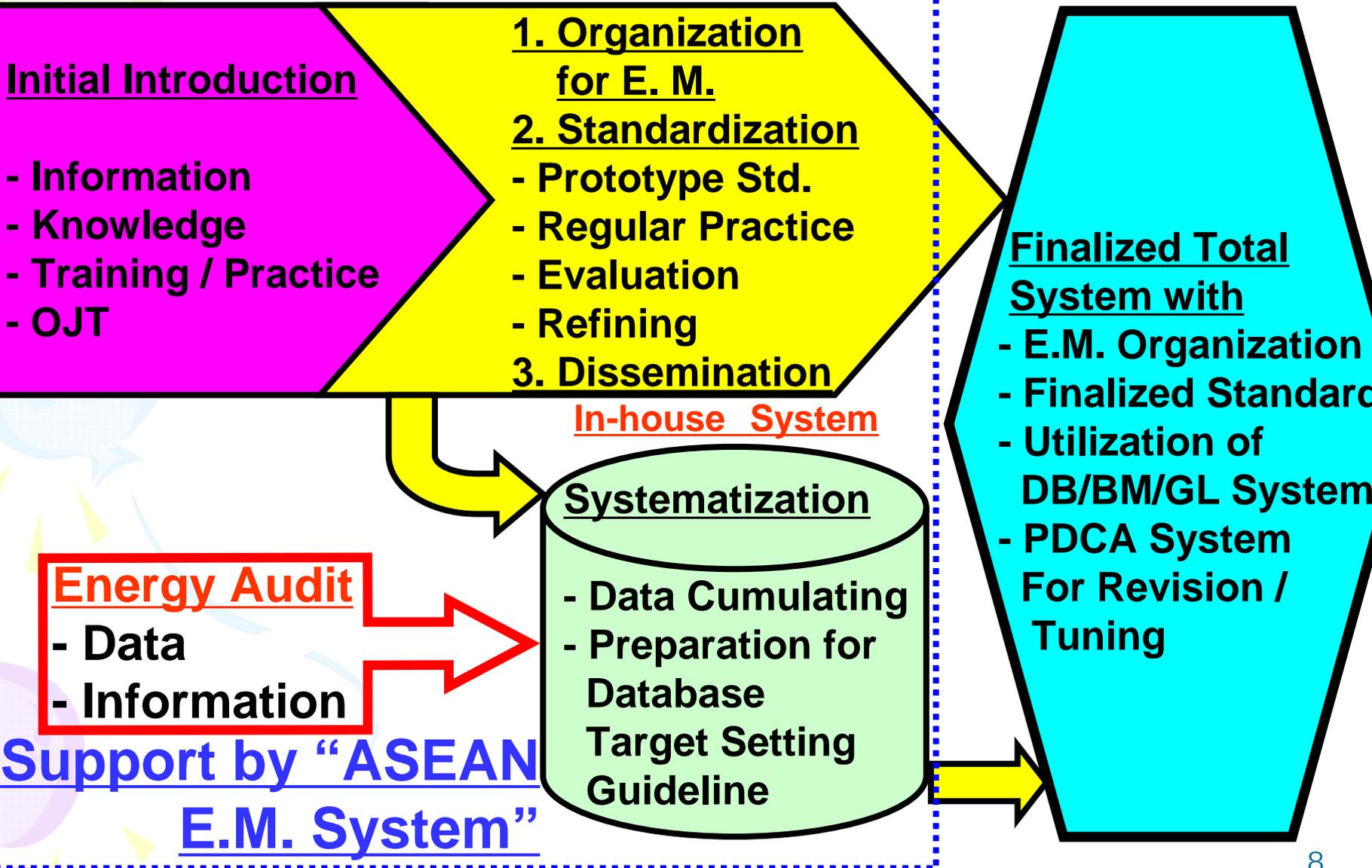
Approach to Develop “ASEAN Energy Management System”

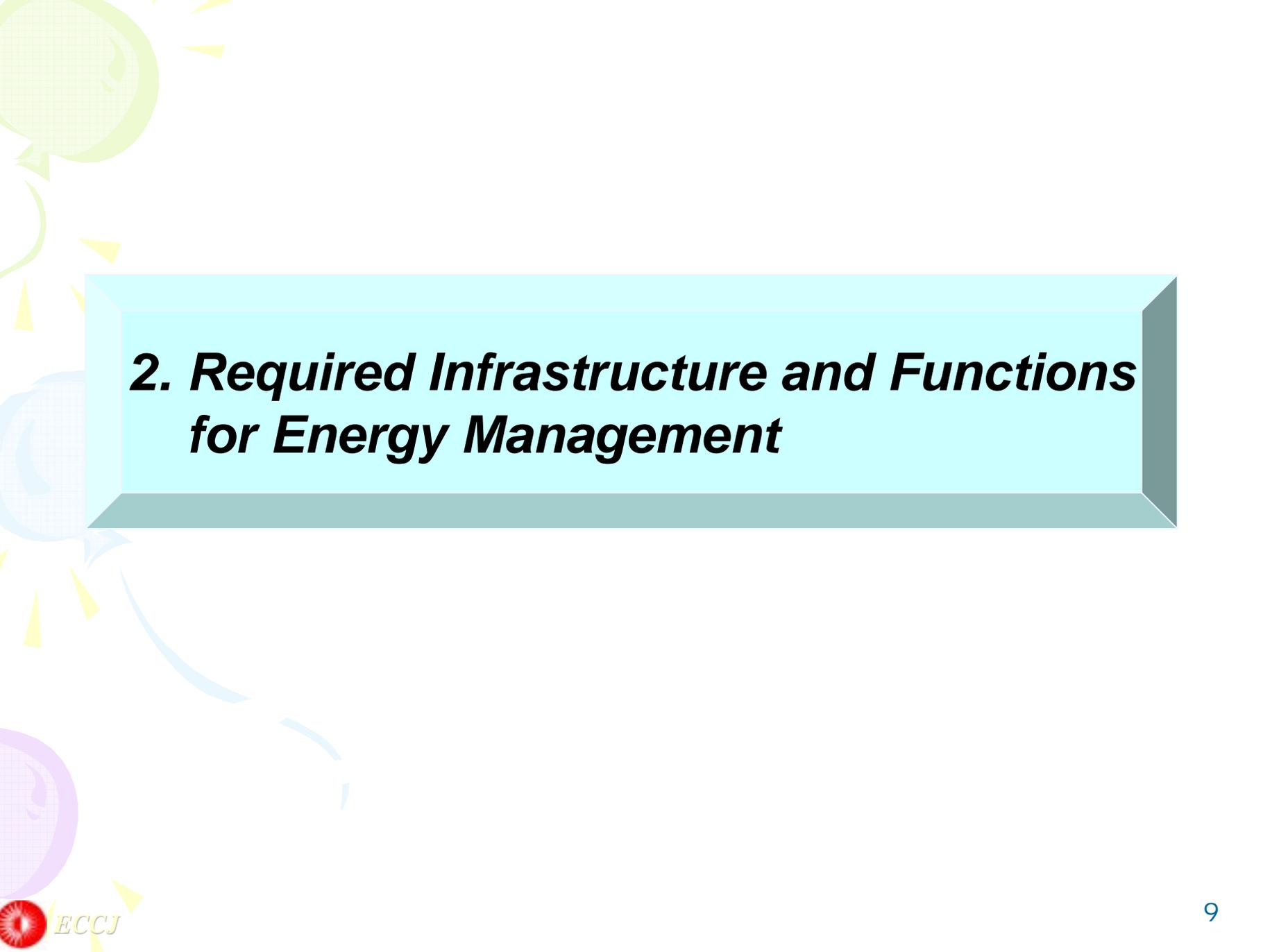
Results of Past

Activities In 2004 - 2006



Steps to Build Sustainability of E. M. in Enterprises





2. Required Infrastructure and Functions for Energy Management

ASEAN Energy Management System

(Requirement-1)

1. Infrastructure for Energy Management and Required Functions

1-1. Building Policy / Directive Framework

- Information and Data to Study**

1-2. Establishing Implementation Organization for ASEAN

- Organizing / Building Capacity**

1-3. Building Environment to Promote EE&C in Private Sector

- Information / Guideline for Voluntary Activities**



ASEAN Energy Management System

(Requirement-2)

2. Required Function

2-1. Sharing Information

2-2. Provision of Facilities and Services

2-3. Scheme and Rule to Work The Functions of Items

2-1 and 2-2



ASEAN Energy Management System - Required Infrastructure - Function Matrix -

Required Infrastructure	Required Function		
	A. Sharing Information	B. Provision of Facility / Service	C. Scheme / Rule to Work A & B
1. Policy and Directive Framework	AREA – 1A	<u>Out of Scope</u>	<u>Out of Scope</u>
2. Implementation Organization (Organization / Capacity)	AREA – 2A	AREA – 2B	AREA – 2C
3. Environment to Promote EE&C in Private Sector	AREA – 3A	AREA – 3B	AREA – 3C

ASEAN Energy Management System

- Required Function Matrix : Activity Status -

Required Infrastructure	Required Function		
	A. Sharing Information	B. Provision of Facility / Service	C. Scheme / Rule to Work A & B
1. Policy and Directive Framework	AREA – 1A Under Study	<u>Out of Scope</u>	<u>Out of Scope</u>
2. Implementation Organization (Organization / Capacity)	AREA – 2A Outline and Reference of Organizations	AREA – 2B Utilization of Services of Existing Org.	AREA – 2C Under study
3. Environment to Promote EE&C in Private Sector	AREA – 3A Practices Technologies ...	AREA – 3B Best Practices Tech. Directory ..	AREA – 3C Award System Info. System ..

Required Function : AREA – A (Information)

Required Infrastructure	Required Function
1. Policy and Directive Framework	A. Sharing Information
2. Implementation Organization (Organization / Capacity)	<u>AREA – 1A</u> (1A1) Policy and Law in Each Country
3. Environment to Promote EE&C in Private Sector	<u>AREA – 2A</u> (2A1) Implementation Organization in Each Country (Capacity / Reference / Scope of Activities)
	<u>AREA – 3A</u> (3A1) Technical Directories for Industry & Building (3A2) Database / Benchmark /Guideline Systems (3A3) Successful Examples for Energy Management (3A4) Procedure for Energy Management in Enterprises (3A5) Technology Suppliers / ESCOs / Consultants

Required Function : AREA – B (Service Provision)

Required Infrastructure	Required Function
1. Policy and Directive Framework	B. Provision of Facility / Service
2. Implementation Organization (Organization / Capacity)	<u>AREA – 2B</u> (2B1) Energy Audit (2B2) Training / Education including Enlightenment (2B3) Others (Consulting / Engineering, etc.)
3. Environment to Promote EE&C in Private Sector	<u>AREA – 3B</u> (3B1) Technical Information (3B2) Data and Information to Study (3B3) Information on Private Activities (3B4) Guideline for Voluntary Activity (3B5) Information on EC Projects by Companies

Required Function : AREA – 2C (Scheme & Rule)

Required Infrastructure	Required Function
2. Implementation Organization (Organization / Capacity)	<p data-bbox="786 299 1516 340">C. Scheme / Rule to Work A & B</p> <p data-bbox="1011 422 1294 467"><u>AREA – 2C</u></p> <p data-bbox="502 573 769 628">(STEP – 1)</p> <p data-bbox="502 650 1779 765">(2B1C1) Develop System / Rule to Utilize Existing Facilities including to Give Related Information</p> <p data-bbox="502 787 1667 902">(2B1C2) Organize ASEAN-Japan (A-J) Expert Team (For Coordination including Advice)</p> <p data-bbox="502 930 769 985">(STEP – 2)</p> <p data-bbox="502 1007 1639 1122">(2B1C1) Expansion of Existing Facilities (or) Establishment of New Facility for ASEAN</p> <p data-bbox="502 1144 1779 1259">(2B1C2) Training of Auditors and/or Trainers for ASEAN by A-J Team</p>

Required Function : AREA – 3C (Scheme & Rule)

Required Infrastructure	Required Function
3. Environment to Promote EE&C in Private Sector	<p data-bbox="784 251 1516 296">C. Scheme / Rule to Work A & B</p> <p data-bbox="1008 374 1294 422"><u>AREA – 3C</u></p> <p data-bbox="502 529 769 581">(STEP – 1)</p> <p data-bbox="502 605 1749 861">(3B/C1) Develop of System to Collect and Disseminate Information (Award System for Best Practices in E.M. and Information of Suppliers including ESCOs for EC Technologies, etc.)</p> <p data-bbox="502 883 1767 1002">(3B/C2) Utilize Technical Directory and Database etc. Developed by Projects (Industries & Buildings)</p> <p data-bbox="502 1024 1612 1144">(3B/C3) Develop Effective Handbook(s) (Ex. Manual Based on SGA / TPM / TQM)</p> <p data-bbox="502 1166 1767 1211">(3B/C4) Organize A-J Taskforce for Advice / Assistance</p>

Required Function : AREA – 3C (Scheme & Rule)

Required Infrastructure	Required Function
3. Environment to Promote EE&C in Private Sector	<p data-bbox="784 268 1517 312">C. Scheme / Rule to Work A & B</p> <p data-bbox="851 392 1452 444"><u>AREA – 3C (Continued)</u></p> <p data-bbox="502 546 769 598">(STEP – 2)</p> <p data-bbox="502 621 1781 738">(3B/C1) 1) Implement Award System for E.M. / Build System to Disseminate Collected Information</p> <p data-bbox="689 760 1739 878">2) Increase Companies for Cooperation (Through Activities for PROMEEC Projects)</p> <p data-bbox="502 900 1654 1018">(3B/C2&3) Advisory Service by A-J Expert Team (Including Training of ASEAN Advisors)</p>



3. Basic Plan on Specific Activities

1. Award System for Best Practices in Energy Management for Major Industries and Buildings

Purpose

Collect and Disseminate Successful Cases of Energy Management in Factories and Buildings

Outline of Procedures

- 1. Organize Judging Committee & Preparation**
- 2. Call for Application in Each Country**
- 3. Select 2 Local Winners (Industries & Buildings)**
- 4. Determine ASEAN 2 Winners and 2 Runner-Ups**
- 5. Publish through Media Such as Website**

Schedule for 2006 - 2007

- 1. Call for Application : April 2006**
- 2. Determine ASEAN Winner : March 2007**

2. Utilization of The Existing Implementing Organizations for Energy Audit and Training (1)

Purpose

Utilize Services Owned by Existing Implementing Organization for Energy Audit in Factories and Buildings and for Training

Benefits for Customers

- 1. Most Cost Effective and Realistic Solution to Requirement**
- 2. Possible to Choose An Suitable Organization**

Benefits for Service Providers

- 1. Expand Business**
- 2. Increase Availability of Facilities and Manpower**
- 3. Possibility to Enhance Facilities / Capacity**

2. Utilization of The Existing Implementing Organizations for Energy Audit and Training (2)

Basic Procedures

(Development of Detailed System will Be Studied Further)

- 1. Open Tender through Website**
- 2. Direct Contact and Negotiation between Customers - Service Providers**
- 3. Consideration on Intermediate Coordination / Advice**

Outstanding Issue for Consideration

Measures to Assure Quality of Service Providers

3. Dissemination System of Technical Directories for Major Industries and Buildings

(Status)

Under Development through Projects for Major Industries & Buildings and Edition by ACE

- (1) Available for ALL Users**
- (2) Wider Coverage of Technology and Application including Practice for EE&C**
- (3) Flexibility to Update and Expand**
- (4) Various Possible Access to Directory**

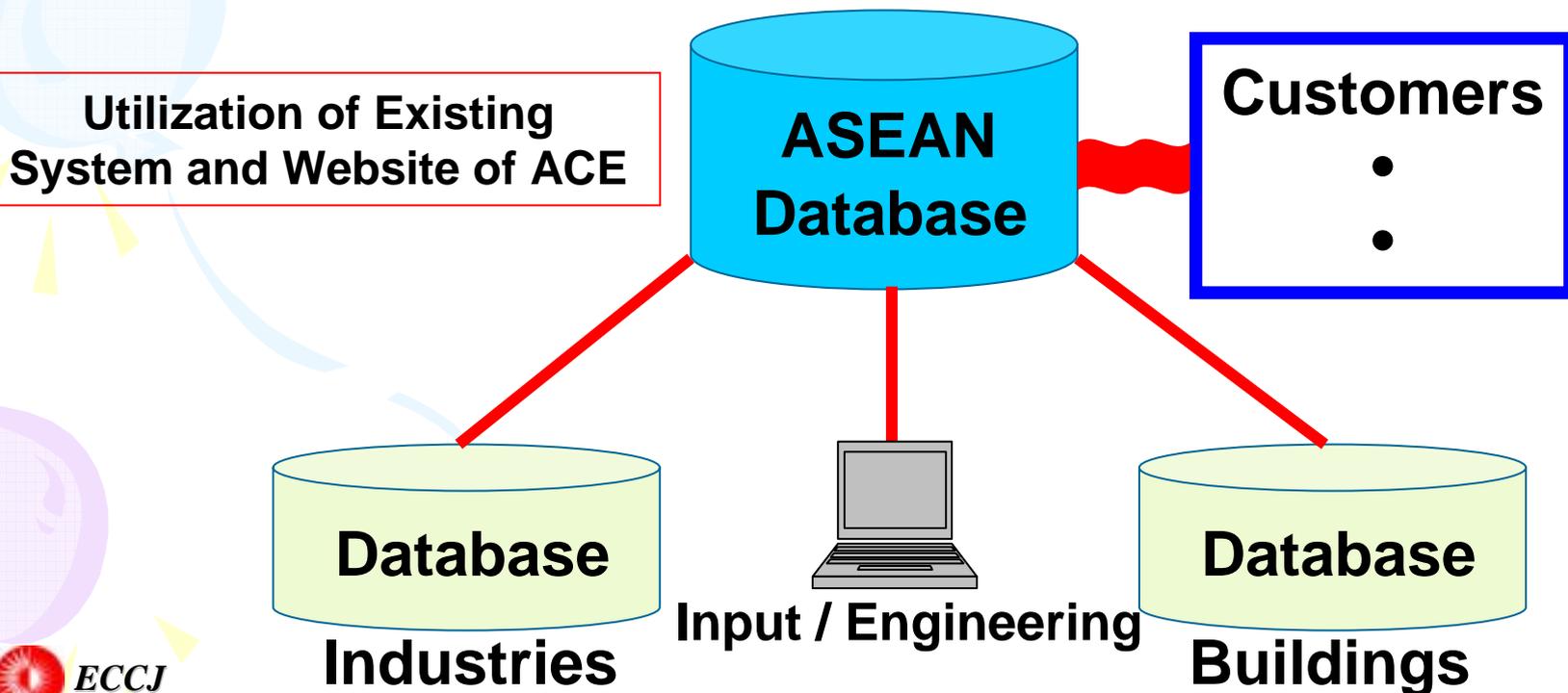
User Friendly !



4. Development of System for Database

(Status)

Under Development through Projects for Major Industries & Buildings with Design by ACE/ECCJ



5. Development of TEM* Handbook for ASEAN Philosophy and Concept

(Area / Purpose)

- (1) Industry Sector : Inter-Industry to Individual Industries
- (2) Promote Companies' EC Activities by All Participation
Management (Owner / Managers)
Engineers and Workers

Total Energy Management (TEM*) Handbook

(Features)

- (1) Practice&Business - Oriented (than Technical)
- (2) User Friendly Guidance
- (3) Expandable Contents / Easy to Update



(Expected EC Potential) 10 – 15% (By No/low Cost)

5. Development of TEM Handbook for ASEAN Basic Contents (Case Developed for Thailand)

I. Purpose and Background of TEM Handbook

Introduction / Purpose / Usage / Importance of Energy Management

II. Strategic Planning for EC by Participation

III. Implementation Steps of EC

IV. Successful Examples

V. Additional Explanation on SGA

**CORE
PARTS**



(Basis) Small Group Activity (SGA) & TQM / TPM

VI. Appendix (Access to the Existing Various References)

Energy Statistics and Policy Information

List of References (Technical Manual / Law / Training Course, etc.)

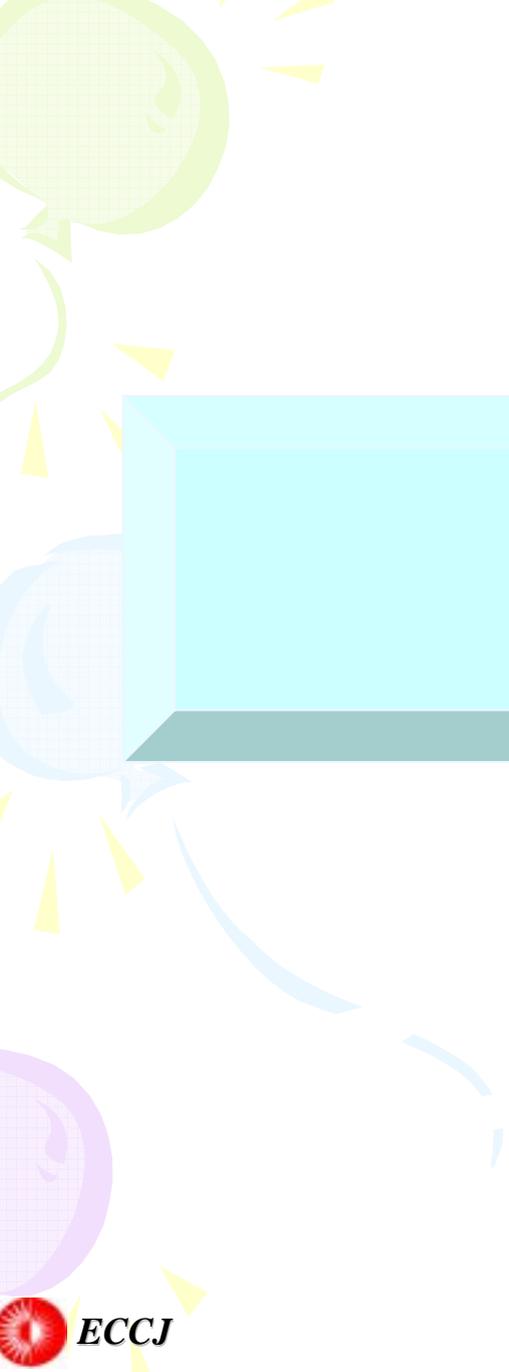
6. Other Information Services

1. Directory of ESCOs

- 1) Company Name or Association**
- 2) Reference of Business**
- 3) Contact**

2. Information on Suppliers of Technology / Equipment for EE&C

- 1) Company Name**
- 2) Business Category & Reference of Business**
- 3) Contact**



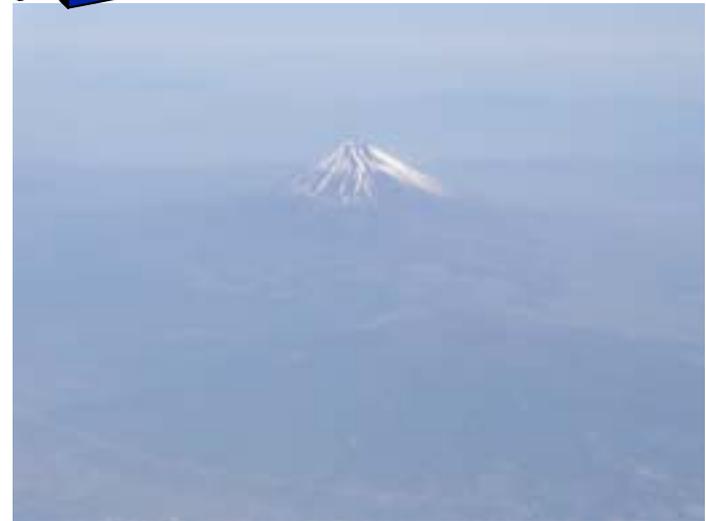
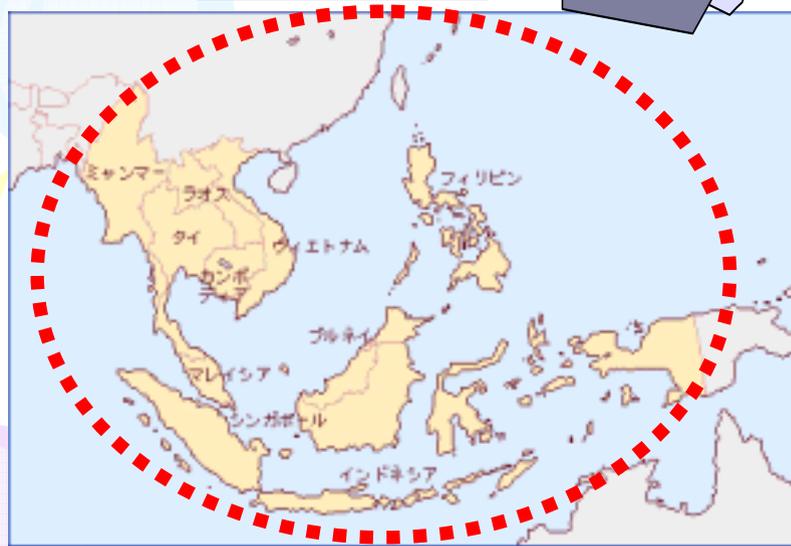
4. General Schedule

4. General Schedule

Phase	Main Activities	2004	2005	2006	2007	2008	After 2009
Phase - 1 Prepare Basic Functions	Investigation / Study Concept						
	Develop Specific Plan						
	Prepare / Work Functions						... 
	Verification Result						
Phase - 2	Study / Prepare / Add Functions					... 	

Thank You

Very Much



The Energy Conservation Center, Japan

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