Report/Fiscal Year of 2010

Project on Measures for Rationalization of International Energy Use

Project on Human Resources Development for Energy Conservation

"Project on Improvement of Base for Energy Management in ASEAN Countries"

ACTIVITY REPORT

March 2011

The Energy Conservation Center, Japan

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Summary

In spite of impact of the sudden depression originating from the U.S. financial crisis, the ASEAN countries have been showing an economic growth. Following this, their energy consumption is also increasing, and in the future it is expected to grow even further. It is believed that more effective use of energy in these countries would contribute to the global warming prevention and the environmental preservation activities.

This project is one pillar of the ASEAN energy cooperation that is authorized at the Minister of Energy level on the ASEAN side as PROMEEC (Promotion of Energy Efficiency and Conservation), which currently comprises the three projects of "Major Industries", "Buildings", and "Energy Management System".

The Major Industries and Buildings energy conservation promotion projects are entering their eleventh years, while the Energy Management System project is beginning its seventh year. The activities of the related persons in the ASEAN countries, including our counterpart organization, the ASEAN Centre for Energy (ACE), have also become increasingly active, and the projects have become firmly established. On the other hand, the price of crude oil, which had been continually rising, fell after hitting peak at US$147 a barrel, and is now on an upward trend again after fluctuating at around US$70 a barrel. However, since the amounts of recoverable reserves are limited, the awareness that crude oil prices will continue to rise over a long term is becoming established. In practice, the rise in energy prices threatens companies' competitiveness, and a further enhancement of energy conservation promotion is being sought. In view of this change, while it is a fact that the PROMEEC Project has been building an energy conservation promotion base and contributing to improved awareness through implementing its activities, it has become necessary to implement activities at an even higher level to build a base that is capable of certainly promoting energy conservation.

Against the background described above, this project with the various ASEAN countries in the current fiscal year has been positioned as the third stage, working even harder towards the implementation and dissemination of the results that have been achieved up till now through self-help efforts. That is, in a continuation from the previous fiscal year, on the base of actual results and outcomes of implementing energy audits in various types of factories and buildings in the ASEAN countries carried out in the past, we are aiming to establish the base and educate the human resources required to implement and disseminate actual improvements centered on improvement measures that are discussed and proposed in each country.

In addition to the Major Industries and Buildings project activities, this project was started in 2004 based on an agreement obtained through discussions held with representatives of each of the ASEAN countries in order to more effectively achieve the above targets in an aim to improve and enhance the Energy Management System which will become the core for promoting energy conservation in each ASEAN country. With the objective of rationalizing this project, first the basic functions of the "ASEAN Energy Management System", which can be commonly used in the 10 ASEAN countries, were to be constructed taking around five to six years, and this fiscal year is positioned as the year in which this objective would be realized.

Accordingly, in this fiscal year, based on the basic plan of the "ASEAN Energy Management

System", the building and operation of the functions that should be included have been started as follows while maintaining links with the Major Industries and Buildings projects, and the results described below have been achieved.

1. Implementation of an Award System that has the purpose of making information sharing relating to the Best Practices of Energy Management, and announcing of awarded case studies
   - ☛ The fourth Energy Awards were completed in July 2010. 18 case studies were received as applications from seven countries, and 13 case studies received awards.
2. Review of energy management tools (Technical Directory, In-house Database, Handbook, etc.) and construction and operation of a dissemination system
   - ☛ Dissemination of the Energy Management Handbook and creation of related handbooks
3. Construction and operation of an existing implementing organization usage system that can provide energy audits and training
   - ☛ Registration of implementing organization in the "Online Energy Information System", a search system between the implementing organizations and the clients in the ASEAN region
4. Enlargement of ASEAN Network of Cooperators
   - ☛ Through providing advice to participants in Seminar-Workshops and visits to companies, increase the number of members in the Network of Cooperators.

Specifically, the following activities were implemented, and the activities were smoothly completed, achieving the targets described above.

- ♦ Intensive Seminar-Workshops were held in five ASEAN countries, and in addition, visits were made to some companies and organizations. The basic plans of this project and the latest ASEAN Energy Management System were explained to related persons, and in addition to gathering opinions, we called for participation in this project and the use of related programs and tools. Furthermore, as described below, training was given in five countries on how to use the Energy Management Handbook.
- ♦ Operation of "ASEAN Award System of Best Practices in Energy Management for Industries and Buildings"

  The award system that was planned for the popularization of the best practices in energy management in Industries and Buildings sectors in the various ASEAN countries which have been collected starting in fiscal year 2006 was smoothly operated, and the fourth Energy Awards were held.

  The judging committee (Board of Judges (BOJ)) meeting was held on June 8-9, 2010, and from among the 18 case studies from seven countries that were collected through applications for the third Energy Awards case studies, a total of 13 cases were selected, including Best Practice Awards to three applications each in the Industries and the Buildings categories, one Best Practice Award in the Special Submission, and the outstanding case awards to five other cases in the Industries and Buildings categories. These awards were presented at a ceremony during the AMEM Meeting (ASEAN Ministers Meeting on Energy) held in July 2010. Following this, in a plan to realize the wide dissemination of these award-winning case studies, details were released on the ASEAN Centre for Energy website.

Following this, applications for the fifth Energy Awards started from January 2011. At the implementation of the fifth application, analysis was carried out of the results of the fourth, and the following points were discussed and confirmed at a workshop held during the Research Forum in Japan in November 2010. The aim was to improve the collection of case studies that will result in an even higher dissemination effect.

(1) It was decided to set a new category of "Special Submission" as an award for a single improvement activity or a single project. Among definitions, "significant innovation" was changed to "innovation/successful best practices/excellent cases" to dilute the meaning of the definition.

(2) From fiscal year 2010, the awards were given to applications in the two categories: large scale factories and medium to small scale factories, both in Industries and Buildings. Classification standard for Industries, which was a consumption of 10 million MJ, was changed to 30 million MJ a year.

♦ Establishment and partial execution of a dissemination scheme for relevant energy management tools (Technical Directory, In-house Database, Handbook, etc.)

The Energy Management Handbook was finally completed in January 2009. In addition, the Technical Directory and the In-house Database, which were developed following the Major Industries and Buildings Projects, were set as energy management basic tools together with the Energy Management Handbook, and these were disseminated during the Intensive Seminar-Workshops and Training in each country. Collection method and the contents of the Technical Directory and the In-house Database were reviewed.

Translation of the Energy Management Handbook into Vietnamese was implemented by pioneer companies, but the government had troubles in publishing and disseminating it. Cambodia, Indonesia and Myanmar, which we visited this fiscal year, called for financial support for the translation into local languages.

♦ Establishing the Online Energy Information System

Aiming to achieve the wide utilization of existing implementing organizations in the ASEAN countries, implementing organizations registered in the search system of implementing organizations named "Online Energy Information System", which was called "Cyber Search System" until last year. Thanks to the efforts of Focal Points, the total increased to 17. Before the registration of the customers, the system will be promoted to potential customers to encourage implementing organizations in each country to register. Again there was a discussion on the name of the system and it was changed to "ASEAN Energy Management Service", starting in the next fiscal year.

♦ Investigation of "ASEAN Energy Management System (Step-2)" Basic Plan

Based on the activity outcomes and actual results, basic functions of the "ASEAN Energy Management System" have almost been established as planned, and the Step-1 System has begun operations. Based on the evaluation and with the aim of making the system more effective, we intended to add new functions to develop it into the Step-2 System. But there was delay in the progress due to other issues to be solved. For the next fiscal year, the Step-2 System will be launched only when the Step-1 System has been completed.

Note that in the project in the current fiscal year, the field activities started from the Board of Judges (BOJ) meeting which selected the fourth Energy Awards case studies in June 2010. However, the Inception Workshop (Three Joint Projects) held in July 2010 in order to finalize the project plan and confirm the implementation preparations essentially marked the start of activities. Afterwards, the activities were implemented in five countries, and the activity results and outcomes were shared jointly among the representatives from each country at the Summary and Post Workshops (Three Joint Projects) that were held in the middle of February 2011. In addition, the policies of future activities after next fiscal year were discussed at the end of the workshops.

The specific activities of this project in the current fiscal year are as described below.

1. Board of Judges: June 8th-June 9th, 2010 (trip from June 6th-June 12th)

The nine members of the Evaluation Committee gathered in Hanoi, Vietnam, to evaluate the 18 applications from seventh countries, and to select the awardees in Industries and Buildings.

2. Inception Workshop: July 1st-July 2nd, 2010 (trip from June 29th to July 3rd)

"Inception Workshop on Promotion of Energy Efficiency and Conservation (PROMEEC) (Major Industry, Building and Energy Management), SOME-METI Work Program 2010-2011" (held in Singapore, common to for Industries and Buildings). There was a pre-meeting with the ASEAN Centre for Energy.

Nineteen persons gathered, including those from ASEAN, the ASEAN Centre for Energy (ACE), and the Energy Conservation Center, Japan (ECCJ), and discussed the following subjects.

Opening Remarks (representatives from the host country)

Session 1: Buildings Project Implementation Plan

Session 2: Major Industries Project Implementation Plan and Joint Activity Plan

(Joint activity: Development of Building and Major Industries In-house Database and Technical Directory)

Session 3: Energy Management Project Implementation Plan

The Energy Management Project in the current fiscal year was planned as shown below. In the plan, requests were received from seven countries, and it was determined that the project to be implemented in five countries: Vietnam, Myanmar, Brunei Darussalam, Cambodia and Indonesia (in the order of planned visit). The activity basically consisted of the following three:

(1) Activity-1: Intensive Seminar-Workshop (Day 1)

(2) Activity-2: Training Activity utilizing Energy Management Handbook (Day 2)

(3) Activity-3: Visits to factories & building and counseling on the introduction, use, follow-up, and/or new introduction of Energy Management Handbook (Day 3)

3. 1st Site Activities: August 25th-August 27th, 2010 (term of the trip: August 24th-August 28th)

Initially, the activities were scheduled to be held in Vietnam and Myanmar. But the schedule for Myanmar was postponed to December. Therefore, it was held in Vietnam only.

(1) Intensive Seminar-Workshop

Project activities, the basic plan of the "ASEAN Energy Management System" including functions and tools and the analysis of ASEAN Award System of Best Practices in Energy

Management for Industries and Buildings in current fiscal year were presented. The team members requested the participants to join in the project activities and to utilize the program and tools prepared in this project. Study of the best practices, which is to be held in the group work of ISW conventionally, was not implemented this fiscal year as it is similar to the contents of the group work scheduled on the next day. Session 3 was for the presentation on the Awareness & Financing by the host country, ECCJ and ACE, but there were no reports from the host country.

(2) Training on Energy Management Handbook Activities

Training was implemented concerning the use of the Energy Management (EM) Handbook. In addition to a lecture on the contents of the Energy Management Handbook, group activities were carried out using case studies, one from Vietnam (Ocean Park Building: Building) that received an award and another from Ha Noi 19 May Textile Company (Industry), which did not win an award.

(3) Visits to concerned enterprises and organizations

Visit to a factory wishing to introduce the EM Handbook

The team visited two companies, Hanoi Rubber Joint Stock Company and Ocean Park Building that wish to newly introduce energy management tools such as EM Handbook. Following the site inspection, the team exchanged opinions and provided advice to improve energy management.

4. 2nd Site Activities (October 11th-October 25th, 2010) (term of the trip: October 10th-October 26th)

Visited countries: Brunei Darussalam, Cambodia and Indonesia (three countries)

(1) Intensive Seminar-Workshop

Project activities, the basic plan of the "ASEAN Energy Management System" including functions and tools and the analysis of ASEAN Award System of Best Practices in Energy Management for Industries and Buildings in current fiscal year were presented. The team members introduced analysis on the best practices of the ASEAN Best Practices of Energy Management of current year and requested the participants to participate in the project activities and to utilize the program and tools prepared in the project. As in Vietnam, group work was not implemented in the ISW. The host country, ECCJ & ACE were supposed to make presentations on Awareness & Financing, the theme for the Session 3, but Cambodia was the only nation that presented a report.

(2) Training on Energy Management Handbook Activities

In countries other than Brunei Darussalam, training consisted of a detailed explanation on the ASEAN EM Handbook and the lecture on how to use it. Brunei Darussalam has already established its own Energy Management Guide based on the ASEAN EM Handbook. A professor at Universiti Brunei Darussalam, one of the authors of this Guide, introduced it in the training again in this year. Another EM tool "A Basic Guide to Energy Audit for Building" was also introduced by a professor at Institu Teknologi Brunei. In the study of best practices, each country has chosen two best practices of the ASEAN Award in advance to use them in the group work.

(3) Visits to concerned enterprises and organizations

Visits to factories wishing to introduce the EM Handbook

The team visited three locations in Brunei Darussalam, two in Cambodia and one in Indonesia that wish to introduce the EM tools such as the EM Handbook. They were the Ministry of Development, Baiduri Bank and Datastream Technology in Brunei Darussalam, Sofitel Angkor Hotel and Le Meridien Angkor Hotel in Cambodia, and South Pacific Viscose in Indonesia. After the site tour, the team provided advice and exchanged opinions regarding the promotion of energy conservation at the enterprise/organization, while encouraging them to use the EM Handbook and participate in the ASEAN Energy Award.

5. 3rd Site Activities: December 14th-December 16th, 2010 (term of the trip: December 11th-December 18th)

This was the first time that energy management project was implemented in Myanmar. The schedule, which was initially set in August, was postponed to December. There was concern over the schedule as it was immediately after the general election in November, but actually there were no problems.

(1) Intensive Seminar-Workshop

Project activities, the basic plan of the "ASEAN Energy Management System" including functions and tools and the analysis of ASEAN Award System of Best Practices in Energy Management for Industries and Buildings in current fiscal year were presented. The team members introduced analysis on the best practices of the ASEAN Award System of Best Practice in Energy Management of the current year. This was the first EM project implemented in this country, and the participants, although they knew little about the functions, tools and concept of energy management, seemed to be working hard in the training. The host country, ECCJ & ACE were supposed to make presentations on Awareness & Financing, the theme for the Session 3, and there was a report from the host country Myanmar.

(2) Training on Energy Management Handbook Activities

Training was given on how to use the EM Handbook. Along with a lecture on the contents, two Best Practices that received the award (Greenhills Shopping Center and Thai-German Ceramic Industries) were introduced in the group work. The team highly evaluated the participation of the Focal Point from the MOI-2 in the group work and his proactive attitude.

(3) Visits to concerned enterprises and organizations

Visits to factories wishing to introduce the EM Handbook

The team visited Multi-Purpose Diesel Engine Factory that wished to introduce the EM tools such as the EM Handbook. After the site tour, the team provided advice and exchanged opinions regarding the promotion of energy conservation at the factory. This state-owned company recently started operation and the production volume is small, with many machinery not in operation. However, we learned that a person from this firm was present at the multinational training held in Japan the other day (MTPEC11) and established a team for energy conservation and launched activities soon after returning to Myanmar. The team encouraged the participants to make further efforts.

6. Research Forum in Japan: November 9th-November 11th, 2010

Ten concerned people, including the members of BOJ for the ASEAN Award System of Best

Practice in Energy Management for Industries and Buildings gathered and discussed.

(1) Improvement for the Step-2 of the "ASEAN Energy Management System"
(2) Improvement of the operation policies and the evaluation guidelines on the ASEAN Award System of Best Practice in Energy Management

As a result, a consensus was reached on the proposal of functions related to the Step-2 System of the ASEAN Energy Management System, and at the same time, there were suggestions for further improvement. Also, a concrete plan for improvement on the operation policy of the ASEAN Award of Energy Management was formulated after the review of concerned issues in the BOJ discussion for the current year. The policy to change the operation policy from fiscal year 2011 was confirmed among the participants, which will be implemented after consultation with the BOJ of ASEAN.

7. Summary & Post Workshop: February 16th-February 17th, 2011 (term of the trip: February 14th-February 18th)

Participated in the "Summary and Post Workshop on Promotion of Energy Efficiency and Conservation (PROMEEC) (Major Industry, Building and Energy Management), SOME-METI Work Program 2010-2011" (common to Major Industries and Buildings; held in Bangkok, Thailand).

Twenty people from ASEAN nations, the ASEAN Centre for Energy (ACE) and the ECCJ gathered for the following summary and consultation. Due to scheduling problems, there were no participants from Brunei Darussalam, Indonesia, Malaysia and the Philippines.

Opening Remarks by the host country, etc.
Status of creating the APAEC 2010-2015 and key points
Confirmation of the basic activity policies for the Phase-3
Summary Workshop
Session 1: The results and achievements of the PROMEEC (Major Industries)
Session 2: The results and achievements of the PROMEEC (Buildings)
Session 3: The results and achievements of the PROMEEC (Energy Management)
- Report on the results of activities for this fiscal year from each country and summary by ECCJ
- Policies of activities of the next fiscal year and onward: It was changed to consider functions of the Step-2 after the finalization of the Step-1.

Post Workshop
- Overall evaluation of results and basic directions for future activities in the Phase-3
- 2010-2011 Basic Implementation Plan for the three projects

Based on the evaluation of actual results up to the current fiscal year, requirements for the Phase-3 were clarified. At the same time the participants agreed on the Basic Implementation Plan that placed great importance on "human resource development" for the next fiscal year as well. Based on this result, it was decided that countries that wish to implement activities next fiscal year, will be requested to prepare proposals for activities, including requests.

While providing support for establishing the base of sustainable energy conservation activities in ASEAN nations, the PROMEEC Project Phase-3 activities have been launched on a high level

seeking implementation and diffusion of energy management through further self-help efforts of each country.

As a result, the Step-1 System has almost been completed that has the basic functions for “ASEAN Energy Management” shared in ASEAN, and the base for smooth operation has been established. The dissemination activities of the key energy management tools were also active, and the ASEAN Award System of Best Practice in Energy Management for Industries and Buildings was carried out without troubles. In addition, we have achieved many fruitful results, including the expansion of the network of cooperation among concerned parties, companies, and organizations.

Finally, we would like to extend our heartfelt appreciation for the full cooperation of the parties concerned, including those from the ACE and other international institutions, in making this project possible.

I. Objectives and Background of the Project

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

This project was first launched in fiscal year 2000 and is known in the ASEAN as the PROMEEC Project. 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) consisting of members from 10 countries. It comprises three projects: the Major Industries Energy Conservation Promotion Project (PROMEEC (Major Industries)), the Building Energy Conservation Promotion Project (PROMEEC (Buildings)), and Project on Improvement of Base for Energy Management the ASEAN (This project: PROMEEC (Energy Management)).

This project was started in fiscal year 2004, four years after the other two projects, and has contributed to establish the ASEAN Energy Management System that is essential for promoting energy conservation in the industry and building sectors in the ASEAN region. Also, it provides technical and practical support for forming a mechanism to realize improvements. That is, it supports energy conservation measures on the ASEAN side by strengthening energy management, particularly in the fields of industries and buildings, in the ASEAN countries, and, as a result, it targets at promoting energy and environmental conservation measures of the ASEAN region.

This project is for establishing the Energy Management System essential for energy conservation in industry and building sectors, and provides support for improvements of the system from a technical and operational point of view.

The ultimate objective of this project is to establish and operate the ASEAN Energy Management System shared in the entire ASEAN region, and by utilizing this, contribute to establishing a sustainable foundation for energy conservation in the industry and building sectors.

In order to achieve this goal, actions emphasizing the following points are being taken:

1. Make sure that the ASEAN Energy Management System has the following key functions. The system should be easy to use and understand for the users.
   - ♠ Supply of useful information
   - ♠ Provision of services such as energy audits and training
   - ♠ Rules and systems to appropriately and smoothly operate the above

   Moreover, specific and effective sub-systems, programs and tools should be prepared in relation to the functions above.

2. Effective link between the major industry and the building sectors regarding energy conservation promotion projects (share information and disseminate results)
3. Create and expand the “ASEAN Network of Cooperators”, mainly from the ASEAN region, to popularize the ASEAN Energy Management System, improve and operate the system continuously.

The points described above should be pursued from a long-range standpoint. The Step-1 System, providing the basic functions and minimum programs, tools, and sub-systems required was established over a 5-6 year period and it has been completed this fiscal year and operation started. Based on the evaluation given to the operational and dissemination activities, the Step-1 will be improved. At the same time, the Step-2 System with additional functions and programs will be established and launched.

Step-1 System that has almost been completed in the current fiscal year is being operated as shown below. In addition, activities for the dissemination and application of this system were implemented.

(The first stage): Complete

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

The plan will be reviewed as appropriately, if necessary.

(The second stage): Step-1 System is complete. Start consideration on introducing the Step-2 System.

Developing the ASEAN Energy Management System and its operation method

(The third stage): Step-1 System is complete.

Operation and improvement of the ASEAN Energy Management System by the ASEAN countries

Programs required for the basic functions, basic tools for energy management including the Energy Management Handbook have been completed. In addition, sub-systems like information system to disseminate Best Practices of Energy Management gathered through the award system, and the reciprocal search system “Online Energy Information System” between the energy management organizations and the customers have been put into operation.

At the same time, a plan on the site activities in five countries to popularize the system in the ASEAN region for use by concerned parties has been established and implemented. In addition, the ASEAN Award System of Best Practices in Energy Management for Industries and Buildings case studies has completed its fourth awarding with great success. Improvement policies from an operational point of view were also specified and the Board of Judges from the ASEAN region discussed a plan to determine the implementation rules and the evaluation policies.

It took time to carry out the initial registration of implementing organizations in the Online Energy Information System, but the registration of the implementing organizations has almost been completed in the current fiscal year. However, the registration of customers is yet to be

completed, and the trial operation has been carried over to the next fiscal year. We called for more registration in the system to the ASEAN countries.

This project was organized out by the Energy Conservation Center, Japan (ECCJ), implemented mainly by four experts in charge as shown below. The ASEAN Centre for Energy (ACE), located in Jakarta, Indonesia, cooperated in collaboration with the Focal Points of each country.

From the Technical Cooperation Department, International Cooperation Division, ECCJ;

General Manager:	Mr. Yutaka Ogura	Project Manager: Industries (Steel)
Technical Expert:	Mr. Fumio Ogawa	Leader: Industries (Petroleum Refining)
Technical Expert:	Mr. Takashi Sato	Sub-leader: Industries (Petrochemical Plants)
Technical Expert:	Mr. Hitoshi Kaji	Sub-leader: Industries (Petrochemical Plants)

II. Plan of "ASEAN Energy Management System" and Implementation Plan for 2010-2011 to Establish the System

II-1. "ASEAN Energy Management System" Construction Plan

The system plan of the established "ASEAN Energy Management System" is shown in Fig. II-1-1.

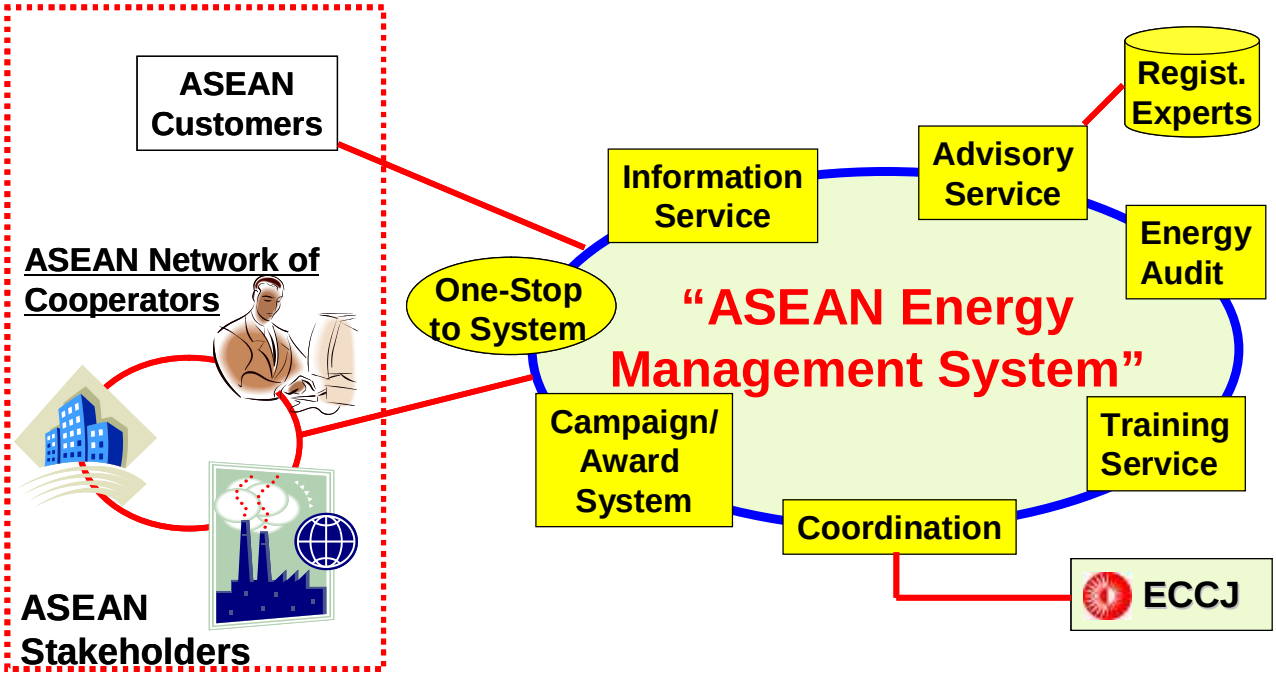


Fig. II-1-1: Plan of ASEAN Energy Management System

In the above system, the most important functions were established first as the Step-1 System, and operation started using available functions. While assessing the results of the operation, other effective functions were considered. From fiscal year 2009, it has advanced to the Step-2 System to establish and prepare prioritized functions. It was determined to create a system and methods to continuously improve the Step-1 System in the establishment process of the Step-2.

With this in mind, the basic schedule of the ASEAN Energy Management System has been updated. Fig. II-1-2 shows the latest schedule of the ASEAN Energy Management System. As shown in this figure, The Step-1 System is supposed to be completed in fiscal year 2010, but actually it has not been completed.

Main activities for fiscal year 2010 are:

(1) The fourth Energy Awards of the "ASEAN Award System of Best Practice in Energy Management for Industries and Buildings" was completed without troubles. The points for improvement in operation were discussed, especially increasing the number of applications to gather more excellent case studies of energy management. To this end, two new categories of large-scale companies and medium to small-sized companies classified by the annual energy consumption has been set from this fiscal year to increase opportunities of application and receiving award. Moreover, a new category "Special Submission" was added to award energy conservation effect achieved by single technology or facility. These were conducted to gather more case studies of energy management.

(2) Standard energy management tools should be prepared and promoted. That is to utilize the

finalized ASEAN Energy Management Handbook, In-house Database and Technical Directory as effective tools, and develop actions to utilize and disseminate these tools.

Consideration to establish and collect effective handbooks to complement these tools will continue.

(3) To facilitate the use of the tools by the existing implementing organizations and concerned parties of the ASEAN region, trial use of a search system between implementing organizations and customers (Online Energy Information System) will start. With this system, the customers can find a suitable implementing organization.

(4) Working towards the construction of the Step-2 System launched in fiscal year 2009, functions to be added, together with necessary programs and tools relevant to these functions will be considered based on an evaluation of the Step-1 System. Construction of a useful information supply system has already included in the plan, such as a directory of energy conservation technology/machinery and equipment suppliers including the JASE-World Technical Directory of energy conservation technologies of Japan. The aim of this system is to provide such tools and relevant information to business enterprises and offer support for commercial application.

(5) Based on the achievements of above activities, check the improvement status of the plan for the ASEAN Energy Management System and review it as necessary.

(6) Continue actions to expand the ASEAN network of cooperators to disseminate the ASEAN Energy Management System among as much people concerned as possible.

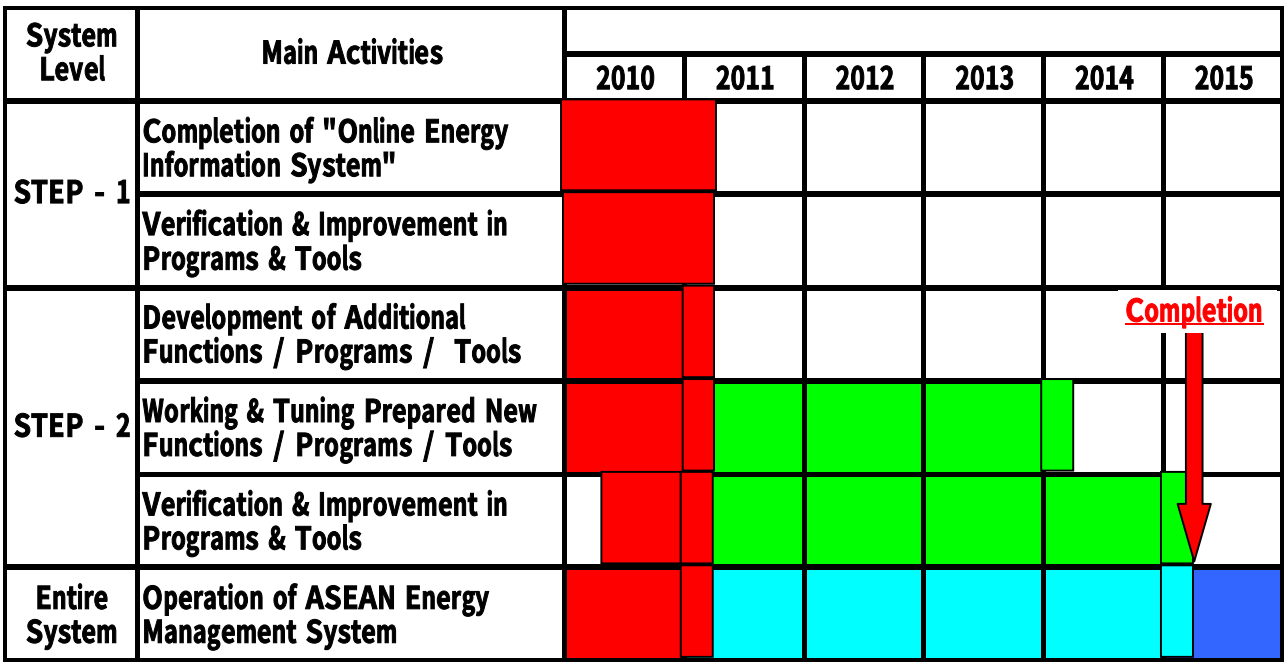


Fig. II-1-2: Schedule for Constructing the ASEAN Energy Management System

II-2. Implementation Plan for 2010-2011

In accordance with the basic plan for constructing and operating the "ASEAN Energy Management System" in the previous section, a plan was created. The implementation plan was finalized at the Inception Workshop held in July 2010, and agreement was reached with the government personnel from the ASEAN countries. Again this year, submissions of proposals were received from each country in accordance with the fiscal year 2010 basic implementation plan finalized at the FY2009 Post Workshop held early March 2010. Based on the proposals, ECCJ prepared a proposal for implementation, which was discussed at the Inception Workshop. Proposals on this project were received from seven countries excluding Thailand, Singapore and Malaysia. Among these, five countries were selected as the site for the project of this fiscal year.

Priority activities for this fiscal year are:

1. ASEAN Energy Management System: Completion of the Step-1 System and continuous operation

♣ Construction of Information Provision Function and Start of Operation

(1) Continue collecting and disseminating the Best Practices in Energy Management: Fourth Energy Award
   a. Smooth operation and improvement of the ASEAN Award System of Best Practices in Energy Management for Industries and Buildings
   b. Improve a system to share information on award-winning case studies
   c. Improve operation for collecting more case studies in a wider range

(2) Development of energy management tools and guidelines for its systematic use
   a. Finalize ASEAN Energy Management Handbook, reflecting the results of use in factories and buildings
   b. Establish guidelines for the effective use of the Handbook, as well as the Technical Directory and In-house Database created for projects of major industries and buildings
   c. Consideration on creating supplementary technical handbooks

♣ Development of Service Provision Function regarding Energy Audits and Training

(1) Start trial operation of the Online Energy Information System to facilitate the use of the existing implementing organizations, including ESCOs, between the implementing organizations and the customers

♣ Expand the ASEAN Network of Cooperators

(1) Introduce activities and request for cooperation and participation in the projects through workshops and company visits

2. ASEAN Energy Management System: Construction of the Step-2 System and start of operations

3. Review of the plan for the ASEAN Energy Management System based on the activities above

Following initiatives will be taken to achieve the above goals:

1. Intensive Seminar-Workshop in the ASEAN region

The purposes of the Intensive Seminar-Workshops are: 1) introduce the PROMEEC Projects including the Energy Management Project; 2) introduce and analyze the results of the fourth round of ASEAN Award System of Best Practice in Energy Management for Industries and Buildings; 3) introduce the

functions and programs of the ASEAN Energy Management System; and 4) disseminate the relevant programs and tools.

This fiscal year, in response to the energy conservation activities of the APAEC, Session 3 on the Awareness & Financing was held to report the status of countries visited and to introduce cases in Japan and contents common to Japan and ASEAN. Group work using case studies, which was held in the ISW, was reorganized into case studies and group discussion scheduled on the second day.

2. Training on the use of ASEAN Energy Management Handbook

The entire morning session on the second day was used to give detailed explanation on the ASEAN Energy Management Handbook for thorough understanding by the participants. In the afternoon session, the recent award-winning cases of the ASEAN Award System of Best Practice in Energy Management for Industries and Buildings, chosen in advance by the countries visited, each from Industries and Buildings, were used as the material of the discussion. Application documents of the cases were distributed to the participants, who discussed analysis of the cases in accordance with the eleven Key Steps in the "Key Step Approach", which is an important theme of the Energy Management Handbook by SGA (small-group activity). Finally, the results were presented by the groups.

3. Visits to Concerned Companies/Organizations

After the Intensive Seminar-Workshop and training on the ASEAN Energy Management Handbook, visit companies/organizations concerned with the following goals: (two locations in each country)

(1) Provision of advice and opinion exchange regarding energy conservation activities in factories and buildings wishing to introduce the Energy Management Handbook. This includes energy conservation promotion, understanding of the condition of the energy management system, and the giving of advice regarding problems.
(2) Encourage utilization of and participation in the ASEAN Energy Management System; introduce the ASEAN Award System of Best Practice in Energy Management for Industries and Building, and if possible, request for submitting applications.

4. Activities to Operate the ASEAN Award System of Best Practices in Energy Management for Industries and Buildings

The following activities will be developed to improve the selection process of the award-winning cases and evaluation standards in the fourth round of the ASEAN Award System of Best Practices in Energy Management for Industries and Buildings:

(1) Attendance at the Meeting of BOJ
Attend the Board of Judges (BOJ) as observer in the process of evaluation and selection of case studies
(2) Call for the application in the fifth round of the award
Activities will continue to receive more applications for the fifth round, including improvement of the evaluation standards based on the analysis of the award-winning cases in the fourth round of the award.

5. Research Forum in Japan

Inviting the BOJ members and others concerned, the sixth Research Forum was held in Japan with the goals below:

(1) Research on the improvement for the PROMEEC Phase-3 in the ASEAN Energy Management System
(2) Improving the operation method of the ASEAN Award System of Best Practices in Energy Management for Industries and Buildings including the evaluation standards
(3) Visits and meetings with the award-winning companies

6. Investigations and Creation of Tools

Continue preparation of the above activities on the Japan and ASEAN sides, investigation of the plans based on the analysis of past implementation, and creation of tools including the Energy Management Handbook.

The above activity plan and the schedule are shown in Table II-2-1 below.

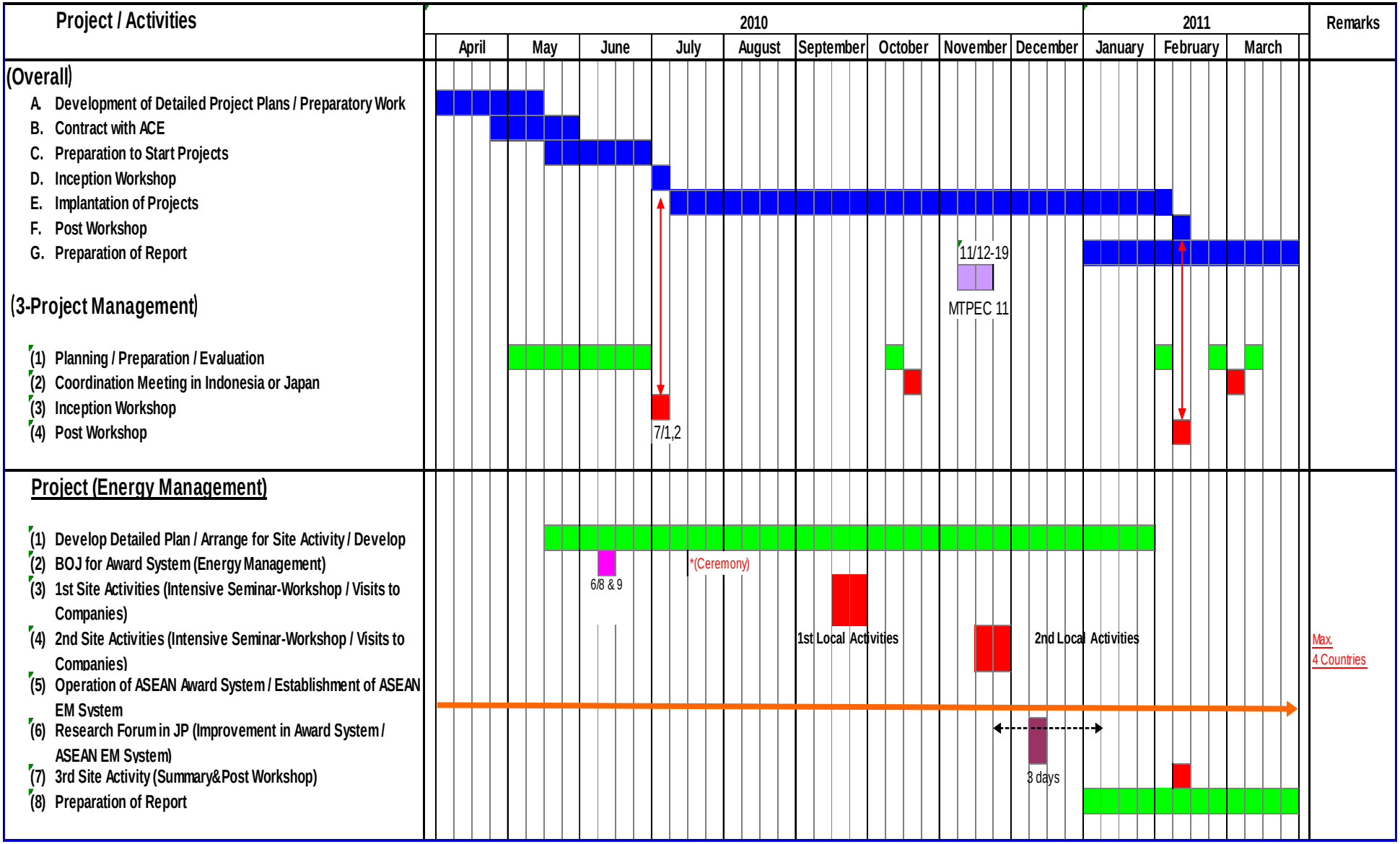


Table II-2-1: FY2010 Implementation Plan

III. Activities in Each Country
(Intensive Seminar-Workshop, Training and Visits to Companies)

III-1. Overview

As scheduled, we visited 5 countries, Vietnam, Brunei Darussalam, Cambodia, Indonesia and Myanmar, and carried out the field activities. We stayed for 3days at each country,. On the first day, we held the Intensive Seminar-Workshop. On the second day, we gave the training for use of the Energy Management Handbook. On the third day, we visited the plants and buildings where they hoped to introduce the Energy Management Handbook into energy-saving activities, gave advice on the activities and exchanged opinions.

In August 2010, the first dispatch was made to Vietnam. In October, the second dispatch was made to Brunei Darussalam, Cambodia and Indonesia, and in December, the third dispatch was made to Myanmar. This fiscal year, the Intensive Seminar-Workshop had many participants from a wide-ranging of organizations including government agencies, implementing organizations, industry groups, companies and universities. The total number of participants was 190. We visited up to three places in each country and a total of nine companies and related organizations in the above five countries.

The training for use of the Energy Management Handbook received attention of many people concerned. In the five countries where the one-day training was implemented, 170 people participated, exchanged questions and answers very actively and conducted Group Work with enthusiasm.

The example of the Intensive Seminar-Workshop program is shown in the Attached Material III-2-1-1. The program is broadly composed of the following sessions:

Session 1: Overview and result of the PROMEEC project and this fiscal year's plan
Session 2: Function and program of "ASEAN Energy Management System"
(1) Overview of the latest "ASEAN Energy Management System"
(2) Specific functions and programs
- Result of the 4th ASEAN Award System of Best Practices in Energy Management for Industry and Building
- Analysis of the result
- Introduction of the implementing organizations - customer search system (Online Energy Information System to Utilize Existing Implementing Organizations)
- Introduction of the JASE-World technical directory
- Introduction of the energy management tools

Session 3: "Awareness and Financing"

As described above, this fiscal year, we made changes to the conventional configuration as follows:

(1) In Session 3, conventionally, the "Training: Group activities for improvement of the Energy Management" was conducted using the ASEAN Award System of Best Practices in Energy Management for Industry and Building. The Training, however, had a high degree of similarity to the case study conducted on the second day. Therefore, it was integrated into the program on the second day. Instead, to Session 3, report by the persons concerned under the theme "Awareness and Financing", which was requested by APAEC, was newly added.
(2) As part of the e-Directory, the presentation of the activities and directory of JASE-World was included to introduce Japanese energy-saving technologies.

In addition, on the second day, the training program for use of the Energy Management Handbook was implemented in all the five countries. The example of the program is shown in the Attached Material III-2-1-2. This consists of two sessions.

This fiscal year, nearly three hours was newly allocated to "Explanation of the Energy Management Handbook" toward a thorough penetration of it. Brunei Darussalam, however,

had its own Energy Management Guide, and in the same way as last year, the time was allocated to the explanation of the Guide and the building energy-saving diagnosis guide by the person concerned from Brunei Darussalam.

Session 1: Seminar
(1) Detailed explanation of the Energy Management Handbook
Session 2: Workshop: Case study through small-group activities
(1) Introduction of the overview of the ASEAN Award case example selected for case study by the host nation
(2) Group Work
- Discussion: Proposal of improvement using the Energy Management Handbook
- Presentation of the discussion result and discussion and opinion exchange

In all the five countries, after the Intensive Seminar - Workshop and the training for use of the Energy Management Handbook, we examined the actual use of the Energy Management Handbook and the activity status at the pioneer companies through the visits/hearing surveys to the companies and held consultations. With the efforts of the parties concerned in each country, such as Focal Point, and the persons concerned from the ASEAN Centre for Energy, we could implement the above activities smoothly as planned. As a result, the following achievements were made:

(1) This fiscal year, many participants from the countries and almost all companies and various related organizations had interests in the project and the "ASEAN Energy Management System" program, and the project and program were evaluated as effective to the energy-saving activities. At the same time, we could confirm that they had a desire to participate in them.
(2) The ASEAN Award system started as a program for compiling best practices in energy management in the "ASEAN Energy Management System" from the countries and spreading them in the ASEAN. It was held four times so far and has been attracting more and more interests and expectations. We could advance in forming the basis for the Award system including operational improvements for continuously inviting more companies for participation in the future.
(3) The Energy Management Handbook contains specific activity guidelines for promoting energy conservation. The participants could experience the usefulness of the guidelines through the group activities using the specific case examples. Brunei Darussalam has set a policy of development and use of the national version of this Handbook as the Energy Management Guideline at the national level.
In addition, the introduction and use of the Energy Management Handbook were implemented at five pioneer companies. According to the result of the introduction, we have made the ASEAN version which has versatility, and we have tried to spread it to the countries. In Laos where we visited last year, the national language version was available. In Vietnam, the pioneer company has been translating it to Vietnamese. In Cambodia, too, such a demand has been arising.
(4) This fiscal year as well, the "cooperators' network" for this project has expanded to many companies including the companies we visited. Since 2004 when we started this project, we have visited 117 companies (plants, buildings, ESCO, etc.) and implementing organizations, government agencies, universities/research bodies, etc., and we made surveys and gave advice on their activities.

In all the five countries, we visited the companies/plants other than pioneer companies and we made sure that they understood the usefulness of the energy management tools such as the Energy Handbook and the significant achievements of the PROMEEC activities that have been implemented every year. At the same time, we called for participation in the ASEAN Award system of Best Practices in Energy Management for Industry and Building.

The actual activities in each country are described in detail as follows:

III-2. Activities and Implementation Results in Each Country

III-2-1. Vietnam

1. Implementation of Intensive Seminar-Workshop

The Intensive Seminar-Workshop was held at a large meeting room on the fourth floor of Hong Ngoc Hospital which is an affiliate of the Hong Ngoc Hotel Gr. in Hanoi. A total of about 30 people, including Mr. Dang Hai Dung, from the Energy Efficiency & Conservation Office of MOIT (Ministry of Industry and Trade), Mr. Nguyen Minh An, Deputy Director of ECC/Hanoi, the persons concerned of ECC/Hanoi, the persons concerned of DOIT/Bac Giang which is located relatively near Hanoi, and people from textile, paper/pulp, automobile, railway and machine companies, participated. The Intensive Seminar-Workshop started at 9 o'clock. Mr. Hoang Minh Lam, ECC/Hanoi, hosted almost all through the seminar, and sometimes Ms. Hang of ECC/Hanoi took the place. It was expected that many of the participants couldn't understand English well, and Mr. Pham Van Duong, Vietnamese, who joined ACE two months ago, served as interpreter in English and Vietnamese, but the interpretation of some technical contents sometimes suspended.

(1) Welcome Remarks: Mr. Nguyen Minh An, Deputy Director of ECC/Hanoi, Mr. Ogura, and Mr. Junianto, ACE, gave an address of thanks to the cooperating organs from each standpoint and explained about the significance of energy-saving and PROMEEC/EM project and the future utilization/development.

(2) Session 1: PROMEEC Projects / PROMEEC EM Projects: Presentation of Outline & Achievements of PROMEEC Project and EM (Energy Management Base improvement) project

1) Outline and Achievements of PROMEEC Project (Mr. Junianto, ACE): Presentation of the EEC activities in APAEC 2010-2015 Program and the past activities of the three PROMEEC projects: Material 1 (not attached)

2) Outline and Plan of PROMEEC (Energy Management) Project (Mr. Ogura, ECCJ): Introduction of the EM project plan for this fiscal year: Material 2 (not attached)

3) EC Law in Vietnam (Mr. Dung, MOIT): It was explained using PPT materials in Vietnamese. The necessity of energy saving and the outline concept of Energy Conservation Law which was approved by the Diet in Vietnam this June were presented: Material 3 (not attached)

(3) Session 2: Introduction of Functions and Program of the ASEAN Energy Management System

1) Outline of Updated "ASEAN Energy Management System" (Mr. Ogura, ECCJ): Explanation of dissemination of the ASEAN Award and EMHB on the ASEAN EM System extracted from this fiscal year's plan and the specific study development plan of the Functions & Other Tools; Material 4 (not attached)

2) Specific Functions and Program

A) ASEAN Award System of Best Practices in E.M. for Industry and Building

- Outline, Results of ASEAN Awards for 2009-2010 and Plan for 2010-2011 (Mr. Junianto, ACE): Presentation of the evaluation result for the EM section on this fiscal year's BOJ and introduction of the future issues; Material 5 (not attached)

B) Information System

- Information Analyses to ease Dissemination of Awarded Case (Mr. Kaji, ECCJ): Presentation of this fiscal year's application for the EM section and the analysis result of the award; Material 6 (not attached)
- Online Energy Information System to Utilize The Existing Implementing Organizations (Mr. Junianto, ACE): Introduction of the Online Energy

Information System and request for join/utilization. At present, 16 organizations have registered as the implementating organization.; Material 7 (not attached)

- Introduction of JASE-World (Mr. Ogura, ECCJ): Introduction of JASE-World in relation to the e-Directory for Technologies & Equipment and explanation about how to use this technical directory; Material 8 (not attached)

C) Energy Management Tools

- Energy Management Handbook (EMHB) and other tools (Mr. Ogura, ECCJ): Presentation of the outline of the Thermal and Electrical Technology Handbooks related to the EMHB and the national version of it at each country; Material 9 (not attached)
- In-House Database (IHDB) for Industries and Buildings (Mr. Junianto, ACE): Presentation of the industries, building types and activity status on the IHDB; Material 10 (not attached)
- Technical Directory (TD) for Industries and Buildings (Mr. Pham, ACE): Presentation of the TD type, case examples and access method; Material 11 (not attached)

(4) Session 3: Environmental Awareness and Financing; As Awareness and Financing were key items of APAEC, as well as at this session, they were newly added to the PROMEEC project this fiscal year. The combination of these two topics is not appropriate, but it was introduced as a new Session. The planned presentation by the host country couldn't be prepared.

1) Situation of Environmental Awareness and Financial Support System in Japan (Mr. Ogura, ECCJ): Presentation of the Energy Conservation Law and measures in Japan arising from the whole global warming situation and the issue about exhaustion of natural resources, measures including the recent Eco-Point System for improvement of people's energy-saving awareness, financial assistance to energy-saving measures and case examples of JICA/ODA energy-saving loans in the ASEAN (Climate Change Measure Loan and Two Step Loan). In Vietnam, these two types of loan have been applied and use of them was encouraged. ; Material 12 (not attached)
2) Financial Support System in ASEAN (Mr. Junianto, ACE): The background of this case in the APAEC, the ASEAN SOME Funding System and the International Potential Funding Sources surrounding the ASEAN were introduced, but there was no description about Japanese systems.; Material 13 (not attached)

(5) Q&A

1) How is the IHDB for Building and Industry? → General information is described for Building, and specific information by industry is described for Industry. (Mr. Junianto) → Is there any format sample? → See the ACE website. (Mr. Junianto)
2) What will be the finance base for the Energy Audit? → It will be studied as an APAEC Implementation Project at ACE. (Mr. Junianto)
3) How many international fundings have already been received? → Mostly handled under government to ASEAN, now open for proposal. (Mr. Junianto)

(6) Breakdown of participants

1) MOIT (Ministry of Industry and Trade): Mr. Dang Hai Dung
2) ECC/Hanoi: Mr. Nguyen Minh An, Mr. Hoang Minh Lam, Mr. Nguyen Tien Luc, Ms. Nguyen Thi Thanh Hang, etc.
3) DOIT (Department of Industry and Trade)/Bac Giang: 2 people
4) Textile: Hanoi May 19 Textile: 2 people
5) Train company: Gia Lam Train: 2 people
6) Building: 4 people; Ocean Park Building: 2 people, Melia Tower: 1 person, VGBC (Vietnam Green Building Council): 1 person (French)

7) Paper and pulp: Tissue Paper: 2 people
8) Automobile: Goshi Automobile: 1 person, DeaHa Automobile Comp.: 1 person
9) Machine: Thang Lonmg Mechanic: 1 person, Mechanic & Electric Comp: 1 person, Automate Machine: 1 person, Construction Comp: 1 person
10) Plastic: Hannel Foam Plastic: 1 person
11) Rubber: Hanoi Rubber: 1 person
12) Unknown business type: SAS-CTAMAD: 1 person, Viglacera: 2 people,
13) Government-related organization: Culture Organization Govt.: 1 person

(7) Responses at ISW, etc. and issues

1) Stance of the Vietnamese Focal Point (MOIT) to the ASEAN PROMEEC project: In the EM project, too, the FPs of other countries supported and accompanied us during ISW, the Training and Advisory Visit on the EMHB. Although we understand the Vietnam MOIT has a small number of staff members and they are busy, a few other people from the same office can participate and try to absorb the contents of ISW and TR. We will make suggestions in the future whenever there is a chance. We think this is also part of human resource development.
2) As before, this time, we distributed the English version of presentation material, common to the ISW and TR. But it seemed that many of the participants couldn't understand English well, and Mr. Dung, MOIT, said to us that we should have translated the presentation material into Vietnamese. Actually, when we asked the participants in the middle of the lecture if they could understand English, only less than half of them raised their hands. Mr. Pham, ACE, served as an interpreter, but we didn't know whether he interpreted correctly. It was very difficult to make them understand the contents using the English material. In the future, it seems that it is necessary to consider translation of presentation material into local languages in some countries.
3) Consideration of the Vietnamese version based on the EMHB English version: The Vietnamese version ought to have been already prepared in cooperation of VINAMILK. We requested MOIT to show us the actual version, but they didn't show it to us. We asked MOIT and ECC/Hanoi to increase the opportunities of presentation at seminars using the Vietnamese version as soon as possible if they found that there was an obstacle against the dissemination of EM using the English version.

2. <u>Training for the use of the Energy Management Handbook, etc.</u>

The number of participants was 26 (excluding the host people from MOIT, ECC Hanoi, ACE, ECCJ, etc.). The number of participants who attended the workshop in the afternoon following the workshop in the morning was 22. Among them, there were about three people who attended the workshop the previous day. Based on the number of participants, three groups were made for Group Work that day (about seven people in one group).

Conventionally, the course on the second day was intended for companies and implementing organizations which had special interests in introduction of the tools such as Energy Management Handbook, In-house Database and Technical Directory to make them understand the details and the uses of those tools.

This fiscal year, in view of the incorporation of the PROMEEC (EM) programs in Phase-3, the contents for the second day were changed as follows:

1) In the morning, the explanation about the In-House Database and the Technical Directory which was conventionally conducted was omitted (because the rough explanation was given in the first day seminar). The remaining time was spent to the explanation of "Energy Management Handbook".
2) Conventionally, the "Energy Management Handbook" was explained almost page by page. This time, the copy of this handbook was included in the Material distributed to the participants and the explanation was conducted using PowerPoint slides.

3) In the afternoon, mainly, Group Work was conducted. The Group Work which was conventionally conducted on the first day was omitted, and conducted only on the second day. Concerning the Group Work, the following measures were taken (in addition to the conventional measures):
   - Case example(s) in the host country shall be used wherever possible.
   - People of the host country shall have complete control over instruction for the whole Group Work. (In Vietnam, this was conducted as planned and the result was successful.)
4) In the final session, FP in the host country or alternative person explained about the government's efforts and training courses.

The characteristics of this fiscal year's training are mentioned above. The content of the actual training (program) is shown in the Attached Material-2. (In principle, the program on the second day shall be common in every country. This fiscal year, the program in Brunei Darussalam needs to be prepared as a special program through consultation with the counterpart. It's because Brunei Darussalam has already prepared its own Energy Management Guide and has proceeded ahead of the other countries as shown in the last year's Training that Brunei Darussalam side gave guidance for Group Work.)
The implementation results of each item on the day are described below.

(1) Lecture: Lecture about the outline/characteristics of the Energy Management Handbook and content and important guidelines in detail; Materials 14- 15 (not attached). The lecture was given in English. Mr. Pham (from Vietnam) of ACE interpreted consecutively. About three hours were taken for the whole morning session, but the actual lecture time was about half because of interpretation. It seems, however, that the participants could keep interests in the lecture using slides more continuously than lecture reading books. The characteristics of the Handbook are Key Step Approach and Small Group Activities (SGA). Only a few people were familiar with the methodologies such as SGA-related TQM, TPM and Kaizen. (In other countries, more people know the methodologies. So, this response in Vietnam was unexpected.)

   We had a feeling that Mr. Pham understood and interpreted the content of lecture well and properly. After the lecture, however, it was a surprise that the participants didn't ask any question. It's a fact that we had some concern about the degree of understanding of lecture in English via an interpreter. Mr. Ogura, manager, forced some participants to give comments, and the following opinions were given:
   - The content was good. We want to carry out what we learned here back at our company.
   - Some English terms were difficult to understand.
   - (others)

   Also, Mr. Lam of ECC Hanoi gave a comment, "it will be better to promote more familiarity by insertion of more cartoons in preparing the Vietnamese version of Energy Management Handbook."

(2) Workshop (group activity); Material 16 (not attached)
   1) Presentation of energy-saving activities by the following two companies:
      This time, in Vietnam, we used the cases of two companies, which applied each for the Building and Industry sections in the EM of PROMEEC ASEAN Awards 2009-2010.
      A) Ocean Park Building (Building Category, 2nd Runner-up) Presenter: Mr. Vu Sinh
      B) Ha Noi 19 May Textile Company (Industry Category) Presenter: Mr. Hoang Minh Lam

   A) Mr. Vu Sinh, who was mentioned as a contact person in the competition application, gave the presentation (in Vietnamese). The company which received the 2nd Runner-up award gave a great presentation with full confidence. But it seemed that the presentation took too much time.
   B) The presenter of the company couldn't attend, and Mr. Lam explained as a substitute (in Vietnamese).

   The application documents for the ASEAN Energy Award Competition were provided as

materials in both cases and the Vietnamese versions were put in file for participants. In addition, explanation was made on the day. So, the preparation for the group discussion was almost perfect.

We had a plan to visit the Ocean Park Building on the next day, 27th, and we could get appropriate related information in advance.

2) Experience of Group Work

Before the Group Work, ECCJ explained about the basic matters, first. It was decided that for the analysis/evaluation of cases, the Energy Management Handbook should be used as a standard and that it should be discussed on whether necessary items are implemented completely.

The final presentation items based on the discussion result were as follows (as in previous years):

A) Evaluation of energy-saving activities based on the presentation contents above (Good Points), and

B) Advice on the future possible improvement plan

After the explanation by ECCJ, we left the Group Work to the voluntary guidance by the host (Mr. Lam of ECC Hanoi), resulting in a delay of the schedule. We felt that some details were insufficient, but there is no help for it considering it is in the middle stage for technology transfer from Japan to ASEAN.

Three groups were made. The number of people in each group and the selected cases are as follows:

Group No.	Number of people	Selected case
1	7	Ocean Park Building
2	7	Hanoi 19 May Textile
3	8	Ocean Park Building

According to the discussion schedule, the discussion time was one and a half hours. The actual discussion was a little shortened, but there was no problem.

One white board for each group was prepared for discussion/presentation. Various methods were used by each group. The presenter of each group was as follows:

Group 1: Mr. Nguyen Tuan Phong (10/ 10 Textile Joint Stock Company)

Group 2: Mr. Vu Sinh (Ocean Park Building)

Group 3: Mr. Duong Manh Ha (Gia Lam Train Company)

Group 1 didn't make sufficient preparation for the presentation and the presenter explained while writing on the white board. Mr. Sinh of Group 2 gave the presentation using the slides prepared for it with some corrections made. Group 3 gave the presentation the smartest using newly prepared slides.

3) Comments from ECCJ and ECC Hanoi

First, ECCJ distributed the "Cross-reference of the contents of both cases and each item of the Energy Management Handbook" (prepared by Mr. Kaji, technical expert) (something like correct answers for this Group Work) and gave an explanation.

Then, the following comments were made:

- Mr. Lam, ECC Hanoi, coordinated the whole work. I am grateful to him.
- The Group Work was the first experience for most of the participants and I think it was a good opportunity. I hope you will bring this experience back to your workplace and use it there.
- Generally, the time for presentation was long. Time management is also an important element.
- Only Group 3 introduced the members at the beginning of the presentation.
- The reason for the selection of cases was not explained. Since the key person (Mr. Sinh) from Ocean Park (Case 1)) was in Group 2, from the aspect of fairness, another theme should have been selected or Mr. Sinh should have not taken an important role. The fact that he was a leader of the Group Work as well as a presenter was not good to the Group Work because we don't know to what degree the other members'

opinions were reflected.
Mr. Lam also made comments (in Vietnamese).

(3) Presentation from MOIT
Mr. Dung explained the government program and Training Course using the PowerPoint slides (in Vietnamese). We have requested Mr. Pham, ACE, to translate this material roughly into English. In the slides, three kinds of books (Manuals/ Handbooks for Energy Managers/ Engineers) were shown. We obtained one of them (for energy-saving audit) later. We heard that there were descriptions related to EMHB in this book, but actually, there was no special description about Key Step Approach and SGA. Only the descriptions related to the data report format was found in the latter half of EMHB.

(4) Awarding of Certificates and Closing of Training
Lastly, Mr. Dung, MOIT, called the names of participants, and Mr. Ogura, General Manager, of ECCJ, gave the participants the Certificates. After that, Mr. Dung, MOIT, made closing remarks and the second day (Training) ended.

(5) Breakdown of the participants
1) MOIT: Mr. Dang Hai Dung
2) ECC/Hanoi: 5 people; Mr. Hoang Minh Lam, Mr. Nguyen Tien Luc, Ms. Nguyen Thi Thanh Hang, Mr. Do Van Sang, Mr. Phung Van Tue
3) Textile: 10/10 Textile: 4 people, Than Long Textile: 2 people, Dong Xuan Textile: 1 person, Hanoi 19/5 Textile: 1 person
4) Paper and pulp: Tissue Paper: 2 people
5) Automobile: Goshi Automobile: 1 person, DeaHa Automobile Company: 1 person
6) Rubber: Sao Vang Rubber: 1 person
7) Plastic: Hannel Foam Plastic: 1 person
8) Train company: Gia Lam Train Comp.: 2 people
9) Machine: Thang Long Mechanic: 1 person, Mechanic & Electric Hanoi Comp: 1 person, Equipment Comp: 1 person
10) Building: Ocean Park Building: 2 people, Melia Tower: 1 person, Estate Com: 1 person
11) Others: National Center of Commerce: 1 person
12) Unknown business type: SAS-CTAMAD: 1 person

3. <u>Visit to the company</u>

Based on this Intensive Seminar-Workshop and the Training about use of the Energy Management Handbook, etc., we chose two companies mentioned below from the companies which want to use the tools such as the Energy Management Handbook for the Energy Management activities at plants and buildings and promotion of energy saving, and we visited the companies on August 27 and exchanged opinions. For the details, see the Attached Material III-2-1-3.

(1) Hanoi Rubber Joint Stock Company
(2) Ocean Park Building

Attached Material III-2-1-1 Agenda for Intensive Seminar-Workshop

AGENDA
Intensive Seminar-Workshop
Promotion Of Energy Efficiency And Conservation (PROMEEC) - Energy Management
Under The SOME-METI Work Programme 2010-2011

Day 1: August 25, 20 10

08:30-09:00	Registration
09:00-09:06	Welcome Remarks *Mr. Nguyen Minh An, Deputy Director of ECC Hanoi*
09:06-09:22	Opening Statement *Mr. Yutaka Ogura, General Manager, The Energy Conservation Center, Japan (ECCJ)*
09:22-09:35	Opening Statement *Mr. Junianto M, IT Manager, ASEAN Centre for Energy (ACE)*
09.35-10:00	*COFFEE BREAK & GROUP PHOTO SESSION*
10:00-11: 15	Session 1: PROMEEC Projects / PROMEEC EM Project : Outline & Achievements
10:00-10:30 10:30-11:00	Presentation by ACE & ECCJ 1) Outline and Achievements of PROMEEC Project (*Mr. Junianto - ACE)* 2) Outline and Plan of PROMEEC (Energy Management) Project *(Mr.Y.Ogura - ECCJ)*
11:00-11:21	EEC Law in Vietnam *(Mr. Dang Hai Dung, MOIT Viet Nam)*
11:25-14:30	Session 2: "ASEAN Energy Management System" : Functions & Program
11:25-11:57	Outline of Updated "ASEAN Energy Management System" *(Mr. Y. Ogura - ECCJ)*
11:57-12:04 12:04-12:16	Specific Functions and Program 1) ASEAN Award System of Best Practices in E.M. for Industry and Building - Outline, Results of ASEAN Awards for 2009-20 10 and Plan for 2010-2011 (*Mr Pham - ACE)* 2) Information System - Information Analyses to ease Dissemination of Awarded Case *(Mr. Hitoshi Kaji - ECCJ)*
12:20-13:30	*LUNCH*
13:40-13:55 13:55-14:15 14:15-14:30 14:30-14:52 15:18-15:25	Presentation by ECCJ, ACE and Host Country 2) Information System (Continued) - Online Energy Information System to Utilize The Existing Implementing Organizations (*Mr. Junianto - ACE)* - Introduction of JASE-World (*Mr. Y. Ogura - ECCJ)* 3) Energy Management Tools - Energy Management Handbook and other tools (*Mr. Y. Ogura - ECCJ)* - In-house Database for Industries and Buildings *(Mr. Junianto - ACE)* - Technical Directory for Industries and Buildings (*Mr. Pham - ACE)*
14:53-15:18	*COFFEE BREAK*
15:30-17:00	Session 3: Environmental Awareness and Financing
15:25-16:15	1) Situation of Environmental Awareness and Financial Support System in Japan (*Mr. Y. Ogura - ECCJ)*
16:15-16:30	2) Financial Support System in ASEAN (*Mr. Junianto - ACE)*
16:30-16:45	Q&A
	End of Intensive Seminar-Workshop

Day 2: August 26, 20 10

08:30-09:00	Registration
09:00-12:30	Session 1: Seminar by ECCJ
09:04-10:02	Explanation by ECCJ: Outline of Energy Management Handbook for ASEAN *(Mr. Fumio Ogawa - ECCJ)*
10.02-10:22	*COFFEE BREAK*
10:22-12:08	Details of Energy Management Handbook for ASEAN *(Mr. F. Ogawa - ECCJ)*
12: 15-12:30	Q&A
12:30-13:30	*LUNCH*
13:30-17:00	Session 2: Workshop (Training for Small Group Activities) *ECC Hanoi/ECCJ*
13:38-13:56	Guidance for Group Work *(Mr. F. Ogawa - ECCJ)*
13:58-14:28	(Experience of Dissemination of ASEAN Award Best Practices of EM) Explanation of Best Practices /EM in Building (Case 1: Ocean Park Building) *(Mr. Vu Sinh, Ocean Park Building)*
14:29-14:4 1	Explanation of Best Practices /EM in Industry (Case 2: Hanoi Textile Company) *(Mr. Hoang Minh Lam, ECC Hanoi)*
14:41-16:00	Group Work Based on Cases Studies 1 & 2 by ECC Hanoi/ECCJ - Preparation for Group Work - Discussion by Groups: Guideline and Basic Plan to Improve Using "Energy Management Handbook"
16.00-16: 15	*COFFEE BREAK*
16: 15-17:05	Presentation by Participants: Results of Group Work for Cases Studies 1 & 2
17:05-17:36	Comments by ECCJ Experts and ECC Hanoi
17:36-17:48	Discussion on Proposed Program / Plan of EM Training in Vietnam *(Mr. Dang Hai Dung, MOIT)*
17:48-18:00	Awarding Certificate for Participants *(MOIT, ACE & ECCJ)*
18:00-18:05	Closing Remarks *(Mr. Dang Hai Dung, MOIT)*
	COMPLETION OF TRAINING

Attached Material III-2-1-3: Records of the visit to the related companies/organizations

1. Vietnam

Visit to PROMEEC (Energy Management) related organization: Vietnam (No. 1)
Visit to Hanoi Rubber Joint Stock Company

NO.	Item	Content
1	Date and time	August 27, Friday 8:30 to 11:30
2	Meeting place	Hanoi Rubber Joint Stock Company Tu Liem - Hanoi City
3	Counterparts	- Mr. Do Thai Giang, Vice Director Participate in the seminar on the first day
4	Accompanying persons (ECC/Hanoi)	-Mr. Hoang Duc Huyen (Assistant Head of Training and Propaganda) -Mr. Do Van Sang (left in the middle)
5	Visitors (ACE, ECCJ)	- Mr. Junianto M (IT Specialist, ACE), Mr. Pham Van Duong (Technical Expert) - Mr. Yutaka Ogura (General Manager, Technical Cooperation Department, ECCJ) - Mr. Fumio Ogawa (Technical Expert, Technical Cooperation Department, ECCJ) - Mr. Hitoshi Kaji (Technical Expert, Technical Cooperation Department, ECCJ)

6. Overview of the company we visited

Hanoi Rubber Joint Stock Company was founded in 1959 and became a joint holding company in 2005. The company has 520 employees and manufactures athletic shoes and rubber sheets for laying on floors. The annual shipment value is 4.5 million USD and its products are exported to Europe, Mexico, Japan, etc. The annual quantity of production for athletic shoes is 1.2 to 1.3 million pairs and that for rubber sheets is 80 thousand sheets (2 square meters for one sheet).

For energy, in addition to electricity, coal is used because steam is needed in the curing process, etc.

The annual electric power consumption is about 1,440 MWh, and the annual coal consumption is about 650 tons.

As described above, a large amount of energy has been used. They had a strong interest in the reduction of energy consumption, and during the process of asking guidance for ECC Hanoi on the current status analysis, etc., they knew about this seminar and participated.

7. Content of hearing/consultation

(1) Content of hearing

1) For the electrical equipment, they have 45 kW x 8 lines of rubber mixing machines, 132 kW x 3 lines of rubber stretching devices, 90 kW x 2 lines of pressing machines and 230 kW (150 sets) of shoe sewing machines, etc.
2) For the electric power consumption ratio, the rubber mixing machines make up 35%, the rubber stretching devices make up 15% and the shoe sewing machines make up about 30%.
3) In addition, they have two coal firing boilers. The capacity is 3.5 ton/h and one of the two boilers is a spare. On the boiler, the thermal insulation of steam pipes was strengthened and condensed water was collected.
4) The production is conducted in 3 shifts, except the sewing process of athletic shoes.
5) In September 2010, it has been decided that they will obtain ISO 14001. The engineering team is now working on a specific plan toward improvement of the environment. Therefore, we expected that we could get specific improvement proposals during this visit.
6) As the management method, 5S has already been introduced.

(2) Explanation, opinion and proposal on our visit including the field inspection

1) At the field, the 5S signs are put up (Vietnamese signs also start with the character S so that they correspond to 5S in Japanese). On the engineering aspect, thermal insulation has been provided on the steam pipes. Also, for the lighting of the show sewing room, each sewing machine has a switch so that the lighting can be turned on/off at individual sewing machines. We could understand that they have been conducting a certain level of energy-saving activities both in the Energy Management aspect and the engineering aspect.
2) At this plant, specified employees are allocated to each line mainly in the sewing room. Therefore, employees allocated to the line seem to know about problems the best. At this point, by introduction of SGA, a large energy-saving effect can be obtained.
3) Mr. Giang who gave us explanation and guided around the plant is the only person who participated in this seminar, and we hope he could understand the importance of Energy Management. We expect that an EC Team will be organized and they will make efforts for energy conservation systematically.
4) Please refer to the EMHB for the actual efforts. The English version of EMHB can be downloaded on the website of ACE. In Vietnam, VINAMILK voluntarily translates the EMHB into Vietnamese. For the Vietnamese version, contact ECC Hanoi, MOIT.
5) For the engineering aspect, the following indications and proposals were made:
   - ✓ The steam generating pressure of the boiler is 0.55 MPa, while the required pressure of the demand side is about 0.35 MPa. Energy saving is possible by lowering the steam pressure generated at the boiler,.
   - ✓ For compressed air, the generating pressure of the compressor is 0.7 MPa, while the required pressure of the demand side is about 0.5 MPa. Energy saving is possible by lowering the compressed air pressure generated at the compressor,.
   - ✓ Leaks are found on some of steam pipes and compressed air pipes. By stopping the leaks, energy saving is possible.
   - ✓ During the field inspection, it was raining. Coals that became wet due to rain were supplied to the boiler. The more moisture is contained in coals, the more energy is lost. In this respect, the degree of effect should be grasped and any measure should be taken.
   - ✓ This boiler has no instrument for measuring the temperature and the oxygen concentration of the exhaust gas discharged from the boiler. The temperature and the oxygen concentration of the exhaust gas are data essential to know the heat efficiency of the boiler, and a periodic measurement is preferred.
   - ✓ The boiler that has been used adopts the burning method where block coals are input by hands. It is expected that some of waste rubber such as cutting chips can be used as an alternative energy source of coal fuels after being cut finely. Therefore, we propose a test.

(3) Response of the company we visited

1) They understood the importance of Energy Management by SGA.
2) They also understood the points that should be technically improved.
3) They are aware of the importance of data collection through the instruction from ECC Hanoi and these indications.

8. Overview of field inspection

1) Basically, CFL is used for the lighting of meeting room, and fluorescent lighting is used in the plant. During daytime, natural lighting is taken in to turn off part of lighting.
2) Air conditioners are set in the office and the meeting room. During our visit, the windows of the meeting room were opened, and the wind flow was generated using fans. We found their consideration to energy conservation. In the plant, there is no air conditioner. Ventilating fans and electric fans are used.
3) The area of the plant is divided by process, and employees are allocated by line. Transfer of

objects in each process is conducted by persons.

4) Electrical equipment such as rubber mixing machines was purchased by the unit of device. No inverter is installed.
5) The boiler is a two-body type water-can boiler and adopts the block coal hand molding system. The ventilation system is a balanced draft type. The name plate indicates it was manufactured in 2008, but the appearance looks older.

Visit to PROMEEC Energy Management) related organization: Vietnam (No. 2)
Visit to Ocean Park Building

NO.	Item	Content
1	Date and time	August 27, Friday 13:50 to 17:00
2	Meeting place	Hanoi Property Management Co., Ltd. Suite 3 12, Ocean Park Building, 1 Dao Duy Anh Str., Hanoi City
3	Counterparts	- Mr. Vu Tien Son, Director - Ms. Phan Thu Huyen, Personnel & Admin. Manager - Mr. Vu Sinh, Chamber of Project (attended the seminar and presented the case example) - Mr. Rhan Dung Hung (attended the seminar)
4	Accompanying persons (ECC/Hanoi)	- Mr. Do Van Sang
5	Visitors (ACE, ECCJ)	- Mr. Junianto M (IT Specialist, ACE), Mr. Pham Van Duong (Technical Expert) - Mr. Yutaka Ogura (General Manager, Technical Cooperation Department, ECCJ) - Mr. Fumio Ogawa (Technical Expert, Technical Cooperation Department, ECCJ) - Mr. Hitoshi Kaji (Technical Expert, Technical Cooperation Department, ECCJ)

6. Overview of the company we visited

(1) Ocean Park Building completed its construction in 2001 and fully opened in April 2004. It is a 21-floor office building. On the first and second floors are Trade Center and on the remaining 19 floors are offices. The total floor area is 34,620 m^2.
(2) We visited the asset management section of Hanoi Maritime Holding Company, which is an asset management company.
(3) Ocean Park Building applied for the Large-Scale Building Energy Management Section of the 2009 ASEAN Awards and got the third prize.
(4) We visited there to check of the activity status of Energy Management and to continuously promote energy conservation activities.
(5) In this seminar, Mr. Vu Sinh and Mr. Rhan Dung Hung participated, and Mr. Vu Sinh presented the activity status.

7. Content of hearing/consultation

(1) Content of hearing

1) This building is one of the largest consumers of Hanoi Electric Power Company. Improvement in the energy consumption is required and they have a strong interest. Because of this, in-house power generation by the emergency power-generator is conducted at irregular intervals. Mr. Vu Tien Son who gave the presentation is an engineer, and therefore, he gave immediate answers to the questions with specific values. We could know his interest in energy conservation.
2) 97% of the energy is electric power and the remaining 3% is light oil for the generator set (which is used at an emergency and electric power demand seasons).
3) During planning, they took energy conservation into consideration. BMS (Building Management System) for the air conditioning facilities, refrigerant current transformation volume control for air conditioning facilities, CFL lighting, etc. were introduced and adopted. As a result, they feel proud that the energy intensity is lower compared to that of other buildings and they are concerned with energy intensity.
4) On the aspect of operation, generally, the setting temperature of building air conditioner is

25°C uniformly. In this building, the setting temperature of air conditioner in the common area is 26.5°C, which is higher by 1 to 2°C. In addition, the operating time is set by season.

5) This building is approved as Green Building by the VGBC (Vietnam Green Building Council), and they exchange information as a member of the Chief Engineers Association of Building.
6) The electric power consumption ratio between the tenant occupation area and the common area is 19 to 20% and 81 to 80%. The ratio of the electric power consumption of air conditioning facilities is about 55 to 56%.
7) The tenant occupancy is stable at about 85%.
8) The engineering section prepares and manages the operation/maintenance manual (3 King Files).
9) The consumption of lighting and power by tenant is recorded and managed every day. A system of sending a report to the manager at abnormality has been established. Also, the necessary data is graphed.
10) In the maintenance management, preventive maintenance (planned maintenance) has been also introduced and implemented.
11) 5S has been introduced as a management method,.
12) At the seminar, it was pointed out that the energy-saving improvement rate was about 3%, which was too small compared to that of the first prize case in the large-scale plant section (43% in two years). Since the building was originally constructed with awareness of energy saving, it seems difficult to achieve a large energy-saving improvement.

(2) Explanation, opinion and proposal on our visit including the field inspection

1) In the field, the 5S signs are put at various places. The whole places are neat and well organized, and we found that the workers have been well instructed. We could make sure that the efforts have been made appropriately.
2) There is a saying in Japan, “Squeezing a dry mop further.” There is no end for energy saving. We expect a continuous improvement. The energy conservation law will be put into effect next year in Vietnam, and it will not apply to this building. In that case, a continuous improvement will be more indispensable.
3) It is considered that the energy-saving case example in the building section has general versatility. From this point, it is desired that they will use the ACE Technical Directory/In House Data Base. …(ACE’s opinion).
4) Top Policy (explanation/comment of Mr. Vu Tien Son) is clear and wonderful.
5) We confirmed that the recommendations described in the EMHB have been carried out.
6) This building is the Vietnam’s first award-winning example in the EM section of the ASEAN Awards, which is worthwhile. The ASEAN Awards has the Building section in addition to the EM section. Applications to the Building section are expected.
7) Basically, all employees must participate in SGA. From this point, it seems that the Vietnamese version of EMBH is more effective. VINAMILK has been voluntarily preparing the Vietnamese translation version. If you want to get one, contact ECC Hanoi, MOIT.
8) Building multi-air conditioners are adopted and the outdoor units are set on the roof floor.
9) For lighting, CFLs, straight-tube fluorescent lamps, are introduced. During daytime, natural light is used and lamps are turned off.
10) We made the following engineering indications and proposals:
    A) On each floor, AHU is set up, so that outside air and exhaust air are heat-exchanged via the total heat exchanger. The intake volume of outside air, however, is not controlled. Therefore, if the indoor CO_2 concentration, which should be measured periodically, is under 1,000 ppm, the intake volume of outside air can be reduced and energy conservation can be expected. We proposed a periodic measurement of indoor CO_2 concentration and adjustment of the intake volume of outside air based on the measurement result.

B) At the field inspection, although they explained that a power-factor regulator was installed, the power factor was 0.90 to 0.91. We felt the power factor was bad for the existence of the power-factor regulator. We propose an investigation of the cause.

C) Many CFL downlights are used at the elevator halls and corridors. Change from constant use of downlights to LED down lights allows energy conservation. LED downlight lighting fixtures are expensive, but the power consumption is small and life is long.

(3) Response of the company we visited

1) They knew that it was important to continue Energy Management.
2) They understood technical points to be improved.
3) The SGA activities have taken root. They requested FP (ECC Hanoi) to try to apply for another award system (Building section).

8. Overview of field inspection

1) The manuals, recording tables, etc. are organized and managed and are available instantly whenever needed.
2) The photo of Energy Management team and responsible people is shown on the wall for better understanding.
3) Building multi-air conditioners are adopted and outdoor units are set up on the roof floor. No damage is found in cold insulation of the refrigerant piping.
4) On each floor, AHU is set up, so that outside air and exhaust air are heat-exchanged via the total heat exchanger.
5) For lighting, CFLs, straight-tube fluorescent lamps, are introduced. During daytime, natural light is used and the lamps are turned off. For lighting of the meeting rooms, CFLs are basically used. In the plant, fluorescent lamps are used. During daytime, natural light is taken in to reduce the use of luminaries.
6) In the fields, 5S signs are put up at various places. (“5S” comes from Japanese language and 5S signs at Hanoi Rubber Joint Stock Company corresponded to the Japanese 5S. But here, all the head characters are not S in Vietnamese language.)

III-2-2. Brunei Darussalam

1. Implementation of Intensive Seminar-Workshop (ISW)

The Ball Room on the first floor of Radisson Hotel in the city was used for the ISW on the first day and the second day. The room was long sideways and large and had a pillar near the center. Therefore, two projector screens were used, and we had to give the presentation paying attention to the both screens. On the first day of ISW, over 50 people in total participated. It seemed that most of them participated in this PROMEEC EM for the first time. Mr. Ahmad said that many of the participants from the related agencies and companies were Senior Officers. Also, the persons concerned of the Ministry of Finance who we visited for OJT audit at the PROMEEC Building at the end of September participated for two days. The article about the first day's ISW was written up on the next day's newspapers (Borneo Bulletin, etc.). The content of the program is shown in the Attached Material III-2-2-1.

(1) Welcome Remarks: Mr. Matsatejo Sokiaw, Permanent Secretary of Energy of Prime Minister's Office, Mr. Ogura, and Mr. Nguyen Manh Hung, Executive Director of ACE gave an address of thanks from the respective positions to the cooperative organizations and presented the significance and the future use/development of energy saving and PROMEEC/EM project. Mr. Matsatejo Sokiaw stated that the annual energy consumption amount of Brunei Darussalam was 1 Billion Brunei $ (a little under 80 billion yen). Based on the result of the government agengy's energy-saving audit conducted at PROMEEC Building the previous month, it became evident that there is room for energy conservation by at least 10% by no cost & low cost measures. He said that if 10% of 1 billion B$ is saved, the saved amount can be used for other purposes, and they must make efforts as a great effect could be expected. He explained about awareness development of students and children as well as adults. Also, concerning Renewable Energy, he stated that they would study a construction of a 1 MW PV Solar Power Plant which is the largest-scalce power plant in the ASEAN.

(2) Session 1: PROMEEC Project / PROMEEC EM Project : Presentation of Outline & Achievements of PROMEEC Project and EM (Energy Management base improvement) Projects

1)"Outline and Achievements of PROMEEC Project" (Mr. Pham Van Duong, ACE): Presentation of the EEC activities in the APAEC 2010-2015 Program an d the past activities of three PROMEEC projects; Material 1 (not attached)

2)"Outline and Plan of PROMEEC (Energy Management) Project" (Mr. Ogura, ECCJ): Presentation of this fiscal year's plan for the EM Project; Material 2 (not attached)

3)"EEC Activities Update" (Mr. Ahmad bin Mohamad): Explanation about the recent energy-saving promotion activities as well as awareness in Brunei Darussalam. The EM Reference for Building has already been completed, and the EM Reference for Industry and EC Tips are under preparation. Presentation about cooperation in the PROMEEC acitivities, application status of the ASEAN Award, the Energy Management Policy and the implementation status, etc.: Material 3 (not attached)

(3) Session 2: Presentation of Functions and Program of ASEAN Energy Management System

1) "Outline of Updated ASEAN Energy Management System" (Mr. Ogura, ECCJ): The ASEAN EM System is extracted from this fiscal year's plan, and the dissemination of ASEAN Award and EMHB and the specific study and development plan for Functions & Other Tools are explained. ; Material 4 (not attached)

2) Specific Functions and Program

A) ASEAN Award System of Best Practices in E.M. for Industry and Building
- "Outline, Results of ASEAN Awards for 2009-2010 and Plan for 2010-2011" (Mr. Pham Van Duong, ACE): Presentation of the examination result at the EM section in this fiscal year's BOJ and the future issues; Material 5 (not attached)

B) Information System
- "Information Analyses to ease Dissemination of Awarded Cases" (Mr. Sato, ECCJ): Presentation of analysis results of contents of application and the award winning in this fiscal year's EM section; Material 6 (not attached)
- "Online Energy Information System to Utilize The Existing Implementing Organizations" (Ms. Maureen Balamiento, ACE): Presentation of Online Energy Information System and requests for participation and utilization. At present, 16 organizations registered as implementing organizations.; Material 7 (not attached) This time, the In-house Database and Technical Directory described in 3) below were also explained together.
- "Introduction of JASE-World" (Mr. Ogura, ECCJ): In relation to the e-Directory for Technologies & Equipment, JASE-World and the use of the Technical Directory are introduced. ; Material 8 (not attached)

C) Energy Management Tools
- "Energy Management Handbook (EMHB) and Other Tools" (Mr. Ogura, ECCJ): Presentation of the outline of the Thermal and Electrical Technology Handbooks related to the EMHB and the national version of each country; Material 9 (not attached)
- "Updates on the Development of Energy Management Tools" (Ms. Maureen Balamiento, ACE): Presentation of the activities of Technical Directory (TD) and In-house Database (IHDB); Material 10 (not attached)

(4) Session 3: Environmental Awareness and Financing; Awareness and Financing, which are the topics of this Session, were key items at the APAEC, so they were newly added to the PROMEEC Project this fiscal year. The combination of these two topics is not appropriate, but we dared to combine them as a new Session. The planned presentation by the host country was not given, but the matter about Awareness was included in the previous EEC Activities Update by Mr. Ahmad.

1) "Situation of Environmental Awareness and Financial Support System in Japan " (Mr. Ogura, ECCJ): Presentation of the Energy Conservation Law and measures in Japan arising from the whole global warming situation and the issue about exhaustion of natural resources, measures including the recent eco-point system toward increase in the people's energy-saving awareness, the financial support system for energy-saving measures and the case examples of JICA/ ODA energy conservation loan in ASEAN (Climate Change Measure Loan and Two Step Loan) ; Material 11 (not attached)

2) "Financial Support System in ASEAN" (Mr. Pham Van Duong, ACE): This time, the explanation about the background of this matter at the APAEC and the ASEAN SOME Funding System, which was made last time, was not given much. Mainly, the explanation of the tables for International Potential Funding Sources surrounding the ASEAN was given.; Material 12 (not attached)

(5) Q&A

1) A person from the cement company who had the Technical Directory by the Business Council, stated that although the GDP was doubled, the oil consumption was reduced by 8%, referring to the Welcome Remarks by the former Minister Naoshima. Concerning the statement, a question on how it was reduced was given. After checking the content of the statement, we answered, "After the energy-saving activities in the industry over the past 30 years, each company made efforts to reduce the oil consumption through the oil crisis. In addition, the energy

used was shifted from oil to LNG which is a clean energy."

2) Concerning the solar energy technology, there was a question, "How has the Life Cycle Assessment been conducted in Japan". We commented, "We are not specialized in solar energy/cell and cannot answer properly, but the evaluation on the solar energy including disposal has been conducted from the viewpoint of Life Cycle Assessment in the renewable energy field, too."
3) Is there any country where Energy Management is mandatory to industries or buildings? → Although the EM is not directly mandatory, the Japanese Energy Conservation Law requires that the Energy Management designated companies prepare the management standard based on the criteria and execute it. We may say this type of Energy Management is mandatory. In other countries, it seems that it is not included.
4) How does the ASEAN Award, etc. become an incentive to improve for companies? → If the Best Practice is awarded, the company/organization name is publicized. The company status will be upgraded and attention received, which means that further, improvement will be inevitable. This is a virtuous cycle.
5) (About the Online Energy Information System) Is there any criteria for the register? → There is no special criteria, but any organization that can offer technical service, training and information service can register. (Ms. Maureen)
6) Isn't there any copyright problem in the EM Tools? →What is accessible on Web sites has no problem. (Ms. Maureen)
7) (Question by Mr. Ogura to the person from the cement company who had the Technical Directory/CD by JASE-W) At what opportunity did you get this Technical Directory/CD? And what's your impression of this Technical Directory? → He answered that he got it in the Seminar at PROMEEC Building the 2 weeks before, and that the electricity-related contents were informative.
8) Why has the Energy Conservation Law in Japan been revised six times without very long intervals? What revisions were made? → The revisions have been made according to the changes of time and situations; strengthening of Energy Management in industries, making the target consumption standard into two steps for increase of Energy Management designated plans, integration of the heat and electricity consumptions, expansion of the management range by setting units of plants and companies and chain business operators as the management units, inclusion of transportation in which the consumption is increasing in the targets, request of not only report about the energy consumption but also the report about CO_2 emission reduced values for these years, etc. In Brunei Darussalam, the energy-saving law will be developed in the future, and its revisions should be made as needed.
9) (Concerning the ASEAN Fund) Does it have something to do with the Eco Point system in Japan? -> It has nothing with the Eco Point system, but it is eco-friendly. (Mr. Pham)
10) What kind of renewable energy (wind power, solar, hydro power, etc.) can be applied as the most feasible one in Brunei Darussalam? -> How about proposing to the Prime Minister's Office? (Mr. Pham) Then, the project should be conducted on a regional basis and be implemented by any other country.

(6) Breakdown of participants: Mr. Ahmad gave a comment that totally, many Senior Officers participated. In addition to 5 people from the Energy Division of Prime Minister's Office, 2 people from ACE and 3 people from ECCJ, 46 people participated and the breakdown of the participants are as follows:

1) Ministry of Development: 3 people
2) Ministry of Finance: 3 people
3) Ministry of Youth, Culture and Sport: 1 person
4) Ministry of Health: 1 person

5) Ministry of Communication: 1 person
6) Anti-Corruption Bureau, Prime Minister's Office: 1 person
7) Department of Electricity: 2 people
8) Department of Mechanical & Electrical: 1 person
9) Department of Audit: 1 person
10) Other Ministry-related persons: 5 people
11) Royal Brunei Police Force: 2 people
12) Datastream Technology: 3 people
13) Baduri Bank: 3 people
14) Brunei Shell Petroleum: 3 people
15) Brunei National Petroleum Company: 3 people
16) Brunei LNG: 2 people
17) Unit Petroleum: 1 person
18) Brunei Methanol Company: 1 person
19) Brunei Heidelberg Cement: 1 person
20) Institut Teknologi Brunei: 1 person
21) University Brunei Darussalam: 4 people
22) Total E&P Borneo B.V.: 1 person
23) Radio Television Brunei: 2 people
24) Ms. Hiroko Furuno, Japanese Embassy: Participated in the morning session.

(7) Responses at ISW, etc. and issues

1) Relatively many questions were given, but many of them were not directly related with the content of the presentation.
2) All the presentations were conducted in English without interpretation, and they proceeded smoothly. Especially, many of the reports by ACE were short and the presentations ended a little ahead of the schedule.
3) The ISW place was wide sideways, and there was a large pillar at the rear center of the place. Therefore, some blind spots were made with only one screen. We used two screens. As a presenter, it was a little difficult to explain using a laser pointer while paying attention to two screens.

2. Training for the use of the Energy Management Handbook, etc.

The number of participants in the morning was 15 people from the host and 35 trainees. 29 trainees participated in the afternoon workshop. Grouping for the afternoon training was made by the Brunei Darussalam side, and four groups were made according to the number of participants.

Conventionally, the course of the second day was intended to introduce the details and uses of the Energy Management Handbook, In-house Database and Technical Directory for companies and implementing organizations which had special interests in these tools and would like to introduce them. We heard that relating with the fact that about half of the people are the government officer workers in Brunei Darussalam, people in the relatively high positions in each ministry were invited this fiscal year.

In addition, as special circumstances for Brunei Darussalam (in a good sense), they have already prepared the Energy Management Guide and "A Basic Guide to Energy Audit for Building", and they have been in the more advanced stage in the ASEAN. In view of the circumstances, a special content for the second day was provided as follows:

1) In the morning, the Brunei Darussalam explained the above two documents. Before that, the outline of "Energy Management Handbook for ASEAN" which is the basis of the two documents was explained. Explanation of the in-house database and Technical Directory which was made before was omitted (because the outline was explained on the first day's seminar.)
2) Conventionally, "Energy Management Handbook" was explained almost page by page,

but this time, the explanation was given showing the PowerPoint slides. The slide material was prepared for all ASEAN countries. In Brunei Darussalam, because of the limited time, necessary slides were selected as appropriate, and the focus was put on making them understand the relation with the "Energy Management Guide" which was the topic of the next lecture.

3) In the afternoon, mainly the Group Work was conducted. The Group Work was conventionally conducted on the first day, but it was omitted and conducted only on the second day. In the Group Work, the following measures were taken more attentively (than before):
   - One example from the best practices of ASEAN Award Competition in Brunei Darussalam (in 2009, HSBC) and one example from the industry (in 2010, BLNG) were chosen to be used.
   - The orginizer in the host country should have complete control over the guidance of the whole Group Work. (In Brunei Darussalam, the Group Work was conducted last year, too. This fiscal year, it was conducted more smoothly and the result was successful.)
4) In the last item, FP in the host country explained about the efforts made by the government and training courses.

The characteristics for this fiscal year are as described above. The content of the actual training (program) is shown in the Attached Material III-2-2-2.

The implementation result of each item on the day is described below:

(1) Lecture on the detailed content of the Energy Management Handbook, etc. and important guidelines

1) "Outline of EM Handbook" (Mr. Ogawa, ECCJ); Material 13 (not attached)

ECCJ emphasized the connection of the content of the EM Handbook with the following items:

Major questions to this:

- What was the most effective tool among various tools (according to your experience)?
- Who can become Energy Manager?
- What should we do in order that a small number of people do a work for a large area?
- What is the measure to promote awareness?

2) "Energy Management Guide" (Dr. Lim Chee Ming (UBD)); Material 14 (not attached)

Dr. Lim Chee Ming, University Brunei Darussalam, explained about the material (in a booklet form) made by the Brunei Darussalam side. He is used to give lectures at the universities, and his explanation was simple and to the point.

Major questions to this are as follows:

- In Singapore, there is a plan to enhance EE&C education. How about in Brunei Darussalam?
- How will be the training for Energy Manager?
- To whom should we submit any opinion on the Energy Management Guide?
- Isn't too much included in the EM Guide?
- Will the EM Guide become mandatory by law in the future?
- Is any incentive given when Green Management is implemented?
- What should we do to get fund in implementing EE&C?

3) "A Basic Guide to Energy Audit for Buildings" (Mr. Ady Syarmin Taib (ITB)); Material 15 (not attached)

Mr. Haji Ady Syarmin bin Haji Mohamad Taib, Institute Technologi Brunei, explained the material prepared by the Brunei Darussalam side (which was under printing).

Major questions to this are as follows:

- Numeric figures are necessary for the benchmarking of BEEI.
- What is the subsidy for EE&C activities?
- How about the consideration for Government Buildings?
- In the case of a small house, the value of BEEI becomes large. Is there no help for it?

- Spread sheet for BEEI is needed.
- For the design made 10 years ago, it has currently been said that the facilities should be upgraded for EE&C. We are confused about it.

(2) Workshop (group activities)

1) "Guidance for Group Work" (Mr. Sato, ECCJ); Material 16 (not attached)

Before starting the group work, first, ECCJ explained about the basic matters.

After that, the following two study cases were presented:

A) Head-office building of HSBC (Hongkong Shanghai Bank); Material 17 (not attached)

B) BLNG (Brunei LNG); Material 18 (not attached)

A) Mr. Lim Boon Teck, Manager, Corporate Sustainability, gave the presentation. The EM team visited the company 2 years ago. They conducted EE&C activities with enthusiasm, which was reflected in the presentation.

B) Ms. Hjn Nurul Hasanan gave the presentation. They have achieved safe and high efficiency results, which were explained to the point.

2) Experience of group work

In the analysis/evaluation of cases, the Energy Management Guide of Brunei Darussalam was used just as the standard, and the discussion was made on whether the necessary items were conducted without omission.

Based on the discussion result, the items for the presentation made finally are as follows (as usual):

A) Evaluation of energy-saving activities based on the content of the above presentation (Good Points), and

B) Advice on future feasible improvement plan

After the explanation by ECCJ, the work shop was left to the host to give instructions voluntarily.

Four groups were made. The number of people and the selected case in each group are as follows:

Group No	Number of people	Selected case
1	8 people	HSBC
2	8 people	BLNG
3	6 people	HSBC
4	7 people	BLNG

The scheduled time for discussion was one and a half hours. The time was a little reduced but there was no problem.

Sets of bound sheets were prepared for discussion/presentation for each group. Only Group 3 used it during the presentation. (Group 3 also prepared PP, but the PP didn't open successfully on PC and the sheet material was used.) All the other groups prepared the material by PowerPoint on PC.

The points common to all groups were as follows:

- Despite the short period of time, the output was well-organized.
- The discussion was made based on the eight steps in Energy Management Guide.

The points which were different by group were as follows:

- Some groups had a group name, but others didn't.
- Some groups have specified the member's roles, but others not.

3) Comments of the companies used as cases

A) Mr. Lim commented, "The content presented does not indicate the complete actual status. There are some misunderstandings. However, I don't retort item by item because of the time limit."

B) Ms. Hasanan had no comment.

4) Comments of D r. Lim, UBD, ECCJ and Mr. Taib, ITB

There were many opinions that the points described in the above 2) were highly valued. In order to visualize the result, it was summarized in one sheet of table or the

evaluation points were classified by color (by some groups).

(3) Presentation by the counterpart country
Mr. Ahmad, PMO Energy Division, explained under the title of ”Discussion on Proposed Program/Plan of EM Training” about the actual status of EE&C activities, problems and the future plan in Brunei Darussalam (including expectations to Japan).; Material 19 (see the circular.)

(4) Awarding of certificates and closing remarks
Mr. Ogura, manager, Mr. Ahmad and Mr. Pham handed the Certificates to all the trainees.

(5) Breakdown of the participants
It is almost the same as that on the first day and omitted.

4. Visit to companies

Based on this Intensive Seminar-Workshop and Training for the use of the Energy Management Handbook, etc., we chose three companies described below from the companies which want to use the tools such as Energy Management Handbook in Energy Management activities at plants and buildings and promotion of energy saving, and we visited the companies on October 13 and exchanged opinions. For the details, see the Attached Material III-2-2-3.

(1) Ministry of Development
(2) Baiduri Bank Sdn Bhd
(3) Datastream Technology

5. Wrap up Meeting

In the evening of October 13, after the visit to the companies, we had a wrap-up meeting with Mr. Ahmad, FP, and Mr. Pham, ACE at Radisson Hotel. The contents of the meeting are as follows:

(1) We thanked them for the success of the three-day’s EM Project under the great efforts and suport of Prime Minister’s Office with Mr. Ahmad although the minister and organization/system/members were changed. Also, we expressed our gratitude to Mr. Ahmad for his active support and accompany throughout the three days.
(2) On the first and second days, over 50 people participants gathered, which was more than expected, and many related ministries and representative organizaitons/companies, especially, Senior Officers, participated. We expressed out gratitude about this, too.
(3) The lecture on “Energy Management Guide” and ”A Basic Guide to Energy Audit for Buildings” and the instruction about the Group Work by Dr. Lim were given this fiscal year, too, which were given for the fist time last year. All the participants did the Group Work with enthusiasm, and the results which were more successful than last year, were given. We expressed our gratitude and admiration about the subsequent completion and preparation of some EE&C tools. However, we commented that there was another possible improvement in the procedure of Group Work.
(4) They had a desire for Japanese cooperation in the establishment of Energy Management Module in the Master Course of UBD and its implementaion, and they said they would submit a formal request, separately. We replied that upon our receipt of the request, we would study about the procedure with the persons concerned including the METI.

6. Others

(1) For the first time in a year, we visited Brunei Darussalam for the PROMEEC/EM Project. We heard that the minister was changed, the related agency (Prime Minister’s Office) made organizational changes and the personnel was reloacated during the period from several months ago to half a month ago. In the Prime Minister’s Office, the Minister of Energy was changed and a person who came from the military succeeded. It seemed that Mr. Ahmad had difficulty in getting the understanding and approval from the new minister. However, Dr. Lim. UBD (University Brunei Darussalam) who has made efforts

to prepare and spread the EMG (Energy Management Guide) in Brunei Darussalam says that the new minister is on friendly terms with the boss of Dr. Lim at UBD and is easy to talk with.

(2) At present, the position of Director General of the Energy Division to which Mr. Ahmad belongs is vacant. Mr. Sokiaw, permanent secretary, is the direct boss of Mr. Ahmad, and the minister is the supervisor above him. The name of the unit to which Mr. Ahmad belongs was changed from Sustainable Energy to Energy Efficiency & Conservation. Also, Mr. Hakeem and Ms. Dina who seem to have been Mr. Ahmad's capable subordinates were transferred to the other divisions. From that point of view, it seemed that Mr. Ahmad had difficulty, but Mr. Ahmad has been keeping up as a leader. We commented that we could support without much difficulty thanks to Mr. Ahmad.

(3) Furthermore, Mr. Ahmad and Dr. Lim, UBD, said, "We are thinking of incorporating Energy Management Module in Master Course of UBD starting in January next year. We want to allocate two weeks, 40 hours, to the Energy Management Module, and we would like to get the cooperation of ECCJ for pay. We also want to include Energy Audit in it. We will make a forma request, separately, around March to April next year." To this, we commented, "Upon our receipt of the formal written request, we will consult with METI and make a study, with the time and condition taken into consideration."

(4) The related photos are shown in the Attached Material. (not attached)

FINAL AGENDA
Intensive Seminar - Workshop
Promotion Of Energy Efficiency And Conservation (PROMEEC) - Energy Management
Under The SOME-METI Work Programme 2010-2011
Venue: Radisson Hotel **October 11, 2010**

08:00-08:45	Registration
08:45-09:15	Arrival of Guest of Honour
	Recital of Surah Al-Fatihah
	Welcoming Speech by Guest of Honour:Mr. Matsatejo Sokiaw, Permanent Secretary, Energy Division, Prime Minister's Office
	Opening Statement by The Energy Conservation Center, Japan (Mr. Yutaka Ogura, ECCJ)
	Opening Statement by ASEAN Centre for Energy (Mr. Nguyen Manh Hung, ACE)
09.15-10:00	*COFFEE BREAK & GROUP PHOTO SESSION*
10:00-11:15	Session 1: PROMEEC Projects/PROMEEC EM Project: Outline & Achievements
10:00-10:40	Presentation by ACE & ECCJ 1) Outline and Achievements of PROMEEC Project (Mr. Pham Duong, ACE) 2) Outline and Plan of PROMEEC (Energy Management) Project (Mr. Ogura, ECCJ)
10:41-11:14	Presentation by Host Country EEC Activities Update (Mr. Ahmad Mohamad, Head of Sustainable Energy Unit, Energy Division, Prime Minister's Office)
11:15-14:30	Session 2: "ASEAN Energy Management System": Functions & Program
11:15-11:48	Presentation by ECCJ Outline of Updated "ASEAN Energy Management System" (Mr. Ogura, ECCJ)
11:48-12:30	Presentation by ECCJ and ACE Specific Functions and Program 1) ASEAN Award System of Best Practices in E.M. for Industry and Building - Outline, Results of ASEAN Awards for 2009-2010 and Plan for 2010-2011 (Mr. Pham Duong, ACE) 2) Information System - Information System to Disseminate Awarded Cases (Mr. Takashi Sato, ECCJ)
12:30-13:30	*LUNCH*
13:35-14:15	2) Information System (Continued) - Online Energy Information System to Utilize The Existing Implementing Organizations (Ms. Maureen Balamiento, ACE) - Introduction of JASE-World (Mr. Ogura, ECCJ) 3) Energy Management Tools - Energy Management Handbook and other tools (Mr. Ogura, ECCJ) - Updates on the Development of Energy Management Tools (Ms. Maureen, ACE)
14:15-14:25	Q&A
14:25-15:05	*COFFEE BREAK*
15:05-15:46	Session 3: Environmental Awareness and Financing
15:05-15:35	1) Situation of Environmental Awareness and Financial Support System in Japan (Mr. Ogura, ECCJ)
15:35-15:4 1	2) Financial Support System in ASEAN (Mr. Pham, ACE)
15:41-15:46	Q&A
	End of Day 1 Intensive Seminar-Workshop





Final AGENDA

Training: Utilization of "Energy Management Handbook and Tools for ASEAN"
Promotion of Energy Efficiency And Conservation (PROMEEC) - Energy Management
Under The SOME-METI Work Programme 2010-2011

Venue: Radisson Hotel **October 12, 2010**

08:00-08:30	Registration
08:30-12:30	Session 1: Outline of Energy Management Handbook/Guide & Other Tools by ECCJ/Host Country
08:30-09:30	Explanation by ECCJ: Outline of Energy Management Handbook for ASEAN (Mr. Ogawa, ECCJ)
09.30-10:00	*COFFEE BREAK*
10:00-12:00	Explanation by Host Country - Outline of Energy Management Guide (Dr. Lim Chee Ming, UBD) - Outline of Basic Guide to Building Energy Audit (Mr. Ady Syarmin Taib, ITB)
12:00-12:15	Q&A
12: 15-13:30	*LUNCH*
13:30-17:00	Session 2: Workshop (Training for Small Group Activities) by Host Country/ECCJ
13:30-13:45	Guidance for Group Work (Mr. Sato, ECCJ)
13:45-14:08	(Experience of Dissemination of ASEAN Award Best Practices of EM) Explanation of Best Practices/EM in Building by Host Country (Case 1) - HSBC by Mr. Lim Boon Teck, HSBC
14:09-14:24	Explanation of Best Practices/EM in Industry by Host Country (Case 2) - BLNG by BLNG
14:25-16:00	Group Work Based on Cases Studies 1 & 2 by Dr. Lim - Preparation for Group Work - Discussion by Groups: Guideline and Basic Plan to Improve Using "Energy Management Handbook/Guide"
16.00-16: 12	*COFFEE BREAK*
16:12-16:55	Presentation by Participants: Results of Group Work for Cases Studies 1 & 2
16:55-17:05	Comments by ECCJ Experts and Dr. Lim & Dr. Ady
17:07-17:12	Discussion on Proposed Program/Plan of EM Training including last year activity in Host Country moderated by FP
17:13-17:18	Ceremony of Certificates
17:19-17:20	Closing Remarks by Host Country
	COMPLETION OF TRAINING

Attached Material III-2-2-3: Records of the visit to the related companies/organizations

Visit to PROMEEC (Energy Management) related organization: Brunei Darussalam (No. 1)
Visit to Ministry of Development

NO.	Item	Content
1	Date and time	October 13, Wednesday 8:15 to 10:30
2	Visit place	Ministry of Development, Headquarter, Old Airport
3	Counterparts (MOD)	Mr. Abidin Saidin: Acting Head, Building Control & Construction Industry Division (ABC), Ministry of Development (MOD), Dr. Rehaniyatr (DME/PWD-MOD, and other 10 people
4	Accompanying persons (PMO)	- Mr.Ahamad Bin Haji Mohaned: Head of Energy Efficiency & Conservation Unit, Energy Division, Prime Minister's Office (PMO) - Mr. Muhammad Aznul Azrin Zain: Social Duties Officer, EE&C, ED, PMO
5	Visitors (ACE, ECCJ)	- Ms. Maureen (IT Specialist, ACE), Mr. Pham Van Duong (Technical Expert) - Mr. Yutaka Ogura (General Manager, Technical Cooperation Department, ECCJ) - Mr. Fumio Ogawa (Technical Expert, Technical Cooperation Department, ECCJ) - Mr. Takashi Sato (Technical Expert, Technical Cooperation Department, ECCJ)

6. Overview of the company we visited

Mr. Ogura and Mr. Ahamad explained about the outline of PROMEEC and the purpose of the visit. In addition, they expressed their gratitude to Dr. Rehaniyatr (female) for the participation into the two-day seminar and training and the presentation at SGA. They said that the visit is not intended for Energy Audit but for Advisory visit and that it was a just-glance based visit. From the viewpoint of Energy Management, they said that they would advise on whether the energy conservation has been implemented complying with the Key Step.

The building was constructed 16 years ago, and it is a 7-story building. The ministry consists of eight divisions (units) such as Administration and Finance Division (DAF), Land Use, Housing & Environment Policy Planning Division (LHE) and Science Technology & Internal Division (STI), and the number of staff members is 250 people.

7. Content of hearing/consultation

(1) Content of hearing

1) Structure in General: From the material prepared by MOD
   - Construction Type: Low Rise Building
   - Architectural Style: Modernism
   (The building does not face to the south so that the sunlight does not enter.)
2) The outline of the building is as follows:
   - Room area: 933. 12 m^2
   - Floor area: 1,861.2 m^2
   - Total gross area: 13,029 m^2
   - Total gross area for parking: 3,688.8 m^2
3) Air Conditioning System:
   There are two reciprocating liquid chillers and one scroll liquid chiller. The building is cooled by AHU on each floor. They are operated for 14 hours, from 4 o'clock in the morning to 6 o'clock in the evening, on the days of the week except Friday and Sunday. The office hours are from 7:45 in the morning to 4:30 in the evening. They explained that

the chillers have not been in good conditions and the operation has started early in the morning, but they didn't give us sufficient explanation.

4) Lighting:
   36W and 18W electronic ballast fluorescent lamps are used. In some rooms, CFLs are used.
5) They said that the annual electric power consumption was 84,000 kWh/y. We pointed out that it seemed too small and that it must be 840,000 kWh/y. They explained that the value might be the consumption only by air conditioning, but no clear explanation was given. They have not observed the electric power consumption from the viewpoint of BEEI,, and have not noticed that the value is not normal.
6) Mr. Abidin explained that the person who leaves the workplace last turns off the light in the place and checks whether any light remains lit up after all employees left the company. He also said that PCs bear the stickers to promote energy conservation, and they have to create a committee and promote energy conservation in the future. He also explained that they had to consider a system for making proposals to the Management.
7) The room temperature is set at 20°C.
8) Emergency Generator: 500 KVA
9) Chillers: Manufactured by Carrier. The inlet temperature is 8.9°C, the outlet temperature is 6.6°C, and there is no flow controller and inverter. (They explained that there is no need for a controller and an inverter because the operation starts one by one.)
10) The power factor was indicated at 0.8, and we asked about the accuracy. They simply told us there might be a failure in the measuring instrument.

(2) Contents of consultation about our explanation, opinion and proposal on our visit including field inspection

(2)-1 Status of the field

1) The lights were turned off in the Entrance Hall on the first floor. All the fluorescent lamps have refractors.
2) We looked around at each floor, and found places where the lights are left on even if no one is there.
3) The chillers and AHU controllers are located at 50m distant from the main building and locked carefully, so adjustment cannot be made easily.
4) All the three elevators operate during the daytime. The number of operating elevators may be reduced.
5) The setting temperature in the office is low, and the room is air-conditioned too much even though workers are not in the room.
6) Some people sitting by the windows in the room turn on the lights only in the morning and evening.
7) Water was dripping from the cold insulation materials around the chillers. Also, cold insulation is not working at some places. We pointed out later.
8) In the room, the lights are turned on and off using switches provided at about three points. There is no individual switch such as a string switch.
9) During lunch time, they have no practice of turning off the lights and PCs.

(2)-2 Our opinions and proposals

Comments from our side and Mr. Ahamad are as follows:

1) The first step is to grasp the current usage amount by week, month and year (baseline). Based on the data, the effect after improvement will be known. The data should be grasped properly so that an analysis can be made according to the EM Guide.
2) First, energy conservation at no cost/low cost shall be started.
3) A large investment provides an immediate result, but sustainable efforts are needed and important.
   - The whole area of many exterior walls is covered by glass. It makes the inside of building

bright, but it seems that sunlight has a relatively large effect on the temperature of the building inside. The glass walls and window should have double structure, or insulation films should be applied to the glass walls and windows.

4) If the temperature of air-conditioner is raised by 1℃, the electric power can be reduced by 7%. A rise of the setting temperature should be tried.
5) The stand-by electric power is relatively large (this is also 7%), and we recommend that the plugs should be removed from the outlets.

(3) Response of the company we visited

1) As Mr. Abidin admits, some staff members say that they don't care about the electric charges because they are paid by the government. It shows a lack of energy-saving awareness, and systematic measures are required. Mr. Abidin also realized the necessity. Dr. Rehaniyatr says that they would like to spread energy conservation at other ministries if it succeeds at their ministry. This may be the effect of the seminar/training.

8. Overview of field inspection

(1) There a possibility that sensible measures of electric room cannot be taken due to excessively strict management.
(2) The air-conditioning temperature is too low. We emphasized that a rise by 1°C would save energy by 7%.
(3) The AHU controller is in the electric room, and it is not possible to control easily.
(4) As a result of the trial calculation of BEEI, it was found that the obtained value was very abnormal. Therefore, we requested them to check the annual power consumption again.

As mentioned above, most of the staff members of this ministry have little energy-saving awareness. It seems necessary to improve the awareness of the staff, first.

Visit to PROMEEC (Energy Management) related organization: Brunei Darussalam (No.2)
Visit to Baiduri Bank

NO.	Item	Content
1	Date and time	October 13, Wednesday 10:45 to 13:30
2	Meeting place	- Baiduri Bank HQ, Kiarong Complex (Block A & B) - Baiduri Finance
3	Counterparts	- Mr. Pierre Imhof: General Manager, Baiduri Bank HQ - Mr. Andrew Young: Deputy General Manager, Operation Management Div. - Ms. Veronica Chong: Senior Manager, HR & Finance Division - Ms. Dorothy Newn: Manager, Corporate Communications & Marketing - Mr. Azaleen Dato Mustapha: Senior Manager, Treasury - Mr. Tham Boon Kong: Property Manager
4	Accompanying persons (PMO)	- Mr.Ahamad Bin Haji Mohaned: Head of Energy Efficiency & Conservation Unit, Energy Division, Prime Minister's Office (PMO) - Mr. Muhammad Aznul Azrin Zain: Social Duties Officer, EE&C, ED, PMO
5	Visitors (ACE, ECCJ)	- Ms. Maureen (IT Specialist, ACE), Mr. Pham Van Duong(Technical Expert) - Mr. Yutaka Ogura (General Manager, Technical Cooperation Department, ECCJ) - Mr. Fumio Ogawa (Technical Expert, Technical Cooperation Department, ECCJ) - Mr. Takashi Sato (Technical Expert, Technical Cooperation Department, ECCJ)

6. Overview of the company we visited

(1) Baiduri Bank HQ is a new bank which was established in 1994. French capital is partly incorporated. Mr. Pierre Imhof, General Manager, who is in the top position, is a French as you imagine from his name. The total number of the head office and branch offices is 12. The number of employees in 1997 was 85, and that in 2010 is about 500. The head office consists of Block A and Block B.

(2) The outline including the above content was briefly presented using PPT.

7. Content of energy conservation related matters/hearing/consultation

(1) Content of hearing

1) The total floor area of Block A is 3,432.8 m^2 and that of Block B is 858.2 m^2.

2) The monthly power consumptions and the electricity charge amounts for the year 2009 and from January to September of 2010 were shown in the table. Many of the monthly consumptions for 2009, however, were shown with the mark X as unknown, and as a result, the annual consumption for 2009 was not shown. The electricity charge for 2009 was 578,783.27 B$ (1 B$; Brunei $=0.88 US$), and that for the period from January to September of 2010 was 655,778 B$, which already exceeds the previous month. There were wide variations in the power consumption and electricity charge by year, and the power consumption and the electricity charge for each month didn't correspond to each other.

3) Although the power consumption and electricity charge for each month didn't correspond to each other in the same table, the monthly BEEI (Building Energy Efficiency Index) was shown in kWh/m^2 and kWh/FTE (Full Time Equivalent: human resources input conversion). The base monthly values were varying, and it seems that the monthly BEEI

has no great significance. They said that the target value was several hundreds kWh/m^2/Y in FTE 200 people.

4) There are 166 ACs, most of which are split units and which are partly FCUs (Fan Coil Unit). There is no chiller.
5) They want to minimize the energy consumption.
6) The outside glasses are double glazing or tinted windows. They say that the heat balance by daylight from the outside and sunlight is considered.
7) For the ceiling area lighting, fluorescent lamps have been changed to CFLs this fiscal year.
8) The number of copying machines has been reduced by integration.
9) They say that they recommend to set the temperature at 23°C, but it is necessary not to reduce comfortability of employees as well as customers.
10) They say that they have made efforts for paperless from the environmental aspect, and written bills are being replaced with electronic bills.

(2) Explanation, opinion and proposal on our visit including the field inspection

1) We explained the outline of the PROMEEC/EM PROJECT which is the background of the visit. We strongly proposed that with the participants in the ISW & TR on October 11 and 12 as a core, the Energy Management system should be established based on the EM Guide by Brunei Darussalam, and that first, EC Committee and EC Team should be formed and the total energy consumption data (bills may be used) for at least one year should be collected to compile the BEEI.
2) We collected some replies to questionnaire at the PROMEEC/Building. As described in the last sheet, the BEEI for offices in the ASEAN is on the level of 200 kWh/m^2. With reference to this, the energy consumption level will be obtained by calculating the BEEI for Baiduri Bank.
3) We recommended that the BEEIs should be estimated separately for Block A and Block B, and compare them.
4) As the case study at the TR on October 12, we recommended to refer to the case of HSBC which was a bank that received the ASEAN Award as reference. As mentioned in the TR, we emphasized that a rise of the setting temperature for AC by 1°C would result in the energy saving of 7%.
5) It is very good that they conduct the activities from the aspect of Energy Management, too. In order to improve energy-saving awareness, it is expected that more enlightenment stickers will be posted and further activities will be promoted. However, unless the current energy consumption status is grasped properly and the baseline is clarified, the future energy-saving effects cannot be grasped. We recommended to re-compile the data properly.

(3) Response of the company we visited

1) The preparations such as preparation of PPT materials for introduction of the outline as well as studies about BEEI, etc. were made very appropriately.
2) It was found that they were leading the way in implementing energy-saving activities and their awareness was high.

8. Overview of field inspection

1) The setting temperature of the GM's office is 23°C.
2) There are large glass surfaces, which are double glazing.
3) At the work zone, the lights are turned off when no one stays there.
4) CFLs are also used.
5) In some vacant meeting rooms, however, the lights were left lit up and AC remained ON.
6) A considerable amount of natural light is taken in.
7) In Block B, local switches for the ceiling area lighting are adopted at IT Center.

Visit to PROMEEC (Energy Management) related organization: Brunei Darussalam (No.3)
Visit to DATASTREAM TECHNOLOGY (DST)

NO.	Item	Content
1	Date and time	October 13, Wednesday 14: 15 to 17:00
2	Meeting place	Datastream Technology (DST), Headquarters
3	Counterparts (DST)	- Mr.Awang Muslim bin Hj Mohd Yussof (Manager, Electric Power Services Group Asset Management), and other 6 people
4	Accompanying persons (PMO)	- Mr.Ahamad Bin Haji Mohaned: Head of Energy Efficiency & Conservation Unit, Energy Division, Prime Minister's Office (PMO) - Mr. Muhammad Aznul Azrin Zain: Social Duties Officer, EE&C, ED, PMO
5	Visitors (ACE, ECCJ)	- Ms. Maureen (IT Specialist, ACE), Mr. Pham Van Duong(Technical Expert) - Mr. Yutaka Ogura (General Manager, Technical Cooperation Department, ECCJ) - Mr. Fumio Ogawa (Technical Expert, Technical Cooperation Department, ECCJ) - Mr. Takashi Sato (Technical Expert, Technical Cooperation Department, ECCJ)

6. Overview of the company we visited

At the beginning of the meeting, prayers were given and the explanation about Safety Evacuation was given. Mr. Ogura explained about the purpose of the visit and introduced the PROMEEC and visitors. The business of the company is tele-communication. The company moved in the 14-story glass-walled building in 2003. At present, it has 400 employees.

(1) Outline of the building

- Total Gross Area: 9,110 m^2
- Parking Area: 8,010 m^2
- Total Air Conditioning area: 8,851 m^2
- Annual electric power consumption: 3,982.510 kWh/y
- BEEI: 437.16 (too high, it's a problem.)
- Operation Hours: 7.5 Hours
- Chiller: 6 units, 2 of them are stand-by.
- AHU (example on the 7th floor): Supply: 10°C, Return: 15°C
- The 13th and 14th floors are the idling space which is only used at the time of events held about twice a year. No energy is consumed. The 12^{th} floor is for executives and the floors from 3^{rd} floor to 11th floor are used as general offices.

7. Content of hearing/consultation

(1) Content of hearing

1) This time, 3 subordinates were sent to the seminar/training. They learned a lot.
2) The room setting temperature is 22°C and it is adjusted by room.
3) To prevent heat from entering from the windows, V-Cool (Tinted window) is adopted.
4) To save energy, LCD type monitors are adopted for PCs.
5) Fluorescent lamps have been changed to the highest efficient ones.
6) The photocopy machine is placed at the center of the room for shared use.
7) The BEEI is very large, and they want to know the cause.
8) They have six 313 kW chillers and four 45 kW pumps. Three of the pumps operate 24 hours a day.
9) Stand-by generator: 2 units of 837/670

10) Office Equipment: PC (150W); 284 sets, Printer (1200W); 24 sets, Fax Machine (500W); 10 sets, Photocopy; 12 sets
11) Lighting: FL 18W: 117 pieces
FL 36W: 1320 pieces
FL 40W: 192 pieces
Halogen: 20W; 103 pieces, 50W; 209 pieces, 300W; 32 pieces, 1000W; 2 pieces
12) Electric power consumption ratio: Air-conditioner 80%, lighting 7%, Office equipment 11%

(2) Contents of consultation about our explanation, opinion and proposal on our visit including the field inspection

1) Energy conservation should be started with No/Low Cost Measures complying with the EM Guide.
2) A rise of the setting temperature of air-conditioner by 1°C can save the electric power by 7%.
3) The reason why the BEEI is large may be that the building is fully glass-walled and the chillers operate 24 hours a day because the Call Center operates 24 hours a day.
4) It has been decided that the 24-hour operating Call Center will be moved to another place. 1.5 units of chillers among 6 chillers were used for the Call Center so far.

(3) Response of the company we visited

Mr. Wang and his subordinates know that the BEEI is high, and they are considering about how the energy consumption should be reduced. The fact that they sent 3 staff members to the seminar/training may show their intention. They have requested Carrier, which is a manufacturer of chillers, to present the FS(Feasibility Study) and to study about proposed measures. Although the FS was created at the beginning of this fiscal year, it mentioned, “ECCJ chose DST and visited it.” Since it is quite recently that they chose DST, we do not quite understand it.

8. Overview of field inspection

1) In the near future, the VAV (Variable Air Volume) will be introduced to control the temperature automatically.
2) It seems that the energy consumption is large because of the building structure (fully glass-walled) and the large energy consumption of the 24-hour operating Call Center. Change of the glasses to double glazing and the transfer of the Call Centre will reduce energy consumption.
3) Awareness and training for the employees should be promoted.
4) The energy consumption of each floor should be grasped (the sub-meter should be also set up), and monthly data should be obtained. In order to raise the incentive for energy conservation, it is necessary to let the employees compete by floor units and provide bonus.
5) The number of switches should be increased so that the lights can be turned off more frequently.
6) In Brunei Darussalam, there is another similar glass-walled building for TV company. We recommend that the inquiry should be made on what kind of energy-saving measures have been taken there and how high the BEEI is.

We made discussions as above. It is necessary to follow up the improvements for one year.

III-2-3. Cambodia

1. Implementation of Intensive Seminar-Workshop

The EM Project in Cambodia was held at Apsara Angkor Hotel in Seam Reap City, which is located 250 km northwest from the capital, Phnom Penh. Seam Reap City is the famous place for the World Heritages, Angkor Wat and Angkor Thom. With the background, many of participants were people involved in hotel business. We had a preliminary meeting with Mr. Vuthy, FP, and Ms. Irma, ACE, in the evening of the day when we arrived, which was the previous day of the seminar, and checked the meeting place and the materials. The number of participants was about 34 including the host people. The program is shown in the Attached Material III-2-3-1.

(1) Welcome Remarks: Mr. Vuthy (Deputy Director, Dept. of Energy Technique, Ministry of Industry, Mines and Energy) who is a Focal Point of Cambodia side in place of Mr. Tun Leang (General Manager of Energy Dept., MIME) who was scheduled to address the remarks, Mr. Ogura and Ms. Irma Suryani, ACE, (who was in place of Ms. Maureen who would participate in the afternoon) expressed their gratitude to the cooperating organizations from their own positions and presented the significance and the future utilization/development of energy conservation and the PROMEEC/EM PROJECT.

(2) Session 1: PROMEEC Projects/PROMEEC EM Project: Presentation of Outline & Achievements of PROMEEC Projects and EM (Energy Management infrastructure improvement t) projects

1) "Outline and Achievements of PROMEEC Project" (Ms. Irma, ACE): Presentation of the past status of EEC activities in the APAEC 2010-2015 Program and three PROMEEC projects; Material 1 (not attached)

2) "Outline and Plan of PROMEEC (Energy Management) Project" (Mr. Ogura, ECCJ): Presentation of this fiscal year's plan for the EM PROJECT; Material 2 (not attached)

3) "PROMEEC Project Activities in Cambodia" (Mr. Vuthy): Concerning the electric power situations in Cambodia, electricity is supplied to only 20% of all houses (cities; 60%, local regions; 10%). The electric charge is 9-25 cent/kWh at the places having the power network, which is a little high. In the energy policy, it was specified that an appropriate amount of electric power should be supplied to all over the country at an appropriate price. They presented that change of 100 million incandescent lamps to CFLs would reduce the power consumption by about 50MW, and this would be an impact that corresponds to one power plant requiring an investment of 50 million US$. The actual development result of the three PROMEEC projects in this country was presented, and the potential energy-saving estimations at rice mill, brick kiln, rubber refinery and garment sector by UNIDO were presented; Material 20 (not attached)

(3) Session 2: Presentation of Functions and Program of ASEAN Energy Management System

1) "Outline of Updated ASEAN Energy Management System" (Mr. Ogura, ECCJ): ASEAN EM System was extracted from this year's plan, and we explained about the dissemination of ASEAN Award and EMHB and specific development plan of Functions & Other Tools.; Material 4 (not attached)

2) Specific Functions and Program

A) ASEAN Award System of Best Practices in E.M. for Industry and Building
- "Outline, Results of ASEAN Awards for 2009-2010 and Plan for 2010-2011" (Ms. Irma ACE): Presentation of the evaluation result for the EM section at BOJ and the future issue; Material 5 (not attached)

B) Information System

- "Information Analyses to ease Dissemination of Awarded Cases" (Mr. Sato, ECCJ): Explanation about application for this fiscal year's EM section and analysis result of the award-winning case; Material 6 (not attached)
- "Online Energy Information System to Utilize The Existing Implementing Organizations" (Ms. Maureen, ACE): Introduction of Online Energy Information System and requests by the participants/users. At present, 16 organizations have registered as implementing organizations. ; Material 7 (not attached)
- "Introduction of JASE-World" (Mr. Ogura, ECCJ): In connection with the e-Directory for Technologies & Equipment, how to use the JASE-World and its Technical Directory was presented.; Material 8 (not attached)

C) Energy Management Tools

- "Energy Management Handbook (EMHB) and Other Tools" (Mr. Ogura, ECCJ): Presentation of the outline of Heat and Electricity Technology Handbook related to the EMHB and introduction of the each country's national version; Material 9 (not attached)
- "Updates on the Development of Energy Management Tools" (Ms. Maureen Balamiento, ACE): Presentation of the status of activities for Technical Directory (TD) and In-house Database (IHDB); Material 10 (not attached)

(4) Session 3: Environmental Awareness and Financing; The host country gave the presentation.

1) "Situation of Environmental Awareness in Cambodia" (Mr. Vuthy, MIME): The report was easy to understand, in which the global warming issue was recognized firmly and many photos were used. The industries in Cambodia are mainly small-scale industries and the consumption of fossil resources is still small. Therefore, they mentioned that the effect of climate change on the country was not large, but the effect of use of higher energy efficiency lighting (CFL) was presented, their efforts on renewable energy were listed up, and they mentioned about improvement of awareness through education, etc. In addition, they clarified awareness and barrier from the financial and legal aspect.; Material 21 (not attached)
2) "Situation of Environmental Awareness and Financial Support System in Japan" (Mr. Ogura, ECCJ): Presentation of the Energy Conservation Law and measures in Japan arising from the whole global warming situation and the issue about exhaustion of natural resources, measures including the recent eco-point system toward increase in the people's energy-saving awareness, the financial support system for energy-saving measures and the case examples of JICA/ODA energy-saving loan in ASEAN (Climate Change Measure Loan and Two Step Loan) ; Material 11 (not attached)
3) "Financial Support System in ASEAN" (Ms. Maureen, ACE): The background of this matter at the APAEC and the international potential funding sources surrounding the ASEAN SOME Funding System and the ASEAN were presented, but no description about Japan was included. ; Material 12 (not attached)

(5) Q&A

1) It is expected that in Cambodia, much solar energy can be used. How about the introduction plan of solar system into hotels? Why hasn't it been developed more positively? → They expressed their agreement with the idea, but there are some problems such as the high import tax from China, which is 30%. (Mr. Vuthy)
2) How about the LED promotion measure? → The person in charge of Ministry of Commerce (Mr. Vuthy) → As Mr. Vuthy explained about the estimation example of CFL previously, how about studying about LED, too? (Mr. Ogura). The electric charge is expensive and it should be studied on the economical base. (Mr. Sato)
3) The power standard of IEEC applies to Transmission for Household, but it is not

applicable to Building yet. Don't you suggest that the ISO Standard should apply to the ministry? If it is available, when will it be introduced? It seems that JICA also has developed the standard. How about it? → They have not been introduced yet. (Mr. Vuthy) We have no information of standard consideration of JICA. (Mr. Ogura)

4) The participant from Cambrew (Mr. Ty Puthy) asked about the result of the visit on the PROMEEC Industry in September this fiscal year and about the sharing of the experience at the OJT Energy Audit by the PROMEEC Industry Team with the participants in this seminar. They gave us comments about cooling system, steam, AC, air compressor, etc., but change of compressor according to the recommendation will cost too much and will be difficult to realize. → If there is any inquiry to ECCJ Expert, contact us through Mr. Vuthy. Then, we will study. (Mr. Ogura)

5) The Cambodian government has been promoting energy conservation of the demand side mainly. How is the energy conservation of the supply side conducted in Japan? How is the efficiency of electrical products managed in Japan? → The efficiency of power plant has been managed as one of benchmarks in the Energy Conservation Law in Japan. The efficiency of products is regulated in the Top Runner Program and also regulated by Power Factor as the criteria/management standard guide. (Mr. Ogura)

6) Can the fund of ASEAN be applied? → Application shall be submitted through FP, and then SOME of ASEAN will make a judgment. (Ms. Maureen) → Is there any special application condition for the Fund? → There is no special condition. (Ms. Maureen)

(6) Breakdown of participants

1) People involved in hotels: 18 people; Sofitel Angkor, Aspara Angkor, Le Meridien Angkor, Raffles Grand, Angkor Century, Monoreach Angkor, Empress Angkor, Allson Angkor, Pacific, LonRatanak Angkor, Borei Angkor, Angkor Miracle Resort, The Sothea

2) People involved in industries: 2 people; Cambrew (2 people)

3) Commercial: 2 people; Lucky Mall, Canadian Bank

4) Local governmental persons concerned: DIME (Department of Industry, Mine and Energy); 3 people, Department of Electricity; 1 person

5) Ministry of Industry, Mines and Energy (MIME):3 people; Mr. Lieng Vuthy, Mr. Khlaing Amaradararith, Mr. Khlauth Ousa*(*: His father is a vice minister of MIME.)

(7) Responses at ISW, etc. and issues

1) During the presentation, we asked the participants about their divisions (hotel, industry, business, government-relations, etc.), whether they had ever participated in the past PROMEEC projects, they had heard about the project, they had known/heard about the Energy Management and ESCO, etc. They responded to the first question about the divisions by a show of hands, but it seemed that they had hardly participated in the project and had hardly known about them.

2) Many of the participants were people involved in hotels, but no one raised hands to the question on whether they had heard about BEEI/EEI.

2. <u>Training for the use of the Energy Management Handbook, etc.</u>

(8+1)* people from the host and 28 trainees participated. The number of trainees who participated in the afternoon workshop after finishing the morning lecture was 26. According to the number of participants, three groups were made for the Group Work.

* 3 people from ECCJ, 2 people from ACE, 3 people from MIME and Mr. Van, presenter from Sofitel Hotel

As mentioned previously, conventionally, the workshop on the second day was intended for companies and implementing organizations which considered introduction of the tools such as Energy Management Handbook, In-house Database and Technical Directory. This time, the workshop was held at Seam Reap, and so most of the participants were peopled involved in hotels. Therefore, from a fundamental point of view, we focused on that they would understand the methodology of Energy Management Handbook correctly and apply it to their own operations.

As mentioned before, we planned the second day for this fiscal year's workshop as follows, considering the PROMEEC (EM) program is in Phase-3:

1) We used the whole morning on the explanation of "Energy Management Handbook".
2) The "Energy Management Handbook" was explained using PowerPoint slides.
3) We used the whole afternoon on the second day only for the training of Group Work. The following conditions were set for the training:
   - The case of Sofitel Angkor Hotel in Cambodia shall be used.
   - The host (Cambodia side) shall have complete control over the whole Group Work.
4) At the last item, Cambodian FP (Mr. Vuthy) explained about the government efforts, training courses, etc.

The characteristics of this fiscal year's workshop were as mentioned above, and the content of the actual training (program) is shown in the Attached Material III-2-3-2.

The implementation result of each item for the day is described below.

(1) Lecture on the detailed content of the Energy Management Handbook and important guidelines (Mr. Ogawa, ECCJ); Material 13 (not attached)

As described later, about 75% of the trainees were people involved in hotels. Therefore, we tried to bring up the topics related to hotels in the explanation of the content of Energy Management Handbook. As a result, the trainees looked very interested in the lecture.

Two questions concerning the content of lecture were given. One was about the fixed part and the fluctuant part of the energy consumption, and the other was about seven tools of QC.

For the former question, we showed the corresponding slides again and emphasized that increase in the energy intensity could be controlled to some degree by reducing the consumption of the fixed part even when the occupancy rate of hotel was reduced.

For the latter question, we explained briefly about seven tools showing each of them by slides. We realized through this lecture that Japanese effective methods such as 5S and activities by small groups had not been widely used (at least in the hotel industry in Cambodia). Giving education in this field will lead to successful results not only in energy conservation but also in many other fields.

(2) Workshop (group activities);

1) "Guidance for Group Work" (Mr. Sato, ECCJ): Before starting Group Work, ECCJ explained about the basic matters. ; Material 16 (not attached)
2) Presentation of the efforts for energy conservation by Sofitel Angkor Hotel; Material 22 (not attached)

Sofitel Angkor Hotel applied for the 2009 ASEAN Energy Award Competition and won the 2nd Runner-up. We distributed the copy of the application form to the trainees as the training material.

Mr. Sam Van, Sofitel Angkor Hotel, gave supplementary explanation below to the trainees:

- They did all necessary things starting with top management commitment and organization as described in the material.
- Among them, SGA (Small Group Activities) were conducted in all the departments. Without them, energy-saving activities wouldn't have been successful. (We thought that he said so, but when we asked about the activities again in the advisory visit on the next day, we were told that each 2 people from six departments such as Food &

Beverage Services, Kitchen, and Housekeeping are sent to the Energy Conservation Team for which Mr. Van, Engineering Manager, serves as chairman and they hold a meeting once a week to grasp and manage the status of energy-saving activities. It seems that the activities are different from Japanese small group activities.)

- We gave the training for raising awareness of all employees.

After that, he didn't belong to any group and answered the questions from the members of each group as needed.

3) Experience through Group Work

In the analysis/evaluation of cases, we decided to discuss whether the necessary items were implemented without omission using the Energy Management Handbook as a standard.

The final presentation items based on the discussion result were as follows (in the same way as in many other countries):

A) Evaluation of energy-saving activities based on the above presentation contents (Good Points), and

B) Advice on the future possible improvement plan

After the explanation by ECCJ, we left the group work to the voluntary guidance by the host.

Three groups were made. The number of people in each group is as follows:

Group No.	Number of people
1	8 people
2	9 people
3	9 people

It was decided that the time for discussion shall be one and a half hours as scheduled.

One set of blank paper binded in a board was prepared for each group's discussion/presentation. Every group filled in the blank paper during discussion.

In the presentation by each group, each group had its own name and presented the composition of members. Good points and suggestions for the future were output, and each group listed up more suggestion items (than expected).

4) Apart from the Group Work, Cambrew presented the state of energy-saving activities. The Major Industry team of ECCJ visited the company in September this fiscal year and conducted an audit. In the presentation, the guidance made at the audit was included. And the circulation of the material was omitted.

5) Comments from ECCJ and MIME

- We were impressed with the Group Work because it was generally conducted very smoothly. Since most of the participants had no experience of Group Work, we were concerned. But there was no problem.
- Concerning the principal point of this Group Work, "Use of KSA (Key Step Approach)", Group 1 did very well, but the other groups didn't present sufficiently.
- We think that with the same theme, each group studied a lot by watching the other groups' presentations.
- We expected that the case adopted this time was a successful example and it might be difficult to find suggestions. But every group raised a lot of suggestions and did well.
- In the case of hotels, basically, Good Housekeeping should be done first. (MIME)

(3) Presentation of the host country

Mr. Vuthy explained about Proposed Program/Plan of EM Training in Cambodia that they had a plan for translating the Energy Management Handbook into Cambodian language, they would make a plan for another seminar for that purpose, and they had an objective of spreading it to energy consumers over the country.

(4) Awarding of certificates and closing remarks

Mr. Ogura, Mr. Vuthy and Ms. Irma came up on the platform and handed certificates to the participants. Ms. Maureen, ACE, gave an address of thanks and closing remarks.

(5) Breakdown of the participants (excluding the host (8+1) people)

1) People involved in hotels	21 people
2) People involved in plants	2 people
3) Government (central/local)	2 people
4) Others	3 people
Total	28 people

3. Visit to company

Based on this Intensive Seminar – Workshop and Training for the use of the Energy Management Handbook, etc., we chose two companies mentioned below from the companies which want to use the tools such as Energy Management Handbook for Energy Management activities at plants and buildings and for promotion of energy conservation, and we visited the companies on October 19 for opinion exchange. For the details, see the Attached Material III-2-3-3.

(1) Sofitel Angkor Hotel
(2) Le Meridien Angkor Hotel

4. Wrap up Meeting

After we visited Le Meridien Hotel, we returned to Apsara Hotel where we stayed and Mr. Vuthy and Mr. Khlaing, MIME, Ms. Maureen, ACE, Ms. Irma and three people from ECCJ had a wrap up meeting for this PROMEEC EM Project in Cambodia to confrim the following points:

(1) We expressed our thanks for the successful closing of Intensive Seminar - Workshop, Training Course and Advisory Visit which had been well prepared by the efforts of Mr. Vuthy, et. al, MIME.
(2) We also expressed our thanks to three people from MIME for taking their good leadership as well as giving guidance and comments to each group in the Group Work.
(3) Concerning the wide spread of EMHB (Energy Management Handbook), the translation into the Cambodian language (Khmer) has not been proceeding because of the lack of budget. We suggested that although translation and printing require the budget accordingly, the whole EMHB does not have to be translated and it should be considered about translation starting with Part II for distribution of the translation volume and cost. If it is still difficult from the aspect of budget, they should consult with ACE. (In the background, the idea that the translation and printing was requested to GTZ, Germany, because of the lack of budget was raised the other day, but we judged the idea was not proper and told them that we could give a little more support.)
(4) They wanted to conduct the EMHB Training in several provinces in the future, and we asked them to make a try.
(5) We knew through this visit that Le Meridien Hotel, which was guided by USA Starwood as parent company, has been conducting Energy Management activities positively. As we told them during the visit, we asked to instruct to apply for the ASEAN EM Award next year.
(6) We told them that we would respond to any question or inquiry from Sothea Hotel and Cambrew through Mr. Vuthy.

5. Others

The related photos are shown in the Attached Material. (not attached)

Cambodia version

Attached Material III-2-3-1 Agenda of ISW

FINAL AGENDA
Intensive Seminar - Workshop
Promotion of Energy Efficiency And Conservation (PROMEEC) - Energy Management
Under The SOME-METI Work Programme 2010-2011

Venue: Siem Reap **October 15, 20 10**

08:30-09:00	Registration
09:00-09:10	Welcome Remarks by Mr. Lieng Vuthy, Deputy Director of Energy Technique, MIME
09:10-09:20	Opening Statement by The Energy Conservation Center, Japan (Mr. Y. Ogura, ECCJ)
09:20-09:30	Opening Statement by ASEAN Centre for Energy (Ms. Irma Suryani, ACE)
09.30-10:00	*COFFEE BREAK & GROUP PHOTO SESSION*
10:00-11:15	Session 1: PROMEEC Projects/PROMEEC EM Project : Outline & Achievements
10:00-11:11	Presentation by ACE & ECCJ 1) Outline and Achievements of PROMEEC Project (Ms. Irama, ACE) 2) Outline and Plan of PROMEEC (Energy Management) Project (Mr. Y. Ogura, ECCJ)
11:11-11:26	Presentation by Mr. Lieng Vuthy, MIME Realized Activities/Outstanding Improvement through PROMEEC Projects
11:26-14:30	Session 2: "ASEAN Energy Management System" : Functions & Program
11:26-11:56	Presentation by ECCJ Outline of Updated "ASEAN Energy Management System" (Mr. Y. Ogura, ECCJ)
11:56-12:40	Presentation by ECCJ and ACE Specific Functions and Program 1) ASEAN Award System of Best Practices in E.M. for Industry and Building - Outline, Results of ASEAN Awards for 2009-2010 and Plan for 2010-2011 (Ms. Irma, ACE) 2) Information System - Information Analyses to Ease Dissemination Awarded Cases (Mr. Takashi Sato, ECCJ)
12:40-13:33	*LUNCH*
13:33-14:52	Presentation by ECCJ, and ACE 2) Information System (Continued) - Online Energy Information System to Utilize The Existing Implementing Organizations (Ms. Maureen, ACE) - Introduction of JASE-World (Mr. Y. Ogura, ECCJ) 3) Energy Management Tools - Energy Management Handbook and other tools (Mr. Y. Ogura, ECCJ) -Updates on the Development of Energy Management Tools (Ms. Maureen, ACE)
14:53-15:20	Q&A
15:20-15:40	*COFFEE BREAK*
15:40-17:00	Session 3: Environmental Awareness and Financing
15:40-15:48	1) Situation of Environmental Awareness in Cambodia (Mr. Lieng Vuthy, Deputy Director of Energy Technique)
15:48-16:22	2) Situation of Environmental Awareness and Financial Support System in Japan (Mr. Y. Ogura, ECCJ)
16:22-16:28	3) Financial Support System in Host Country and ASEAN (Ms. Maureen, ACE)
16:28-17:00	Q&A
	End of Intensive Seminar-Workshop

Attached Material III-2-3-2 Agenda of Training

DRAFT AGENDA

Training: Utilization of "Energy Management Handbook and Tools for ASEAN"

Promotion of Energy Efficiency and Conservation (PROMEEC) - Energy Management

Under The SOME-METI Work Programme 2010-2011

October 18, 2010

08:30-09:00	Registration
09:00-12:30	Session 1: Seminar by ECCJ
09:00-10:32	Explanation by ECCJ: Outline of Energy Management Handbook for ASEAN (part 1) (Mr. Fumio Ogawa, ECCJ)
10.32-10:52	*COFFEE BREAK*
10:52-12:09	Outline of Energy Management Handbook for ASEAN (part 2) (Mr. F. Ogawa, ECCJ)
12: 15-12:45	Q&A
12:45-13:38	*LUNCH*
13:38-17:00	Session 2: Workshop (Training for Small Group Activities) by Host Country/ECCJ
13:38-13:58	Guidance for Group Work by Mr. T. Sato, ECCJ
13:59-14:05	(Experience of Dissemination of ASEAN Award Best Practices of EM) Explanation of Best Practices/EM in Building by Sofitel Angkor Hotel (Case)
14:06-15:28	Group Work Based on Cases Study by Host Country/ECCJ - Preparation for Group Work - Discussion by Groups: Guideline and Basic Plan to Improve Using "Energy Management Handbook"
15.28-15:57	*COFFEE BREAK*
15:57-16:08	Presentation by Participants: Results of Group Work for Cases Study
16:10-16:18	Presentation of Result on PROMEEC Industry in Cambrew by Cambrew
16:19-16:34	Comments by ECCJ Experts
16:35-16:46	Discussion on Proposed Program/Plan of EM Training in Host Country moderated by Mr. Vuthy
16:30-16:45	Awarding Ceremony of Certificate to Participants
16:45-16:50	Closing Remarks by Ms. Maureen, ACE
16:50	COMPLETION OF TRAINING

Attached Material III-2-3-3: Records of the visit to the related companies/organizations

Visit to PROMEEC (Energy Management) related organization: Cambodia (No. 1)
Visit to Sofitel Angkor Hotel

NO.	Item	Content
1	Date and time	October 19, Tuesday 9:00 to 11:00
2	Meeting place	Sofitel Angkor Hotel
3	Counterparts	- Mr.Sam Van (Engineering Manager) and his subordinate
4	Accompanying persons (MIME)	- Mr. Lieng Vuthy - Mr. Khlaing Amaradararith (*MIME: Ministry of Industry, Mines and Energy)
5	Visitors (ACE, ECCJ)	- Ms. Maureen Balamiento (IT Specialist, ACE), Ms. Irma Suryani (ACE) - Mr. Yutaka Ogura (General Manager, Technical Cooperation Department, ECCJ) - Mr. Fumio Ogawa (Technical Expert, Technical Cooperation Department, ECCJ) - Mr. Takashi Sato (Technical Expert, Technical Cooperation Department, ECCJ)

6. Overview of the company we visited

First, Mr. Ogura expressed his thanks for the participation of Sofitel Hotel in the seminar/training and explained about the purpose of visit and the outline of PROMECC. This hotel applied to the EM of the 2008 PROMEEC Award system and won the 2nd Runner-up. The number of employees of this hotel is 320, and the hotel opened eight years ago. The area of the whole site is 60,000 m^2 and the area of the garden is 30,000 m^2.

Mr. Sam Van, who guided us, was Quality Manager at ITW (conglomerate company) in the US. The former Engineering Manager of Sofitel was transferred to Sofitel newly established in Phnom Penh, and Mr. Sam Van was appointed swiftly to the new post at the end of September this fiscal year. He looked very busy, saying “I grasp most of the content of my work, but I don’t have enough time.” We hurriedly had a meeting at the hotel lobby and finished the observation tour in the hotel. The Engineering Division takes on the task of giving energy-saving education to new employees and temporary staff members in addition to its original tasks.

7. Content of hearing/consultation

(1) Content of hearing

1) Outline of hotel (by the 2008 ASEAN EM Award Entry Form)
   - Type of Building: Single core/1 Shape/3 Stories/1 Basement
   - Total Gross Floor Area (TGFA):60,000 m^2
   - Gross settable area: 1.195 m^2
   - Car Park Area: 5,000 m^2
   - Air Conditioned Area (ACA): 30,000m^2
   - Non-air-conditioned area: 30,000m^2
   - Plot area(Total GFA/ground area): 60%
   - Number of Guest Room: 238
   - Fresh air exchange rate: 1:3
   - Annual energy consumption: 3,141,120 kWh/y
   - BEEI: 4.3 kWh/m^2 (This is the value for TGFA on a monthly basis. On an annual basis, ACA is 105 kWh/m^2. The BEEI is very low for hotel. We requested to re-check the values.)
2) Energy management: The Energy Management Committee is organized, which consists of 12 people in total, one to two representative persons from each division. As no/low cost

measures, they implement the turning-off of lights and the reduction of the number of fluorescent lamps.

3) The energy consumption data is collected every day, every week and every month. If any unusual change is found, they take an immediate action. They also compile the energy consumption data from the viewpoint of number of guests and occupancy.
4) Recent matters to be specified for Sofitel Hotel
   - Biogas are produced from kitchen wastes and used as fuel for sustainability of kitchen (about 10 m^3 fermentation tank).
   - Condensing heat of chillers is used as the heating source of hot water.
5) The boiler and chillers are old and planned to be replaced with new ones.
6) The owner has enthusiasm for energy conservation from the viewpoint of cost reduction. Involvement of Management should be continued from now on.

(2) Explanation, opinion and proposals on our visit including the field inspection

1) Concerning the BEE Index, although the figures are abnormal, the base data should be clarified. Specifically, it is possible that the usage of fuel other than electricity can be unified and compiled into MJ.
2) We want them to use the EMHB more positively.

(3) Response of the company we visited

1) Mr. Sam Van is very active, and he said that they have a system for collecting opinions from the employees and their motto is Open, Transparency.
2) Mr. Sam expressed his thanks for the 2-day training because Japanese experiences were incorporated in it and it was a very good and useful training for them.
3) They have the in-house award system, where the Monthly Best Staff is chosen and awards are also given to those who contributed to energy conservation.
4) Sofitel has an Accord (Manual), which contains provisions about energy conservation and setting temperature.

8. Overview of field inspection

1) All the lights in the corridors were off unless necessary.
2) Since it is a first-class hotel, it is clean and well-organized.
3) There are two chillers (manufactured by Trane). Since it is in the low season now, one chiller operates. Power Factor: 0.94
4) When the case example of the hotel was taken up in the Group Work on the previous day, each group raised a lot of good points and points to be improved in the future. We told them to hear the details from the subordinate who joined the inspection till the end.
5) Lastly, we told them that we knew that they had been conducting activities positively from the energy-saving point of view, and that we would like to invite them to trainings other than PROMEEC as the case may be.

Visit to PROMEEC (Energy Management) related organization: Cambodia (No.2)
Visit to Le Meridian Angkor Hotel

NO.	Item	Content
1	Date and time	October 19, Tuesday 13:15 to 15:00
2	Meeting place	Le Meridian Angkor Hotel
3	Counterparts	- Masahiro Taguchi, Sales division manager, Mr. Fernando JOSEPH (Chief Engineer) and other 3 people
4	Accompanying persons (MIME)	- Mr. Lieng Vuthy - Mr. Khlaing Amaradararith (*MIME: Ministry of Industry, Mines and Energy)
5	Visitors (ACE, ECCJ)	- Ms. Maureen Balamiento (IT Specialist, ACE), Ms. Irma Suryani (ACE) - Mr. Yutaka Ogura (General Manager, Technical Cooperation Department, ECCJ) - Mr. Fumio Ogawa (Technical Expert, Technical Cooperation Department, ECCJ) - Mr. Takashi Sato (Technical Expert, Technical Cooperation Department, ECCJ)

6. Overview of the company we visited

First, Mr. Ogura, manager, expressed his thanks for the participation of two people from Le Meridian Hotel in the seminar/training and explained about the purpose of visit and the outline of PROMEEC Project. Le Meridian Hotel is under the umbrella of Starwood, US, and is on the same rank as Sheraton. They have 1,000 hotels in the world. The number of employees is 230, 10% of them belong to the Engineering Department. The hotel opened in 2004. Mr. Francis Chu (Raffles Angkor Hotel) who participated in this seminar/training is the predecessor of Mr. Fernando.

7. Content of hearing/consultation

(1) Content of hearing

1) Outline of the hotel (The total site area is 9 Ha.)
   - Gross Floor Area: 10,000m^2
   - It is difficult to keep the five-star rating, and they have been working hard.
   - According to the Starwood standard, the room temperature in tropical regions is set at 23 to 25°C.
2) There are boards of Sixsigma, Safety & Health, and Training & Development. It shows that in-hotel activities have been conducted positively. On the Training Board, the trainees who plan to receive the training and its schedule were shown.
3) They have made efforts with the recognition of energy conservation as a key. The energy-saving activities are conducted according to the Starwood's manual, and they must submit the energy consumption to the parent company once a month.
4) In 2007, the electric power supply source was changed from the in-house power generation to the National Grid via EDC (Cambodia Electricity Corporation). As a result, the electric charge was reduced to half.
5) Two years ago, the Energy Conservation Committee named Sixsigma was established.
6) 50% of the electric power consumption is by chillers and 20% is by air conditioners, and 30% is by lighting and motors.
7) Steam traps which corroded two years ago were replaced. Condensate is also collected.

(2) Explanation, opinion and proposals on our visit including the field inspection

- The hotel is clean and well-organized, and we feel that the employees are well-disciplined.
- We strongly hope they will apply for the next ASEAN Award.

(3) Response of the company we visited

1) Surprisingly, a Japanese sales manager appeared. He says that he worked at various hotels in the world.
2) It is a first-class hotel, and so the inside is very clean. The persons in charge have a high energy-saving awareness. All the unnecessary lights were turned off.

8. Overview of field inspection

1) The 5-ton boiler supplys hot water for guest rooms and to the laundry at the load of 50:50. The steam pressure varies between 80 and 120 psig. We proposed there may be some measure against it. No equipment made in Japan was found. They say that they know the equipment made in Japan is good in quality but it is expensive.
2) As is the case with Sofitel, the company policy is Open, Transparency. Recently, the point on management was set as Sustainability. (In the past, No. 1 point was Safety against terrorism, etc.)

III-2-4. Indonesia

1. Implementation of Intensive Seminar-Workshop

The Intensive Seminar-Workshop (ISW) was held at a conference room on the 3rd floor of Manhattan Hotel, near the ACE Office, which was followed by the training course on the next day. Thirty-some participants, including those from the organizer, attended the ISW on the first day. However, participants from New Renewable Energy & Energy Conservation of MEMR (Ministry of Energy and Mineral Resources), the FP, were just two: Ms. Maryam Ayuni, Director for New Renewable Energy and Energy Conservation and Mr. Surpiyadi who was also present at the PROMEEC post-workshop and inception workshop by deputy. As the two left the conference room earlier than other participants, about seven ACE members were forced to take a leading role in this workshop, including registration. Ms. Indarti , FP, and others were unable to be present due to three other meetings held during the same period, but their dependence on the ACE, local organization, left us doubts whether they were really committed with this meeting. We want them to maintain a proactive stance and show their initiatives. They did not clarify the final agenda before we left Japan to Indonesia. Program of this meeting is shown in Attachment Material III-2-4-1.

(1) Welcome remarks and opening statement：Ms. Maryam Ayuni, Director for New Renewable Energy and Energy Conservation, MEMR, Mr. Ogura of ECCJ, and Ms. Cindy Rianti, who was there on behalf of Mr. Nguyen Manh Hung representing ACE expressed their gratitude to the cooperating organizations from their own position and introduced significance, future development and applications of energy conservation and PROMEEC/EM Projects. Ms. Maryam Ayuni spoke mostly in Indonesian language, so we couldn't comprehend what she said, except for English phrases like "ASEAN Award", "Japan-Denmark-Holland", "benchmark", "EM seminar-workshop & training". She may be talking about support of foreign nations.

(2) Generally, Session One starts immediately after a break including group photo session, but this time there was a brief self-introduction of the participants because there was time as reports from subject countries were omitted in the following session. Although not in detail, we could understand the outline of the participants' background, such as industry (the cement industry or the textile company we planned to visit, or hotels), government and public organization or engineering, which facilitated proceedings and talks in the following sessions.

(3) Session 1: PROMEEC Project/PROMEEC EM Project: Outline & Achievements
Introduction of the PROMEEC Projects as a whole and EM (Improvement of Energy Management Base) Project

1) "Outline and Achievements of PROMEEC Project" (Mr. Oscarlito Malvar, ACE): Mr. Malvar explained the EEC activities in the APAEC 2010-2015 Program and past activities of three PROMEEC Projects, as shown in Attachment Material 1 (not attached)
2) "Outline and Plan of PROMEEC (Energy Management) Project" (Mr. Ogura, ECCJ): He introduced the EM project plan for this fiscal year, as shown in the Attachment Material 2 (not attached)
3) "Government Regulation on Energy Conservation and Result of PROMEEC-Energy Management Activities in Indonesia" (Ms. Indarti, MEMR): This report, which was initially included in the program, was canceled on the day. The speaker was unable to be present at the meeting, but it seemed that there was no one who was going to speak on behalf of the speaker. As a result, there were no reports from the host country on the day and the next day, leaving the participants an impression that the host country is not much committed to this meeting. Brochures on the energy conservation act of Indonesia completed in 2009 (written

in Indonesian) and two documents about building and industry energy management system, also in Indonesian, were distributed to the participants, possibly for reference. But the latter was left on the reception table and not handed out to the participants.

(4) Session 2: Introduction of Functions and Program of ASEAN Energy Management System

1) "Outline of Updated ASEAN Energy Management System" (Mr. Ogura, ECCJ)：ASEAN EM System described in this fiscal year's plan was extracted to explain about ASEAN Award, diffusion of EMHB, concrete development plan for Functions & Other Tools, as described in the Attachment Material 4 (not attached)

2) Specific Functions and Program

A) ASEAN Award System of Best Practices in EM for Industry and Building

- "Outline, Results of ASEAN Awards for 2009-2010 and Plan for 2010-2011" (Mr. Pham Van Duong, ACE): He introduced the results in EM section of this BOJ and future challenges, as shown in the Attachment Material 5 (not attached)

B) Information System

- "Information Analyses to ease Dissemination of Awarded Cases" (Mr. Sato, ECCJ)：Mr. Sato introduced analysis of this fiscal year's applications and the awardees in the EM section, as shown in the Attachment Material 6. (not attached)
- "Online Energy Information System to Utilize The Existing Implementing Organizations" (Mr. Junianto M, ACE): He introduced the Online Energy Information System and made requests to participate and use the system. At present 17 organizations* registered as implementation organization. (recently one more company from Singapore registered) Attachment Material 7 (not attached)
- "Introduction of JASE-World" (Mr. Ogura, ECCJ): He introduced JASE-World and how to use the e-Directory for Technologies & Equipment: Attachment Material 8 (not attached)

C) Energy Management Tools

- "Energy Management Handbook (EMHB) and Other Tools" (Mr. Ogura from ECCJ): He introduced the outline of the Handbook on heat and electricity related to EMHB and translations in other languages. Attachment Material 9 (not attached)
- "In-house Database (IHDB) for Industries and Buildings" from "Updates on the Development of Energy Management Tools" (Mr. Junianto M, ACE): IHDB by industry, classification of buildings and past activities. Attachment Material 10 (not attached to this document)
- "Technical Directory (TD) for Industries and Buildings" from "Updates on the Development of Energy Management Tools" (Mr. Junianto M, ACE): Mr. Junianto introduced types of TD, cases and the access method. Attachment Material 10 (not attached)

(5) Session 3: Environmental Awareness and Financing; There was no presentation from the host country that we requested.

1) "Situation of Environmental Awareness and Financial Support System in Japan" (Mr. Ogura from ECCJ): Starting with the current situation of global warming and the issue of resource exhaustion, he explained the Energy Conservation Law of Japan, measures of energy conservation and those aimed at enhancing awareness of the Japanese people including the eco-point system. Ogura also introduced the financial support system for energy conservation measures and loans for energy conservation provided by JICA/ODA in ASEAN nations (loans to cope with climate change and the Two Step Loan). Shown in the Attachment

Material 12 (not attached)

2) "Financial Support System in ASEAN" (Mr. Chanatip Suksai, ACE): Distributed material was just a sheet of paper describing the international potential funding sources for ASEAN nations. Shown in Attachment Material 13 (not attached)

(6) Q&A

1) Is an EMHB by country necessary? → Basically, EMHB for ASEAN can be used in common, but translation in local languages or making an abstract, as in Brunei Darussalam, is allowed.
2) Are there similar projects organized by JICA? → JICA offers the Master Plan for Energy Conservation, but ECCJ is the sole organization that develops and promotes the system, handbook and tools of energy management.
3) What's the difference between ISO 50001 and EMHB? → ISO 50001, which will be finalized by the end of this fiscal year, requires energy management based on the PDCA cycle as with EMHB, but as whole, the regulations are general. Last year, the Indonesian government has set its own energy conservation act, and it was distributed to the participants today. Regulations on energy management in the act must be observed first. However, for the future, customers in Europe or in the USA may require ISO50001 when exporting goods. It may not be so troublesome to obtain the ISO50001 certification if the EMHB for ASEAN is implemented.
4) This fiscal year, period of work in Indonesia was October 21-25. We want to have more opportunities to visit local companies. → As explained earlier, basically three days are allocated to each nation in this EM project. ISW and training are done today and tomorrow, followed by an advisory visit to Viscose, who is present today, on the third day. FP has chosen the company to visit, and we ask you for your understanding that it may not be possible to visit more companies due to geographical and time limit.
5) Can EMHB be downloaded for free? → Yes. EMHB related tools can be down loaded on ACE or ECCJ website and JASE-W's Technical Directory can also be downloaded on ECCJ website, for free.
6) When will EEH (Electricity Energy Efficiency Improvement Handbook) be available? → In our plan, it will be completed by the end of current fiscal year and uploaded.
7) Can SEI (Specific Energy Index) be available on ACE's website? → The Ministry (MEMR) will consider the issue. (Mr. Junianto)
8) Japan has set a goal to reduce CO_2 emissions by 6%. What stance do the Japanese government and private enterprises take toward CDM Projects? → The Japanese government has focused on CO_2 emissions trading with other nations, implementing many projects through NEDO or other organizations. Private enterprises make efforts of their own. However, there is an issue of budget and cost. Emissions trading program in Japan has been launched.
9) Ms. Indarti will accept applications and provide consultations on the ASEAN Award. (Mr. Pham)

(7) Breakdown of the participants

1) Semen Tonasa: 2 people
2) Semen Baturaja: 2 people
3) Semen Bogor: 1 person
4) Indonesia Cement: 1 person
5) South Pacific Viscose (Textile):3 people
6) Association Textile Indonesia: 1 person
7) Hotel Association: 1 person
8) Parklane Hotel: 1 person
9) Bakrie Tower (Building): 1 person
10) Building Management: 1 person

11) Industry & Energy Agency (Building): 2 people
12) From the building sector: 1 person
13) The Pakubuwono Residence: 1 person
14) Engineering Association: 1 person
15) MEMR Research & Development Center for Electricity and Renewable Energy Technology: 2 people
16) Education & Training Center for Electricity & Renewable Energy: 2 people
17) Local Government (Environment): 1 person
18) Unaffiliated: 5 people

(8) Achievements and challenges of ISW

1) In PROMEEC Projects, each of EM and Building had one participant.
2) Brief self introduction of the participants at the beginning helped us understanding the background of participants and was beneficial for the proceeding. Although it was a small group, we had participants who came all the way, thanks to the efforts of FP.
3) We understand that there may be a reason, but FP side was not committed to this project on the first and second day, showing little passion and eagerness to lead this project for the future. We should tell them that unless they will grow out of dependence on ECCJ and ACE in Indonesia, they will not be able to receive continuous support.

2. Training for the use of the Energy Management Handbook, etc.

There were about 20 participants excluding those from the organizer, most of whom were the participants of ISW on the previous day. Seventeen trainees present at the afternoon workshop were divided into two groups.
Basically, we made the same preparations as in Cambodia on the second day. Because training on energy management was not provided in Indonesia last year, we focused on helping participants to have correct understanding on how to use the Energy Management Handbook and apply it to their day-to-day work.
Plan for the second day is as follows: (almost similar to that for Cambodia)

1) The entire morning session was for explaining the Energy Management Handbook.
2) Explanation of the Energy Management Handbook was made using PowerPoint slides.
3) Group work was implemented only in the afternoon session on the second day:
   - One case of Indonesia factory and one for building were chosen from applications to the ASEAN Award Competition.
   - Group work was supposed to be led by the organizer from Indonesia.
     (Actually they were heavily dependent on the Japanese side due to the lack of preparation of the Indonesian government)
4) Ms. Indarti, FP of Indonesia, was supposed to give explanations on the government initiatives and the training course at the end of the session.
   (Explanations were not given due to the lack of preparations on the Indonesian side)

The above is the outline of this fiscal year's training. Training program actually given is shown in the Attachment Material III-2-4-2.
Achievements of the day are described below:

(1) Lecture: Outline and features, detailed explanation and important guidelines of the Energy Management Handbook (Mr. Ogawa, ECCJ): Attachment Material 13 (not attached

On the previous day, most of the trainees were found to be able to understand English without interpreters. On this day the lecture was given in English, in a slow and intelligible manner. They seemed to have understood the explanation for the most part.
We tried to quote contents of application documents of two case studies which were

going to be used in the group work in the afternoon session.

There were two questions on the lecture, both from Mr. Christianto Surowo from the Pakubuwono Residence:

Q: Isn't it difficult to set numerical targets as the top policy (such as targets to reduce energy consumption)?

A: That's a good question. But it may be possible to roughly set goals referring to successful examples of the competitors in the industry. But such goals are not reliable, not based on detailed consideration. Problem is: what will happen when the goal will not be achieved? Frankly speaking, there will be two cases: one is to set numerical targets roughly, but the leaders and the organization must be flexible enough so as the fact that the goals will not be achieved will not become a problem; another is to set lower numerical targets than the level that may be achieved. If the goal is achieved, all will be happy. But this will leave a question whether the goal was too low. The choice between these two will be made based on the culture of the organization and the qualification of the leaders.

Q: How about adding awareness and actions on energy conservation in the job description of the subordinates?

A: It may be possible if it is natural to add to the job of the subordinate.

(2) Workshop (Group Work)

1) "Guidance for Group Work" (Sato, ECCJ): Prior to the group work, ECCJ gave briefings on the work: Attachment Material 16 (not attached)

2) Explanations by persons involved in two cases

The two cases were introduced:

A) Semen Tonasa

Semen Tonasa received the First Runner Up (highest award) in the EM for industries in the 2009-2010 ASEAN Energy Award Competition. Mr. Ridwan Puruomo from Semen Tonasa gave an explanation for more than 30 minutes using PowerPoint slides. Although it was done in Indonesian, we had understood the contents in advance by reading application documents.

B) Mangga Dua Square

Mangga Dua Square received the 2nd Runner Up award in the EM for buildings in the 2008-2009 ASEAN Energy Award Competition. Mr. Didik Kurniadi (Building Manager) of the company gave explanations using PowerPoint slides. It was a brief explanation but to the point, given in English.

3) Group Work

For the analysis and assessment of these two cases, Energy Management Handbook was used as the standard to check whether required items are implemented.

As with other nations, the items for final presentation after the discussion are as follows:

A) Evaluation of energy conservation activities based on the above (good points) and

B) Suggestions for future improvement

After the briefing by ECCJ, the organizer was supposed to take a leading role. Due to the lack of preparation on the Indonesian side, we had to support them.

There were two groups:

Group NO	Number of people
A	8 people
B	9 people

The discussion was planned to last about 1 and half hours. Actually both groups finished also preparations for the presentation within that time.

For use in the discussion and the presentation of each group, we provided a sheet of white paper put on a board, but both groups created PowerPoint presentation using PC in the discussion.

PowerPoint presentations of both groups were well organized, which starts with the

introduction of the group members and includes good points and suggestions. We were impressed that the presentations included many suggestions although the case studies were successful examples.

4) Comments from ECCJ

- Group work proceeded very smoothly. Most of the participants were inexperienced in energy management, but there were no problems.
- Both groups made good presentation on the use of KSA, the main theme of this group work. Presentation of the group B was excellent.
- We expected it may be difficult to give suggestions for improvement from successful cases, but both groups did.
- We hope the group members to let their subordinates and others learn about what they acquired in this training, when they return to the workplace.

(3) Presentation from the Indonesian government

Actually this was canceled due to the lack of preparation of the Indonesian government. However, in the closing remarks, Ms. Indarti said that Indonesia should learn more from Japan and the EM System. Training program is too short to learn. She said she hoped participants to disseminate EMHB at the workplace.

(4) Awarding of certificates and closing remarks

Ms. Indarti, Mr. Ogura, and Mr. Junianto came up to the stage and handed certificates to the participants. Lastly, Mr. Pham of ACE expressed his gratitude and gave closing remarks.

(5) Breakdown of the participants (excluding those from the organizer)

1) Buildings	2 people
2) Factories	10 people
3) Government (central and local)	4 people
4) Others and unknown	4 people
Total	20 people

3. Visit to companies

Following the intensive seminar-workshop and the training on the use of Energy Management Handbook, we have chosen a company from those wishing to utilize the Energy Management Handbook and other tools for their energy management of factories and buildings or promoting energy conservation, and visited the company on October 25. For details, please refer to the Attachment Material III-2-4-3.

(1) South Pacific Viscose: Textile manufacturer (viscose fiber)

4. Others

(1) This fiscal year's workshop held in Jakarta received support of many ACE members. In addition to Mr. Manh Hung, Mr. Zamora, Ms. Maureen, Mr. Junianto and Mr. Pham Duong, who are involved in the PROMEEC/EM projects, we had support of Ms. Cindy, Mr. Oscarlito, Mr. Chanatip and Mr. Bernard for giving remarks, lectures, assuming a role of MC (Master of Ceremony) and receptionists at the registration. Mr. Pham Duong, Mr. Oscarlito, Mr. Chanatip, who are new at ACE, carried out their responsibilities without problems.

(2) Around the same period, from October 18th to 22nd, the 1st Energy Supply Security Planning the ASEAN (ESSPA) Workshop organized by IEEJ was held at another conference room on the same floor of the hotel (10th floor of Manhattan Hotel). We met Mr. Shigeru Kimura of IEEJ, director for research in charge of quantitative analysis and exchanged greetings. There were representatives of ASEAN nations there. Dr. Lim at Universiti Brunei Darussalam, who cooperated with us in EM projects in Brunei Darussalam, was there. We happened to see Dr. Lim in front of the hotel desk on the

previous night for check-in.

(3) Photos are shown in the Attachment Material 12. (not attached)

ACE EE&C-SSN DGNREEC METI ECCJ

INTENSIVE SEMINAR-WORKSHOP ON
THE PROMOTION ON ENERGY EFFICIENCY AND CONSERVATION
(PROMEEC) - ENERGY MANAGEMENT

UNDER THE SOME-METI WORK PROGRAMME 2010-2011

21 October 2010, Jakarta, Indonesia

FINAL AGENDA

8:30	-	9:10	**Registration**
9:10	-	9:20	**Welcome Remarks** Ms. Maryam Ayuni, Director of New Renewable Energy and Energy Utilization, DGNREEC – MEMR
9:20	-	9:30	**Opening Statement** Mr. Yutaka Ogura, General Manager, The Energy Conservation Center, Japan (ECCJ)
9:30	-	9:40	**Opening Statement** Ms. Cindy Rianti, ASEAN Centre for Energy (ACE)
9:45	-	10:05	**Photo Session and Coffee Break**
10:05	-	10:15	Self Introduction of Participants
SESSION I: PROMEEC Projects			
10:15	-	10:48	Outline and Achievements of PROMEEC Projects Mr. Oscarlito Malvar, ACE
10:49	-	11:08	Outline and Plan of PROMEEC - Energy Management Project Mr. Y. Ogura, ECCJ
(Canceled)			Government Regulation on Energy Conservation and Result of PROMEEC-Energy Management Activities in Indonesia Ms. Indarti, Head, Energy Conservation Division, DGNREEC - MEMR
SESSION II: ASEAN Energy Management System "Function & Program"			
11:17	-	11:45	Outline of updated "ASEAN Energy Management System" Mr. Y. Ogura, ECCJ
11:45		12:21	Specific Function and Program 1) ASEAN Award System of Best Practices in Energy Management for Industry and Building (Outline, Results of ASEAN Awards for 2009-2010 and Plan for 2010-2011) Mr. Pham Van Duong, ACE 2) Information System (Information Analysis to ease Dissemination of Awarded Case Mr. Takashi Sato, ECCJ
12:21	-	13:40	**Lunch**
13:40	-	14:37	3) Information System (On-line Energy Information System to Utilize the Existing Implementing Organizations) Mr. Junianto M, ACE 4) Introduction of JASE-World Mr. Y. Ogura, ECCJ 5) Energy Management Tools: – Energy Management Handbook

			Mr. Y. Ogura, ECCJ – In-house Database for Industries and Buildings Mr. Junianto M, ACE – Technical Directory for Industries and Buildings Mr. Junianto M, ACE
14:37	-	14:50	Q & A
SESSION III: Environmental Awareness and Financing			
14:53	-	15:30	Situation of Environmental Awareness and Financial Support System in Japan Mr. Y. Ogura, ECCJ
15:30		15:33	Financial Support System in ASEAN Mr. Chanatip Suksai, ACE
15:34	-	15:45	Q & A
End of Intensive Seminar-Workshop			

ACE EE&C-SSN DGNREEC METI ECCJ

TRAINING ON
UTILIZING "ENERGY MANAGEMENT HANDBOOK & ENERGY MANAGEMENT TOOLS"
UNDER THE SOME-METI WORK PROGRAMME 2010-2011
22 October 2010, Jakarta, Indonesia

FINAL AGENDA

8:30	-	9:17	**Registration**
SESSION I: Seminar by ECCJ			
9:18	-	10:16	Outline of Energy Management Handbook for ASEAN (Part 1) Mr. Fumio Ogawa, ECCJ
10:16		10:40	**Coffee Break**
10:40	-	11:55	Outline of Energy Management Handbook for ASEAN (Part 2) Mr. Fumio Ogawa, ECCJ
11:55		13:30	**Lunch**
13:35		13:48	Supplement of EMHB and Q & A
SESSION II: Training for Small Group Activities			
13:48	-	14:04	Guidance for Group Work Mr. Takashi Sato, ECCJ
14:06		14:17	**Experience of Dissemination of ASEAN Award Best Practice of Energy Management** Explanation of Best Practices/Energy Management in Industry (Case Study 1: Mangga Dua Square)
14:18	-	14:49	Explanation of Best Practices/Energy Management in Building (Case Study 2: Power Management in PT. Semen Tonasa (Persero))
14:50	-	15:50	Group Work based on Cases Study 1 & 2 by ECCJ – Preparation for Group Work – Discussion by Groups:
15:50	-	16:05	**Coffee Break**
16:06	-	16:23	Presentation by participants: Result of Group Work for Case Study 1 & 2
16:23		16:31	Comments by ECCJ Experts
16:32	-	16:40	Closing Remarks by Ms. Indarti (NFP ASEAN EE&C SSN)
16:40		16:55	Awarding Ceremony of Certificate to Participants
Completion of Training			

Visit to PROMEEC (Energy Management) related organization: Indonesia (No. 1)
Visit to South Pacific Viscose

NO.	Item	Content
1	Date and time	October 25, Monday 9:00 to 14:00
2	Meeting place	PT. South Pacific Viscose: Factory Desa Cicadas, Purwakarta 41101, West Java, Indonesia
3	Counterparts	- Mr. Saleel R Nayak (Vice President, Chemicals & Utilities), Mr. Sundara Rajan V (Vice President, Fiber Production), Mr. Rosa Belawan (Senior Manager, Utilities Plant, Chairman of Energy Committee), Mr. Zakaria (Vice Chairman of E.C.), Dr. Knoglinger Johann (Process Optimization Manager), Mr. Abdul Haris (Deputy Manager, Process Development)
4	Accompanying persons	- Ms. Devi (New Renewable Energy and Energy Conservation, Ministry of Energy and Mineral Resources,)
5	Visitors (ACE and ECCJ)	- Mr. Junianto M (IT Specialist, ACE), Mr. Pham Duong (ACE) - Mr. Yutaka Ogura (General Manager, Technical Cooperation Department, ECCJ) - Mr. Fumio Ogawa (Technical Expert, Technical Cooperation Department, ECCJ) - Mr. Takashi Sato (Technical Expert, Technical Cooperation Department, ECCJ)

6. Overview of the company we visited

(1) South Pacific Viscose factory is located about 100km away from Jakarta to the Bandung direction, which takes 2 hours by car when the road is not busy. The reason why this location has been chosen is that the Indonesian government at the time attracted labor-intensive industries to this place, there is much water (this factory consumes 58 million liters of water daily, having its own dam) and it is near the consumption area such as Jakarta and Bandung. The 75-hectare plant employs 1,600 people and operates with the three-shift system, producing viscose made of pulp. Rather than used as is, viscose is often mixed with cotton and polyester.

(2) South Pacific Viscose is a member of Lenzing Group headquartered in Austria. After its foundation in 1982, India, one of its initial shareholders, sold its capital holdings to Lenzing Group. Currently the Lenzing Group owns a 90% share while the remaining 10% owned by local capital. At present there are three Indians (two V.P.s) in this plant. Outside Indonesia, Lenzing Group has another plant in Nanjing, China. Daily output of the Indonesian plant, which was at first 50 tons, has increased to 600 tons. The company is now expanding the plant on a land nearby, meaning that the company's business is doing well. The parent company has a policy to focus on the use of renewable energy, environmental preservation and sustainability, while increasing production and saving energy. The plant aims to be a green factory. It has obtained ISO9001 and ISO14001 certifications.

(3) Mr Ogura expressed gratitude that there were four participants in the seminar and training from Viscose. He also explained the objectives of the visit and the outline of the PROMEEC Project.

7. Content of hearing/consultation

(1) Content of Hearing

1) Production scale: 220,000 ton/y

2) Production facility: The plant is an integrated chemical factory to produce viscose textile from material pulp, mainly imported from South Africa. Product is exported to Japan,

Europe and the USA. In Japan, their viscose is mixed with Stensel brand textiles. Na_2SO_4, by-product of viscose textiles, is used at glass or paper manufacturing, creating a niche market.

3) Activities regarding EM
- (Margin Enhancement Project (MEP) was started in 2006. With this, Energy and Utilities Saving Team started activities. Each division has SGA organization and reports energy management results to top management. Top management has a clear policy on EM.
- In addition, PKK (Indonesian abbreviation for Small group activities including Employee's Idea Collections and Suggestion System) functions well. Excellent cases are rewarded. PKK Bulletin is issued.
- Priorities are given to no or low-cost ideas. These were replaced with the words learned in the seminar and training provided last week.
- Process Development (PDE) optimizes the use of energy and materials. PDE provides technical support to various energy conservation activities.
- PDE is implemented in the medium & high investment projects to test the effectiveness.
- PDE handles ideas suggested by the employees.
- In the factory, ideas are classified into no or low cost idea, medium cost idea or high investment idea, depending on the scale of projects on energy conservation.

A) No/low cost idea
- Put a sticker on the switch to promote energy conservation
- Install a sub-meter for each colony (company house) to promote energy conservation
- Regularly check the steam trap
- Change the location of the lighting switch for the convenience of the users

B) Medium investment project
- Chemical Cleaning System of Heat Recovery PHE (Plate Heat Exchanger)
- Replace existing SW-pre-heater with a new one
- Replace reciprocating type compressor to a screw type
- Introduce inverter fans and pumps

C) High investment project
- Heat Recovery in a sulfuric plant
- Replace freon chiller with ammonium chiller

D) Energy conservation projects for the future
- Reorganization of the condensate polishing unit
- Preheat of all make-up water

E) Unauthorized projects
- Complete condensate recovery
- Introduce the latest topsoe process to the fibre dryer

F) Future projects
- Modification of caustic adsorption chiller
- Separation of the cooling tower

(2) Participants from South Pacific Viscose seemed to be interested in the ISO 50001 system, but have no specific knowledge about the system. We told them that it will be finalized by the end of the year. Also we told that it is a general certification based on the PDCA cycle as described in the explanation for EMHB. South Pacific Viscose, which has obtained ISO9001 and ISO14001 and implementing EEC and EM activities may be able to obtain the ISO 50001 certification easily.

(3) Complying with the instruction from top management, the company aims at a 3% energy reduction. Degree of attainment is checked every 6 months. After 6 months a new goal is set.

1) All departments are required to analyze the collected data and make a chart to top management once a week and once a month.

2) Benchmarking is implemented with the factories in the same corporate group.

3) The adjacent factory is a competitor also manufacturing the same product. Birla Group of India is the competitor for the company, too.
4) Half of the production cost is for materials. Energy cost accounts for about 10-15% of the total.
5) 10% of electricity is purchased and the remaining 90% is generated in-house. Electricity generated with the cogeneration system is cheaper than purchasing power. National Grid, the electricity supplier, is sometimes hit by thunder, causing power failure, which is the most serious problem for the manufacturing process of textile companies. Fuel for in-house power generation is coal of Indonesia (Java and Sumatra).

(4) Explanations, opinions and suggestions from ECCJ after the inspection of the factory
1) This large scale factory can be called chemical plant, rather than a textile plant.
2) Most of unnecessary lightings were turned off, but the warehouse having natural daylight was lit. The person in charge said that some workers are still unconscious of energy conservation.
3) Dr. Knoglinger Johann gave a detailed explanation on the plant facilities and the manufacturing process. One of the colleagues said that he has received a Ph. D. in physics and offers various ideas on energy conservation of the factory.

(5) Attitude toward EM
1) The company seemed to be focused on energy management, enrolling four employees in the seminar and the training. They have prepared a presentation based on what they have learned before our visit.
2) Persons in charge of energy management are willing to introduce EMHB, but they wait for the decision of top management.

8. Overview of field inspection
1) There was a question over advanced, high efficiency motor of Japan. We asked the questioner to refer to the distributed compact disc of JASE-W.
2) It would be effective to create an Indonesian version of the EMHB and distribute to the employees.
3) We advised the company to make an application to the EM section of the ASEAN Award.
4) We understood that they were committed to clarifying policies of top management, employee training at the training center, improving technical capabilities and introducing PDCA. We hope that they will make further efforts on EM.

III-2-5. Myanmar

1. Implementation of Intensive Seminar-Workshop

The two-day Intensive Seminar-Workshop took place at Majestic Room, Hotel Amara in a political town of Nay Pyi Taw of the new capital of the company. Nay Pyi Taw is a political capital and 80% of 100,000 residents are government officials, many of them living alone leaving their families to Yangonn. Except for the diet house, ministry buildings spotted in the woods, group of houses for government officials scattered around the town and hotels for foreign agencies concentrated near Hotel Amara, there were few offices of private enterprises, shopping centers and restaurants. Some joked about this vast, quiet town that it will require 100 years for revitalization.

Participants in the list were 26, except for the Deputy Minister for Minister of Industry (2) and the Director at the Ministry of Energy and their subordinates, who were present at the time of opening remarks.

Chairman for the first two days was Ms. Naing Naing Linn (Deputy Assistant Director, Directorate of Myanmar Industrial Planning) from Minister of Industry (2), who spoke in clear English. Most of the male participants wore their ethnic costume called loungyi.

Program for the 1st day is shown in the Attachment Material III-2-5-1.

(1) Welcome remarks: Mr. Kyaw Swa Khine, Deputy Minister of MOI-2, Mr. Pe Zin Tun, Director of MOE, Mr. Ogura of ECCJ and Mr. Junianto from ACE. Each expressed appreciation for cooperating organizations, significance and future development of energy conservation and PROMEEC/EM projects, from their perspectives. Outline of the remarks of the first two is described below.

This time, opening remarks was given by two people from different ministries for some reason of the country: MOI-2 handled this EM project, although MOE assumes responsibility of energy management and energy conservation in general. Later we knew that there are many agencies handling energy issues and it is unclear which ministry takes a leading role in promoting energy conservation. There were reporters and photographers from local newspaper and TV companies. On the next day the seminar was introduced in a newspaper.

1) Mr. Kyaw Swa Khine：First expressed gratitude for the persons involved in the seminar. Global Warming issue is a problem that must be shared throughout the world. Energy efficiency technology is important. Less energy use also decreases cost of production. EE&C will be promoted with the support of Japan. EM Handbook & Tools will be effective, but how to use it will be crucial. Valuable know-how of EM and EE&C should be shared. Exchange of information from government to private companies is important. ASEAN Award Best Practice & EM Tools is important. Need to stimulus awareness on energy conservation. Again expressed gratitude for the support of METI/ECCJ, wishing a success of this seminar.
2) Mr. Pe Zin Tun： First expressed gratitude for the persons involved in this seminar, including METI. Thanked ACE for organizing the ASEAN Award for Renewable Energy. EM System should be introduced to buildings and industries. Monitoring system of EE&C is important. More future issue must be learned. Expressed thanks for the experts for their support.
3) In the statement from ECCJ, we told a bit about insufficient outcomes of COP16 in Cancun, Mexico, that ended last week.

(2) Session 1: PROMEEC Projects/PROMEEC EM Project: Outline & Achievements
Introduction of the outline of PROMEEC Projects and EM (building foundations for energy management) projects

1) Outline and Achievements of PROMEEC Project (Pham Van Duong, ACE): EEC activities in the APAEC 2010-2015 Program and past activities of three

PROMEEC projects were introduced. Attachment Material 1 (not attached to this document)

2) Outline and Plan of PROMEEC (Energy Management) Project (Mr. Ogura, ECCJ): Plan for this fiscal year's EM projects was introduced. Attachment Material 2 (not attached)

3) Realized Activities/Outstanding Improvement through PROMEEC Projects in Myanmar (Mr. U Tin Htut, Ministry of Energy): In Myanmar, seven ministries excluding MOI-(1) and (2) that handled energy policies and energy issues. Ministry of Energy was defined as a coordinator among these ministries. Major activities related to energy implemented since 1991 were introduced. Past applications to PROMEEC Projects/ASEAN Award. Plans for the future include: preparations to introduce AEMAS Energy Manager System, outline of improving basic skills, goals for EE&C and the action plan, methods to improve energy efficiency were explained. Attachment Material 3 (not attached to this document)

(3) Session 2: Introduction of Functions & Program of ASEAN Energy Management System

1) Outline of Updated "ASEAN Energy Management System" (Mr. Ogura, ECCJ)：ASEAN EM System was extracted from this fiscal year's plan and detailed explanation was given to the ASEAN Award, promotion of EMHB and concrete development plan of Functions & Other Tools. When we asked about EMHB (Energy Management Handbook), nobody except for Mr. Than Oo, FP, knew about it. Five persons knew the fact that there are no ESCO in Myanmar at present. They also knew about PDCA cycle. Attachment Material 4 (not attached)

2) Specific Functions and Program

A) ASEAN Award System of Best Practices in E.M. for Industry and Building

- Outline, Results of ASEAN Awards for 2009-2010 and Plan for 2010-2011 (Mr. Pham V. Duong, ACE)：Results in the EM section of this fiscal year's BOJ and future challenges were introduced. Attachment Material 5 (not attached)

B) Information System

- Information Analyses to ease Dissemination of Awarded Case (Mr. Sato, ECCJ)：Mr. Sato introduced this fiscal year's applications to EM section and analysis of award results. He asked about regulations on room temperature in summer in Myanmar, but the answer was no. Average electricity charge in Myanmar is US 2.5 cent /kWh. A participant said electricity charge in Myanmar is cheap as hydraulic power generation covers 80-85% of electricity consumption in the country. Attachment Material 6 (not attached)
- Introduction of JASE-World (Ogura, ECCJ)：Relating to e-Directory for Technologies & Equipment, Ogura introduced JASE-World and how to use technical database. Then, ten English brochures with a compact disc were handed to Mr. Than Oo so that he can distribute to the participants as necessary. Attachment Material 7 (not attached to this document)

C) Energy Management Tools

- Energy Management Handbook (EMHB) and other tools (Mr. Ogura, ECCJ)：Outline of EMHB, related thermal and power technology handbook and translated versions: Attachment Material 8 (not attached)
- Technical Directory (TD) for Industries and Buildings (Mr. Junianto, ACE): Types, cases and access methods of TD were introduced. Attachment Material 9 (not attached to this document)
- In-house Database (IHDB) for Industries and Buildings (Mr. Junianto, ACE): Introduction of IHDB by industry, type of buildings and status of activities. Attachment Material 10 (not attached to this document)

- Online Energy Information System to Utilize The Existing Implementing Organizations (Mr. Junianto, ACE): Introduction of Online Energy Information System and request for participation and registration. Up to now 17 organizations have registered as an implementing organization. Attachment Material 11 (not attached)

(4) Session 3: Environmental Awareness and Financing;

1) Situation of Awareness Raising (Mr. Than Oo, Ministry of Industry No.2): Confirming effectiveness of the PROMEEC projects (including MTPEC training in Japan) and asking why wasteful use of energy is occurring, Mr. Than Oo said that government subsidy for electricity charges hinders development of awareness toward energy conservation in the nation. An agency that will take a key role in improving EE consciousness is necessary (he said to us that this part should not be translated). He said that EMHB should be translated in Burmese so that it can be used in the private sector and by SME, and that he wanted to distribute and popularize the Burmese version. He wished to join the AEMAS Project for capacity building of energy managers in the country. Using TV cartoons will be effective to raise awareness among people, but it is costly and needs support. A great deal of efforts is needed to raise awareness of the people. (It was very frank with a clear and correct understanding of the current situation. We commented later that it was an excellent presentation.) Attachment Material 12 (not attached)
2) Situation of Environmental Awareness and Financial Support System in Japan (Mr. Ogura, ECCJ)： Starting with the overall situation of the global warming and the issue of resource depletion, Ogura explained the Energy Conservation Law of Japan, measures of energy conservation and those aimed at enhancing awareness of the Japanese people including the eco-point system. Mr. Ogura also introduced the financial support system for energy conservation measures and loans for energy conservation provided by JICA/ODA in ASEAN nations (loans to cope with climate change and the Two Step Loan). Attachment Material 13 (not attached)
3) Financial Support System in ASEAN (Mr. Pham, ACE): International Potential Funding Sources for ASEAN was introduced in a sheet of paper, but Japan was not mentioned in the paper. Attachment Material 14 (not attached)

(5) Q&A

1) Please explain the method of registration to the Online Energy Information System. → If requested, ACE will ask for an approval of MOE and MOI-(2). → Will the registration form be sent by email? It may be difficult considering the communication environment of Myanmar. → Needs government approval.
2) Promotion of energy conservation is difficult in Myanmar as the energy cost is cheap (ex. 2.5 cents/kWh for government agencies). What can we do to promote energy conservation? → Cheap energy cost makes it hard to raise awareness toward energy conservation and make investment as the term of collection becomes longer. However, if energy consumption decreases through energy conservation, cost will be cut and energy security will be enhanced. That will contribute to preservation of the environment and prevent global warming.
3) (Question by an oil refinery company) We have invested $15 million to renovate heat exchangers to improve production capacity, but we do not know whether investment is effective. → You must have considered collection of investment in the planning phase so we do not know whether it is effective or not. But it can be considered effective if the investment is recovered in 3-4 years. → Is it effective if it takes longer? → If it takes 5-10 years, the factory may need expansion of production capacity and environmental measures in addition to conserving energy. You should check if such measures are necessary for the factory. → Ogawa clarified and explained the problems based on his memory of past visits to the company in 2004 and 2006. But the focus of the discussion went off the subject of

energy management. Speakers agreed to discuss this issue during a break.

4) How about the reduction of greenhouse gases (GHG) other than CO_2, such as HFC, in Japan? → We do not directly handle reduction of GHG other than CO_2, as different ministry handles the matter. In Japan, using chrolofluorocarbon in the air conditioners and refrigerators is prohibited and chlorofluorocarbon is recovered when cars are disassembled.
5) Although it was not a question, former director of MOI-(2) requested to establish Energy Conservation Act mainly by MOE. Mr. Tin Htut from Ministry of Energy said it is difficult at present. → ECCJ commented that other ASEAN members, Thailand, Indonesia and Vietnam have established their own act and the Philippines and Singapore are currently considering establishing their own, and ECCJ hopes Myanmar to formulate one.
6) Some complained that Myanmar has no energy policies, no energy conservation act and no regulations.
7) Will ECCJ or NEDO provide financial support to biogas projects or gas generation in rice mills? → ECCJ does not have such budget and projects, but NEDO may be interested in biogas or bioethanol business related to CDM.

(6) Breakdown of the participants

1) Ministry of Industry No.2: 6 people (excluding 4 ladies at the reception or MC)
2) Ministry of Energy: 3 people
3) Ministry of Industry No.1: 2 people
4) Ministry of Electric No.1: 2 people
5) Ministry of Electric No.2: 2 people
6) Ministry of Agriculture: 2 people
7) Ministry of Information: 1 person
8) Ministry of Science: 2 people
9) Ministry of Forest: 2 people
10) Myanmar Engineering Society: 2 people
11) Fame Pharmaceuticals: 1 person
12) Kaung Kyaw Say Engineering: 1 person
13) ACE: 2 people
14) ECCJ: 3 people

(7) Other achievements and challenges of the ISW

1) Ministry of Industry No. 2 made efforts in making preparations to make this event successful. Presentation materials were well prepared, and proceeding of meetings was excellent. Registration list and Questionnaire for Participation were delivered and collected without problems.
2) Initially there were few questions, but many asked questions in the Q&A session later. Participants exchanged their opinions freely and interacted.
3) As described earlier, participants were not familiar with key words and concepts of energy management such as EMHB, PDCA and ESCO. It was anticipated because it was the first EM project in the country. Myanmar will still need introductory projects on energy management.

2. Training for the use of the Energy Management Handbook, etc.

There were 25 participants, except for those from ECCJ and ACE. All were present from the lecture in the morning to the workshop in the afternoon. Expecting that the number will decrease in the afternoon and considering that there were two successful cases for discussion, participants were divided into two group. (Excluding those serviced as an advisor or coordinator, there were one group of 11 and another of 12, 23 in total.)
Generally, on the second day, participants learned details and how to use the Energy

Management Handbook, In-house database and Technical Directory, targeting at companies and organizations interested in introducing these tools.
As the PROMEEC (EM) Program is now in the phase-3 and most of the participants are ministry officials, contents for the second day have been changed as follows:

1) Introduction of in-house database and Technical Directory was omitted in the morning (it was explained on the first day). It was replaced by the description of the Energy Handbook.
2) Generally, explanation of the Energy Handbook is given page by page, but this time key points were explained using PowerPoint presentation. The handbook will be distributed to the participants.
3) Group work, which is generally conducted both on the first and second days, was done on the second day only. Due to the cancellation of the plan or other reasons, there was a blank time for Myanmar. Actually this was the first time for the country to learn about EM and participate in the workshop and group work. Therefore, we decided to explain and give advice in small-group activities and group works. (as described later, it was a great success)

Actual training program is shown in Attachment Material III-2-5-2.
The followings are the achievements on the day:

(3) Lecture: "Outline of Energy Management Handbook for ASEAN" Outline and features of the Energy Management Handbook, detailed explanation and important guidelines, from Mr. Ogawa, ECCJ: Attachment Material 15 (not attached)
(4) Workshop (group work) : "Guidance for Group Work" (Sato, ECCJ) Attachment Material 16 (not attached)

1) Introduction of the following two cases of energy conservation

A) Greenhills Shopping Center (a building in the Philippines)
B) Thai-German Ceramic Industries (TGCI factory in Thailand)

First we considered asking Mr. Than Oo to explain these cases. But based on the assumption that the participants have read the application materials included in the material distributed on the previous day, we omitted explanation of these cases.

2) Group work

As described earlier, this was actually the first time for Myanmar to join group work and they received an adequate explanation on basic matters on the group work. Basically, Energy Management Handbook was used for the analysis and assessment of the cases to check whether required items are implemented.

Items to be included in the presentation and discussion are: (same as before)

A) Assessment on energy conservation activities (good points), and
B) Advice on the future improvement plans

Participants were divided into two groups, as follows:

Group NO	Number of people	Case to be considered
A	11 people	Greenhills
B	12 people	TGCI

Some participants said they needed more time than the initial schedule, which was one and a half hours.
We prepared a flip chart to be used in the discussion and presentation, but both groups made their own presentation using PowerPoint slides, which implied high presentation skills of the participants. Presentations were made by:

Group A Mr. Htun Naing Aung (Kaung Kyaw Say Company)
Group B Mr. Than Oo (Ministry of Industry No.2)

Both groups were excellent in grasping the contents of each other, following the Key Step Approach method described in the Energy Management Handbook. However,

presentation of group A needed a little improvement compared with the one of group B, which showed good points and advice for future improvement. Mr. Than Oo, who served as a coordinator of the entire group work, joined discussion passionately, even taking the role as the presenter.

3) Comments from ECCJ experts

Comments from three experts at ECCJ were as follows:

- Although it was the first time for the participants, I was impressed with the fruitful discussion and contents as well as the appropriateness of the presentations. Though the time was limited, participants created well-organized PowerPoint presentations. Compared with other ASEAN nations doing similar group work, you can be a leader of such countries.
- It was encouraging for me to learn that you have well understood the methodology of EM Handbook explained in the morning session, especially the Key Step Approach, and are ready to use it.
- Today's participants, most of whom are from government agencies, will take a position of leadership for the private sector. We hope you to make this methodology familiar and make achievements. It would be effective for SGA to organize this kind of workshop and implement group work.

(5) Comments of the host country

This item is designed to allow Focal Point of the host country to introduce EC Plan and Training Program of the country. Mr. Than Oo expressed gratitude for METI and ECCJ, gave words of encouragement for the participants to have better contact with each other in daily work. He also made a wide range of explanations on the award of certificates.

(6) Award of certificates and closing remarks

Mr. Ogura, Mr. Junianto and Mr. Win Khaing handed certificates to the participants divided into three groups.

(7) Closing remarks by Mr. Win Khaing

Lastly, Mr. Win Khaing from MES (Myanmar Engineering Society) gave closing remarks, summarized as follows:

- Thanks to the efforts of METI, ECCJ, ACE, people from MOI-2 including Mr. Than Oo and the participants, today's program was very fruitful.
- I have just returned from the AEMAS (ASEAN Energy Manager Accreditation System) conference held in Bangkok. Our country still needs international support of the United Nations, Japan and EU. Among those, this PROMEEC project was very effective and important.
- I learned a lot from PROMEEC projects in the past. I hope this will be continued without troubles.
- ASEAN EM System tools including TD, IHDB, EM Handbook and On-line Energy Information System are highly effective. I believe participants well understood in the seminar and training.
- MES has been chosen as a service provider in Myanmar in the On-line Energy Information System. If there are any questions, even if not related to EC, please contact us freely.
- I am happy about everyone's performance in the SGA group work. Compliments from ECCJ experts were very encouraging.
- As discussed today, application to ASEAN Energy Award will be our next goal. A hospital in Myanmar once made application to this competition. Although it failed to win a prize, it achieved significant results: Improvement in EC has led to a reduction of monthly energy cost of US$2,000.
- Last but not least, I thank ECCJ experts again.

(5) Breakdown of the participants

Most of 25 participants, as listed below, are from government agencies. Mr. Win Khaing from MES, who also serves as a BOJ member of the ASEAN Energy Award, assumed a

role of general advisor. Ms. Naing Naing Linn (MOI-2), who was the master of ceremony, did not join the group work.

1) Ministry of Industry No. 2 : 7 people
2) Ministry of Energy : 3 people
3) Ministry of Industry No. 1 : 2 people
4) Ministry of Electricity No. 1 : 2 people
5) Ministry of Science : 2 people
6) Ministry of Agriculture : 2 people
7) Ministry of Forest : 2 people
8) MES : 3 people
9) Private companies : 2 people

4. Visit to companies

Following the intensive seminar-workshop and the training on the use of Energy Management Handbook, we have chosen a company from those wishing to utilize the Energy Management Handbook and other tools for their energy management of factories and buildings or promoting energy conservation and visited the company on December 16. For details, please refer to the Attachment Material III-2-5-3.

(1) Multi-Purpose Diesel Engine Factory

AGENDA
Intensive Seminar-Workshop
Promotion Of Energy Efficiency And Conservation (PROMEEC) - Energy Management
Under The SOME-METI Work Programme 2010-2011

The Amara Hotel, Nay Pyi Taw **14 December, 2010**

08:30-09:00	Registration
09:00-09:10 09:10-09:20	Welcome Remarks by Deputy Minister of MOI-2, Mr. Kyaw Swa Khine Welcome Address by Director of MOE , Mr. Pe Zin Tun
09:20-09:30	Opening Statement by The Energy Conservation Center, Japan (ECCJ, Mr. Yutaka OGURA)
09:30-09:40	Opening Statement by ASEAN Centre for Energy (ACE, Mr.Junianto)
09.40-10:00	*COFFEE BREAK & GROUP PHOTO SESSION*
10:00-11:15	Session 1 : PROMEEC Projects/PROMEEC EM Project : Outline & Achievements
10:00-10:45	Presentation by ACE & ECCJ 1) Outline and Achievements of PROMEEC Project (ACE, Mr.Pham Van Duong) 2) Outline and Plan of PROMEEC (Energy Management) Project (ECCJ, Mr. Yutaka OGURA)
10:45-11:15	Presentation (by Host country) Realized Activities/Outstanding Improvement through PROMEEC Projects,(MOE, Mr. Tin Htut,)
11:15-14:30	Session 2: "ASEAN Energy Management System" : Functions & Program
11:15-11:45	Presentation by ECCJ Outline of Updated "ASEAN Energy Management System" (ECCJ ,Mr. Yutaka OGURA)
11:45-12:15	Presentation by ECCJ and ACE Specific Functions and Program 1) ASEAN Award System of Best Practices in E.M. for Industry and Building - Outline, Results of ASEAN Awards for 2009-2010 and Plan for 2010-2011 (ACE, Mr. Pham) 2) Information System - Information System to Disseminate Awarded Cases (ECCJ, Mr.Takashi SATO)
12:30-13:30	*LUNCH*
13:30-15:00	Presentation by ECCJ, and ACE 2) Information System (Continued) - Introduction of JASE-World (ECCJ ,Mr. Yutaka OGURA) 3) Energy Management Tools - Energy Management Handbook and other tools (ECCJ, Mr. Yutaka OGURA) - In-house Database for Industries and Buildings (ACE, Mr.Junianto) - Technical Directory for Industries and Buildings (ACE, Mr.Junianto) - Online Energy Information System to Utilize The Existing Implementing Organizations (ACE, Mr. Junianto))
15:00-15:15	Q&A
15:15-15:30	*COFFEE BREAK*
15:30-17:00	Session 3: Awareness and Financing
15:30-15:45	1) Situation of Awareness Raising By (Host country) (MOI-2,Mr. Than Oo)
15:45-16:15	2) Situation of Environmental Awareness and Financial Support System in Japan (ECCJ, Mr. Yutaka OGURA)
16:15-16:45	3) Financial Support System in ASEAN (ACE, Mr. Pham Van Duong)
16:45-17:00	Q&A
	End of Intensive Seminar-Workshop

Attachment Material III-2-5-2 Agenda for Training of EMHB






AGENDA

Training: Utilization of "Energy Management Handbook and Tools for ASEAN"
Promotion of Energy Efficiency and Conservation (PROMEEC) - Energy Management
Under The SOME-METI Work Programme 2010-2011

The Amara Hotel, NayPyiTaw **15 December, 2010**

08:30-09:00	Registration
09:00-12:30	Session 1: Seminar by ECCJ
09:00-10:30	Explanation by ECCJ: Outline of Energy Management Handbook for ASEAN (part 1) (ECCJ, Mr. Fumio OGAWA)
10.30-10:45	*COFFEE BREAK*
10:45-12:15	Outline of Energy Management Handbook for ASEAN (part 2) (ECCJ, Mr. Fumio OGAWA)
12:15-12:30	Q&A
12:30-13:30	*LUNCH*
13:30-17:00	Session 2: Workshop (Training for Small Group Activities) by Host Country/ECCJ
13:30-14:00	Guidance for Group Work by(ECCJ, Mr.Takashi SATO)
14:00-15:45	Group Work Based on Cases Studies 1 & 2 by Host Country/ECCJ Case 1: Greenhill Shopping Center, Philippines, 1st Runner-Up; 2009 Best Practices /EM in Building Case 2: Thai-German Ceramic Industry Public Company Ltd of Thailand, Winner; 2010 Best Practices /EM in Industry - Preparation for Group Work : (Participants) - Discussion by Groups: (Participants) Guideline and Basic Plan to Improve Using "Energy Management Handbook"
15.45-16:00	*COFFEE BREAK*
16:00-16:30	Presentation by Participants: Results of Group Work for Cases Studies 1 & 2 (Participants)
16:30-16:45	Comments by ECCJ Experts and Host Country
16:45-17:00	Discussion on Proposed Program/Plan of EM Training in Host Country moderated by FP (Mr. Than Oo)
17:00-17:10	Closing Remarks by Host Country by (MES, Mr. Win Khaing)
	COMPLETION OF TRAINING

Visit to PROMEEC (Energy Management) related organization: Myanmar (No. 1)
Visit to Multi-Purpose Diesel Engine Factory

NO.	Item	Content
1	Date and time	December 16, Thursday 9:20 to 11:00
2	Meeting place	Ministry of Industry(2) Myanma*1 Automobile and Engine Industry(MADI) Multi Purpose Diesel Engine Factory
3	Counterparts	- Mr. Zaw Tun (General Manager), Mr. Hay Win Aung(Principle), Mr.Sai Kyaw Kyaw Oo*2 (Assistant General Manager) and other 7-8 persons
4	Accompanying persons (from MOI(2))	- Mr. Than Oo (Director)
5	Visitors (ACE and ECCJ)	- Mr. Junianto M (IT Specialist, ACE), Mr. Pham Van Duong (Technical Expert) - Mr. Yutaka Ogura (General Manager, Technical Cooperation Department, ECCJ) - Mr. Fumio Ogawa (Technical Expert, Technical Cooperation Department, ECCJ) - Mr. Takashi Sato (Technical Expert, Technical Cooperation Department, ECCJ)

*1: Myanma (no “r” at the end of the spelling)
*2: Mr.Sai Kyaw Kyaw Oo attended MTPEC11

6. Overview of the company we visited
Multi-Purpose Diesel Engine Factory is located in Thagaya region, about 40-minute drive from the Myanmar capital Nay Pyi Taw on highway to the direction of Yangon. Construction of the plant started in 2006 with financial and technical support of the Chinese government and was completed in 2009. One year has passed, but most of the machinery were not used and employees seemed to have little work. It cost about US$112 million. There were three training center buildings near the factory, constructed with the support of the government of South Korea (KOICA). The factory stretches on approx. 5,000 acres of land.
It is the only diesel engine factory in the country and belongs to the Ministry of Industry (2). Workers wore uniform of MOI (2). It has a goal to manufacture 700 units a year, but actually its output is about one-tenth of the target, with production facilities being left idle. The reason for this situation, whether market or technology, is unknown, but it was built jointly by the governments of China and Myanmar for political purpose. Diesel engines produced in the factory are purchased by the Chinese government. In some areas, experts from China were working.
The factory has the following facilities:
1) Foundry Shop
2) Forging Shop
3) Machine Shop (1&2)
4) Heat Treatment Shop
5) Assembly Shop
6) Maintenance Shop
At present there are 600 employees to manufacture three types of diesel engines: 405 hp (V6), 542 hp (V8), and 820 hp (V12), to be mounted on tractors, trucks, power generators and marine applications.

7. Content of hearing/consultation
(1) Content of hearing
1) Power consumption of the past one year is recorded, which was about US$37,000. The

factory has identified ten machineries that consume massive energy in the factory.
2) The plant is not operating fully and the ratio of energy cost in its total production cost is unknown. The plant is not at the stage to promote energy conservation yet.
3) The top priority for the time being is stable operation to get the production on track.
4) Mr. Than Oo requested benchmarks for automotive engine factories and cement factories.

(2) Explanations, opinions and suggestions from ECCJ after the inspection of the factory
1) When in full operation, energy consumption data per month or year will be available. Comparison of the data will help improving energy index (energy consumption per unit production)
2) Interior of the plant is clean as it is not fully operating. But when in full operation, it will become dirty. Please remember "5S".
3) Most of the lightings in the plant are turned off, taking in natural light. The ceiling is insulated, to cool the interior in summer.
4) Workers wore sandals and loungyi (loincloth) in a workplace handling heavy workpieces and most of the workers did not wear helmets when operating cranes, paying little attention to workplace safety.

(3) On the day of the visit
1)Electric vehicle was used for factory tour. Person in charge stood at the entrance of each shop to greet us. It was the first time that they accept Japanese visitors and took photos of us. They have accepted Chinese and Korean visitors in the past.
2) We could feel their welcoming mood, but regretfully, there were no comments about the factory because most of them were not operating. We were impressed with the preparation for the seminar and training, responses and hospitalities.

8. Overview of field inspection
1) It seemed odd that there are many workers in a quiet factory with most of the machinery not operating.
2) Mr. Sai Kyaw Kyaw Oo, who joined the MTPEC11 training held earlier, suggested to establish the Energy Conservation Team within the plant and it was adopted. We are happy that he put knowledge gained in the training into practice immediately. We will continue closely watching the future development.

III-2-6. The Sixth Research Forum in Japan

(Outline)
Under the Energy Management (EM) Projects, as one of PROMEEC (Promotion of Energy Efficiency and Conservation) Projects targeting ASEAN nations, the sixth Research Forum was held from November 9 to 11 in Tokyo and other areas inviting 10 researchers, mainly from Board of Judges of the Award System for Best Practices of Energy Conservation from 9* ASEAN nations and one from ACE. Achievement of this successful forum is reported below, with the objective and the program. (*one country was absent)

(Objectives of the Research Forum)
(1) Considerations and researches on functions to be added to PROMEEC Phase-3, "ASEAN Energy Management System" Step-2
(2) Analysis and researches that contribute to the improvement in system operation and the evaluation standards to gather and diffuse the best practices in "ASEAN Award System of Best Practices in Energy Management" in a more effective way
(3) Input of experiences of Japan that contribute to the above (Energy Management System, the aim of the award system and the advantages to join this award system)

(Program)
Refer to Attachment Material III-2-6-1.

(Participants)
BOJ (Board of Judges) member or Focal Point, one from each ASEAN member nations, one from ASEAN Centre for Energy (ACE), totaling 10, eight from Japan and an interpreter. Representative from Brunei Darussalam was absent. (list of the participants is shown in Attachment Material III-2-6-2.)

(Description of the Forum and Results)
1. Positioning and Objectives of this Research Forum
This Research Forum is held as part of PROMEEC (energy management) Projects launched in 2004. In this project, "ASEAN Energy Management System" Step-1 (basic functions and programs) have been established and launched by fiscal 2008, followed by the Step-2 System. Up to now, planned programs, information systems, energy management tools have been prepared and operated almost as planned. As one of key programs, ASEAN Award System of Best Practices in Energy Management for the collection and popularization of best practices in energy management was launched in fiscal 2006. In July 2010, the forth round of award was held and completed successfully. This research forum is for participants from Japan and ASEAN nations to make researches and discuss how to improve present conditions and establish policies for future on a higher level, to make the award system more effective.
The sixth round of the Research Forum had following objectives. Lectures, factory tour and workshop were provided to the participants.
(1) Improvement of "ASEAN Energy Management System"
Researches and discussions regarding additional functions to Step-2 System as well as related programs, subsystems and tools, based on the results of "ASEAN Energy Management System" Step-1 System.
(2) Operation policy of EM Award System and improvement evaluation guidelines
Improving operation of EM Award System and related evaluation guidelines with the aim of collecting more cases of energy management and effectively promotion of such cases in ASEAN

2. Contents of the Research Forum
Program outline and the organization are as follows:

2.1. 1st Day

(1) Opening remarks by Mr. Ishihara, General Manager of Division, ECCJ: Confirmed the importance of ASEAN-Japan cooperation, significance of ASEAN Award System and the significance of cooperation between BOJ members and relevant people for the improvement of the award system. Also, Mr. Ishihara expressed his hope that this forum will be a fruitful one.

(2) Keynote Speech by Mr. Yoshida

"Introduction and Keynote" : Mr. Yoshida, General Manager of ECCJ, explained the positioning of the forum, 10-year history of the PROMEEC Projects and future direction, change in international cooperation for around PROMEEC, importance of human resources development, relevance with ISO50001, strengthening functions of the ASEAN EM System, points for improvement in the ASEAN Award System, and points to be confirmed.

There was a comment whether comparison between ISO50001 and ASEAN EM System can be included or introduced in PROMEEC Projects. Responding to this comment, Mr. Yoshida said that there was no immediate introduction plan but discussion how it will be reflected on the PROMEEC Projects should be made.

Then, Mr. Ishihara added: "EM can be applied to ISO50001 but it is still in the drafting phase. Organization of EM in the Energy Conservation Law and ISO50001 (DIS) are slightly different and needs a little revision. ISO14001 is popular and some say that ISO50001 is an extension of ISO14001. Both systems are consistent but some arrangements may be necessary for harmonization, including Energy Conservation Law. After that, ISO50001 will be an effective tool for Japanese companies. Each country has its own law for energy conservation but ISO is common internationally. From this viewpoint, sharing Best Practices among multiple countries, including USA, will be effective. U.S.A. and Japan hope to continue using ISO. Therefore, international tools to promote Best Practices through the Award will be used. Cooperation and efforts of each country will be essential and Japan should cooperate with ASEAN nations. "

(3) Lecture

Recent trend of the Award System for Best Practices of Energy Conservation in Japan: Recent trend and future outlook of the Award System, which was renewed in 2009, based on the selection results were introduced. Energy Conservation Grand Prize for excellent energy conservation equipment will not be held for FY2010 due to the screening process in May 2010, but ECCJ is considering holding a presentation to introduce best practices of energy conservation on a voluntary basis (by Mr. Tsujimoto)

In response to this, Mr. Budi asked: "In Japan, there were 14,300 applications since the Award System was launched, but we have troubles in collecting best practices in Indonesia. Do you have some benefit system or a reward system in Japan?" Dr. Manan of Malaysia also expressed similar view, saying: "Cash prize is more attractive than just giving awards. Companies in Malaysia are reluctant to disclose the process in their application. How about in Japan?". Response from ECCJ was: "After the first and second oil crisis, production cost in Japan surged as we procure most of energy sources overseas. To survive in international competition, energy conservation has become a key issue for business management. Thanks to suggestions for improvement through SGA activities, we have successfully reduced necessary energy for manufacturing. Also, Energy Conservation Law established in 1979 is a milestone, encouraging businesses to submit applications for the Award. Followers appeared for applications on energy conservation measures in the petrochemical or chemical industry, but we understood that there were not in other fields. "

Energy Management System under the revised Energy Conservation Act: Mr. Ogura described details of the energy management system starting in fiscal 2010 required by the

revised Energy Conservation Law.

Questions in response to this were about the method to have businesses comply with the Law, description of a chain business operator, the number of designated energy managers in large universities, benchmark for power companies, whether mid to small enterprises are required to submit a thick periodic report, relationship with SME store in the chain store, and the person responsible for organizing the report on energy data in a small-scale chain store without engineers or energy managers. Mr. Ogura answered to these questions.

(4) Recognition of current status and analysis

- The fourth EM Award System selection results: outline and future agenda were introduced by Mr. Oscarlito Malvar (ACE)
- Mr. Sato of ECCJ introduced analysis of this fiscal year's applications and awardees as well as the past results of energy intensity in hotels, hospitals and shopping malls. In relation to this, Ms.Latha Ganesh asked whether floor area must be shown in the application, but Mr. Sato answered that it is already shown as the item to be included in the guideline.
- Introduction of Awards given in Japan for FY2009 (Denso's CGO) from Mr. Ogura. Mr. Budi asked about the access to ECCJ webiste, user name and password. Mr. Ogura answered that website is access-free and user name and password are required to access to the data on the training website and they will be provided later. After that, the asnwer was changed that the training website is accessible only by those who received training. Mr. Dung said he wanted to know the selection criteria in Japan, and Mr. Tsujimoto obtained relevant documents and sent English translation to Mr. Dung later.
- Analysis of Best Practices in the ASEAN Award System using Key Step Approach by Mr. Ogawa of ECCJ: Mr. Ogawa again described the outline of ASEAN EM Handbook and introduced that the application submitted by Epson Optical Inc. of the Philippines, which received an award this fiscal year, was based on the Key Step Approach. He also said that there were many statements on human resources development.

2.2. 2nd Day:

(1) Factory Tour: Significance and advantages of Japanese companies' participation in the Award System and information sharing among applicants

Visit to Asahi Sangyo Co., Ltd. based in Honjo city, Saitama pref., for meeting with the relevant personnel and a factory tour

(2) Opinion exchange: Opinion exchange between participants from ASEAN and Japanese experts through a lecture and a factory tour

Asahi Sangyo Co., Ltd. was founded in 1948 and initially produced agricultural machinery. Today it manufactures automotive parts. It is capitalized at 96 million yen and employs 80 people. Its main customer is Sanden. A large part of its energy consumption is electricity, and 30 percent of which is for operating air compressor. This fact was considered when studying energy conservation measures. As a result, it successfully reduced electricity consumption and was declassified from a type 2 designated energy management factory. Application on this achievement was submitted to ECCJ and it received the Chairman Prize of ECCJ three years ago.

The aim of this visit to Asahi Sangyo, which has received the Chairman Prize of ECCJ as the Best Practice of Energy Conservation in FY 2008, is to explain energy conservation policy of the company and relevant activities, significance of participating in the Award System and the advantage of information sharing with other companies, in order to increase applications and encourage participation in the system. Asahi Sangyo was awarded a prize for its application titled "Mission to be Declassified from a type 2 designated energy management factory "and it was explained to the

visitors. The fact that a small company with less than 80 employees submitted a logical, persuasive application on energy conservation approach and made significant results attracted attention of the participants. In the Q&A session, there was a question on the EM tool that the company uses. The answer was the company had been involved in TPM activities, which was also given an award. About the future policy, personnel from Asahi Sangyo said that it has achieved quantitative target and will consider reduction of energy intensity. This visit must be valuable and have given the participants clues to increase applications in the ASEAN countries. At the last of the visit Ms. Amaraporn expressed her gratitude.

2.3. 3rd Day:

(1) Workshop

- Improvement for the establishment of the Step-2 System of the ASEAN Energy Management System: Mr. Ogura assumed the post of chairman with the cooperation of Mr. Yoshida.

1) Before this research forum, the participants were asked for opinions regarding the functions of the ASEAN EM System. Mr. Habitan gave a detailed comment, Mr. Vuty and Mr. Bouathep, who was absent on the day, provided responses by e-mail. Some others answered that they will give comments on the day. Here, the comments from four persons were introduced and the chairman asked for comments of each participants. Many agreed that the Tools, including the EMHB, are effective. From those from Cambodia, Laos, Myanmar and Thailand said they wanted support for translation into local languages and distribution of the booklet.
2) One of the participants asked for the ASEAN Energy Audit Manual (Handbook), but we suggested to summarize existing handbooks of each country. As the issue is not relevant to this PROMEEC EM Project, it should be considered in the industry and building projects of the PROMEEC. Singapore is currently considering the introduction of the ISO50001.
3) An icon of ”Online Energy Information System” has appeared on the ACE webiste. Asked about the progress of setting an icon for ”One Stop to System (or One Stop Service)”, which is currently database only, they answered that the website will be updated in the following week, placing the icon for it.
4) We encouraged ACE to prepare the Registration Form of the Advisory Service, with the registered experts on a voluntary basis. It was unclear who will be responsible for the answer. Some said the disclaimer article should be added. This issue will be discussed in the next Post Workshop.
5) The participants agreed to create a list of ESCO for the e-Directory on a trial basis.
6) We have requested discussions on the National Training Program at the seminar after the OJT analysis or other occasions, but this has not been put into practice. Some commented that the EA(Energy Audit) HB (Manual) of the ASEAN Version should be created. In addition, there was a discussion on how to harmonize AEMAS (ASEAN Energy Manager Accreditation System) or the ISO50001 with the PROMEEC Projects.

- Improving operation of the EM Award System and the assessment guidelines: Ms. Amaraporn served as chairman and Mr. Habitan as vice-chairman.
  As in the previous discussion, the participants were asked in advance to give comments on the discussions carried forward from the fourth BOJ meeting and Ms. Amaraporn and Mr. Habitan provided us with detailed comments beforehand. Initially, Ms. Amaraporn said that the number of applications has been decreasing and asked for efforts to increase the number of applications. In the category of small and medium enterprises that started this fiscal year, there were no applications on the EM

of the industry and two regarding EM of buildings.

1) Starting from this fiscal year, applications were divided into two groups by scale, large or mid and small. However, the standard is low: 2000MWh/Y (= 2 million kWh/Y) for buildings and 10 million MJ/Y for the industry.
2) The phrase "involve significant innovation" may not be appropriate as the definition of special submission.
3) Are there any improvement for evaluation standard to facilitate determination, such as creating a chart showing an improvement in energy efficiency or introducing normalizing to give scores?

There were active discussions on the above subjects. Outline of the discussions and the conclusion are as follows:

1) Comments from the participants were: 1) combined total of electricity and fuel should be used; 2) the standard value should be changed to 4 million kWh/Y; 3) how about adding a new category for the floor area of 10,000 m^2 or smaller; 4) definition of "fuel" in the industry category is confusing so it should be changed to "total energy consumption" or "oil equivalent"; 5) in the industry category, the standard should be changed to 30 million MJ/Y from present 10 million MJ/Y; 6) that contradicts to last year's decision to set a low standard. Eventually, it was decided that no change will be made for the EM for buildings while "30 million MJ/Y of total energy consumption will be introduced for the industries". Taking the difference of converted value of fuel and electricity by country, "National Conversion Table" will be added at the end of the application document.
2) "Significant innovation" in the requirements of special submission is not appropriate for EM projects, both for buildings and industries. To increase the number of applications, this will be changed to "involve innovation/successful best practices/excellent cases".
3) Energy conservation measures summary table used in the case of Epson Optical, an awardee of this fiscal year, will be a model to show a change in the improvement of energy efficiency. Normalization of the evaluation score used as the screening standard in the buildings was introduced. To avoid giving too much awards, like three best practices both in the building and industry categories, the method of normalization will be included as the supplementary document for review by BOJ. (→prepared by ACE) There was no comment on the "Improvement of Guideline", but the conclusion of the discussion will be released on the ACE website (change of the Submission Sheet) and also at the Seminar-Workshop. Lastly, the schedule for the next year was confirmed: applications will be accepted from January and the deadline will be May.

3. Achievement of the Research Forum

As described above, the following outputs have been obtained through lectures, analysis and active discussions at the subsequent workshop:

(1) Policy for improvement of the PROMEEC Phase-3, Step-2 of the ASEAN Energy Management System
   1) There were requests for support to publish the EMHB translated into the local language to make it widely known. ACE/ECCJ will consider the request.
   2) ASEAN version of the EA Handbook/Manual will be discussed with the PROMEEC industry and the building team.
   3) Harmonization with ISO50001 will be considered for the future.
   4) We are going to check the "One Stop to System" icon on the ACE website already posted. As for "Advisory Service", ACE will prepare the registration form to discuss operation methods and disclaimer policies at the post workshop.

(2) Improving operation and the evaluation guideline of the EM Award System

1) Classification standards of large enterprises and small and medium sized enterprises: no change for the building category but the standard will be changed to 30 million MJ/Y for the industry category.
2) A requirement for the special submission was changed to ”involve innovation/successful best practices/excellent cases”.
3) It was decided to introduce normalizing method in the EM screening. Supplementary documents will be prepared by ACE.

Based on the achievements above, ACE will prepare application documents and the guidelines in January 2011, officially announcing the acceptance the applications for the 5th ASEAN EM Best Practices.

Lastly, Ms. Amaraporn (Thailand) who served as the chairman of the ASEAN Award System of Best Practices in Energy Management for Industries and Buildings for three years, gave an address before her term ends. She recommended vice chairman, Mr. Habitan (Philippines) as the successor, which was agreed unanimously. Dr. Manan (Malaysia) was recommended as the next vice chairman, which was also approved immediately.

As stated above, the sixth Research Forum held in Japan finished with a lot of significant achievements. We hope the PROMEEC Projects and the “ASEAN Award System of Best Practices in Energy Management for Industries and Buildings” will further be improved.

Photos of the Research Forum are shown in the Attachment Material. (not attached)

－End of main part－

Attachment Material III-2-6-1 Program of the Research Forum

FY2010 International Project for the Efficient Use of Energy

[Project on Human Resources Development for Energy Conservation: Project on Improvement of Base for Energy Management in ASEAN Countries]

- (The 6th Research Forum in Japan) -

November 9, 2010

Technical Cooperation Department, International Cooperation Division

1. Objectives

(1) Research on the functions to be added in the Step-2 to improve the ASEAN Energy Management System

(2) Operation of a system to collect and diffuse the best practices in the ASEAN Award System of Best Practices in Energy Management in a more effective way; analysis and research that contribute to the improvement of the evaluation standards

(3) Input of experiences of Japan that contribute to the above (Energy Management System, the aim of the award system and advantages to join the award system)

2. Period: November 9-11, 2010 (three days)

3. Invited Researchers: One from each country from the following: total number was 11 (see the Attachment Material III-2-6-2)

(1) Members of the BOJ for the ASEAN Award System of Best Practices in Energy Management

(2) Focal Point of the ASEAN EE&C-SSN (Energy Efficiency & Conservation Sub-Sector Network)

(3) Technical staff of the ASEAN Centre for Energy

4. Schedule

Schedule		Contents
Nov. 8	(Mon)	Departure and arrival in Japan
Nov. 9 Location: Room 804 of the Tekko Kaikan	(Tue)	9:30-12:30 9:30-9:40 **Opening Remarks** by Mr. Ishihara, ECCJ 9:40-9:45 **Briefing of the Schedule** by Mr. Ogura, ECCJ (Advisor for the ASEAN EM Award System) 9:45-9:50 **Group Photo Session** 9:50-10:20 **Keynote Speech** by Mr. Yoshida, ECCJ (Manager of the PROMEEC Projects) 10:20-10:30 **COFFEE BREAK** 10:30-11:30 **Recent Trend of the Award System of the Best Practices of Energy Conservation in Japan** (Mr. Tsujimoto) 11:30-12:30 **Energy Management System under the Revised Energy Conservation Law of Japan** (Mr. Ogura)
		14:00-17:00 **Analysis, Researches and Comparison of the Applications and Award-winning Practices in the Fourth ASEAN Award System of Best Practices in Energy Management and the Awarding of Successful Cases of Energy Conservation in Factory & Building for FY2009 in Japan** 14:00-14:30 **Comments from the BOJ on the Fourth Meeting** (representative of ASEAN BOJ and ACE) 14:30-15:10 **Description of the Analysis of the Applications** (Mr. Sato, Technical Expert) 15:10-15:30 **Introduction of Successful Cases in Japan for FY2009** (Mr. Ogura) 15:30-15:50 **COFFEE BREAK** 15:50-16:30 **Comparison of Best Practices in ASEAN and Key Step Approach of ASEAN EMHB** (Mr. Ogawa, technical expert at ECCJ) 16:30-17:00 **Discussion and Opinion Exchange：Possibility for Improvement**

		based on Past Applications and Awards (Chaired by Mr. Ogura)
Nov. 10 in Honjo City	(Wed)	9:30-12:00 (Move) 13:15-15:15 **Factory Tour to Asahi Sangyo (awarded as a Successful Case of Energy Conservation in Factory & Building)** **(Theme) Advantages of Participating in the Award System and Information Sharing** 15:15-18:00 (Move) Mr. Ogura, Mr. Sato and Ms. Tamura of ECCJ
Nov. 11 Location: Room 804 of the Tekko Kaikan	(Thu)	9:30-12:30 **Workshop (Session 1)** **Roles and Functions expected for the ASEAN Energy Management System in the PROMEEC Step - 2** Chaired by Mr. Ogura, Advisors: Mr. Yoshida, Mr. Ushio, Mr. Sato, and Mr. Ogawa
		14:00-16:15 **Workshop (Session 2)** **Improving Classification and Evaluation Standards for the ASEAN Award System of Best Practices in Energy Management** Chairperson: Ms. Amaraporn, representative of the BOJ); Advisor: Mr. Yoshida, Mr. Ushio, Mr. Ogura, Mr. Sato and Mr. Ogawa 16:20-16:30 **Summary of the Workshop** (chaired by Mr. Ogura)
Nov. 12	(Fri)	Leave Japan

* Address of the Tekko Kaikan: 3-2-10 Nihonbashi Kayabacho, Chuo-ku, Tokyo (nearest station: Kayabacho Station, Hibiya Line)

List of Participants for FY2010 Energy Management Research Forum (November 9-11)

November 9, 2010

1. Participants from ASEAN

No.	Name	Country	Affiliation and Title
	Absent	Brunei Darussalam	
1	Mr. Lieng Vuthy (*)(**)	Cambodia	Deputy Director, Department of Energy Technique Ministry of Industry, Mines and Energy
2	Mr. Budi Harjanto Listijono (*)	Indonesia	President Director University of Catholic Atma Jaya Jakarta
3	Mr. Viengsay CHANTHA (**)	Lao PDR	Chief of LEPTS Regulatory Unit, Electric Power Management Division Ministry of Energy and Mines
4	Mr. (Dr.) Zainuddin Bin Abd Manan (*)	Malaysia	Professor (Chemical and Natural Resources Engineering) Universiti Teknologi Malaysia
5	Mr. U Win Khaing (*)	Myanmar	Vice President Myanmar Engineering Society
6	Mr. Artemio Ponesto Habitan (*)	Philippines	OIC-Division Chief Department of Energy
7	Ms. GANESH, Latha Ratnam (*)	Singapore	Senior Principal Analyst Energy Market Authority
8	Ms. Amaraporn Achavangkool (*)	Thailand	Senior Scientist Department of Alternative Energy Development and Efficiency (DEDE)
9	Mr. Dang Hai Dung (*)	Vietnam	Deputy Chief Of Technical Standards and Metrology Division Ministry of Industry and Trade
10	Mr. Oscarlito Carillaga Malvar	Indonesia	Technical Officer ASEAN Centre for Energy

(*)Member of the Board of Judges for the ASEAN Award System of Best Practices in Energy Management for Industries and Buildings

(**) ASEAN EE&C-SSN Focal Point

2. Participants from Japan

2-1. Lecturers and Advisors (The Energy Conservation Center, Japan)
Mr, Akira Ishihara, Division Manager, International Cooperation Division
Mr. Kazuhiko Yoshida, General Manager, Cooperation Planning and Management Department (PROMEEC project manager/advisor for the ASEAN EM Award System)
Mr. Yoshitaka Ushio, General Manager, Technical Cooperation Department (Manager of PROMEEC Building/observer for the ASEAN EM Award System)
Mr. Yutaka Ogura, General Manager, Technical Cooperation Department (PROMEEC EM project manager/advisor for the ASEAN EM Award System)
Mr. Hisakazu Tsujimoto, General Manager, Technology Planning and Management Department (in charge of operating the Awarding of Successful Case of Energy Conservation in Factory & Building of Japan; dissemination of the best practices and technologies)
Mr. Takashi Sato, Technical Expert, Technical Cooperation Department (in charge of PROMEEC EM project/advisor for the ASEAN EM Award System)
Mr. Fumio Ogawa, Technical Expert, Technical Cooperation Department (in charge of PROMEEC EM project/advisor for the ASEAN EM Award System)
Ms. Katsuko Tamura, Cooperation Planning and Management Department

2-2. Greetings on 9th (METI)
International Affairs Section, Policy Planning Division, Energy Conservation and Renewable Energy Department, Agency for Natural Resources and Energy : absent this fiscal year

2-3. Interpreter (Nov. 9th and 10th)
Ms. Maki Haga from Congress Corporation

III-3. Activity Report and Achievements in Each Country

III-3-1. Summary Reports of Intensive Seminar-Workshop and Company Visits

Activities described above have resulted in the following achievements for the establishment of the ASEAN Energy Management System:

(1) As shown in the Table III-3-1-1, number of participants reached 190, who understood and were interested in the activities of the Project and the functions and programs of the ASEAN Energy Management System. The participants also understood the usability of energy management tools prepared in the system in group works.

(2) As shown in the Table III-3-1-2, a total of 170 people received training to use the Energy Management Handbook, including persons from pioneer companies in five countries who are in charge of introducing the Energy Management Handbook. The participants were given explanations on the contents of the handbook, activity guidelines and how to use related tools including In-house Database, through workshops to experience group works to make researches on energy management of the pioneer companies.

(3) In addition, participants visited nine factories/buildings/related organizations in five countries to introduce this project, its significance and functions, programs and tools of the ASEAN Energy Management System. At the same time we exchanged opinions and provided advice regarding the challenges of energy conservation for factories and buildings, asking for continuous support as well. In most cases participants of the Intensive Seminar-Workshop or the training greeted us.

(4) For the companies planning to introduce and use the Energy Management Handbook, follow-up of activities was provided and future action plan was discussed.

(5) These activities have helped us increase the number of companies interested in joining this project and willing to cooperate us in the future increased.

(6) As a result, cooperation network among companies, organizations and persons concerned in ASEAN has been expanded. As shown in the Table III-3-3, it should be noted that we have successfully received support from many parties by visiting a total of 117 government agencies or implementing bodies in the seven years since the start of this project in 2004.

(7) After the Sixth Research Forum in Japan, researchers in ASEAN provided valuable comments on the points to improve the ASEAN Energy Management System, which will become reference for the future. Also evaluation guidelines were reviewed based on the analysis of the result of the fourth ASEAN Award System of Best Practices in Energy Management for Industry and Building. Application guidelines were revised as well.

Country	No. of participants
Vietnam	30
Brunei Darussalam	56
Cambodia	34
Indonesia	39
Myanmar	31
Total	190

Table III-3-1-1: No. of Participants in the Intensive Seminar-Workshop

Country	No. of participants
Vietnam	26
Brunei Darussalam	50
Cambodia	37
Indonesia	27
Myanmar	30
Total	170

Table III-3-1-2: No. of Participants in the Training to Use Energy Management Handbook (by country)

	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam	Total
Government organization	3	1	2	1	2	1	3	1	2	3	19
Power company or state-owned company	0	3	2	1	0	1	1	0	0	1	9
Implementing organization	0	0	3	0	2	0	2	0	2	5	14
Industry organization, university or other educational and research institution	1	2	0	0	0	0	1	1	0	1	6
NGO / NPO	0	0	1	0	0	0	0	0	0	0	1
Private company (factory or building) and ESCO	12	7	11	10	4	0	7	0	8	9	68
Total	16	13	19	12	8	2	14	2	12	19	
										Grand total	117

Table III-3-1-3: Classification of the Companies/Organizations and Cumulative Total of Visits

III-3-2. Activities to Finalize and Disseminate the Energy Management Handbook

This fiscal year, we continued activities of the previous year and provided training mainly on the finalized ASEAN Energy Management Handbook and dissemination of it. Status of the revision and translation into local languages of this handbook taking the status and the necessity of it in the country into consideration is: in Brunei Darussalam, the translated version was created and the contents were introduced in this training, as in the previous year. The training was given by the professor of Universiti Brunei Darussalam. This helped the country to build a foundation for the next step. Myanmar, in which this project is implemented for the first time, showed their proactive efforts. Through this training many participants were able to understand the Handbook. While it was made clear that many countries still want support for translation into their local languages and printing/publishing.

1. Training on the Energy Management Handbook
As described in III-2 above, training on the Energy Management Handbook was provided in five countries this fiscal year including Vietnam, Brunei Darussalam, Cambodia, Indonesia and Myanmar. Top priority was given to the detailed description of the Key Step Approach and then the application of it to Small Group Activity (SGA).
The one-day training was on how to use the Energy Management Handbook, In-house Database and Technical Directory, including detailed explanation, based on the basic program as shown below:
1) Lecture on detailed contents and important guidelines of the Energy Management Handbook
2)Workshop (group activities): ASEAN Award Best Practices, one from industry and one from buildings were chosen in advance in each country. Copies of the application documents were distributed on the day.

a) The outline of the best practices was introduced.
b) Based on a) above, evaluate and understand the contents using the Key Step Approach, an energy management method introduced in the Energy Management Handbook. Also, group work was implemented aiming at extracting good points and development new ideas for improvement.

2. Vietnam
As in the Lao PDR, the Energy Management Handbook has been translated into the Vietnamese with the cooperation of pioneer companies. We expected dissemination of it, but actually it has not been printed and publicized. In Vietnam, the Diet passed the Energy Conservation Act of the country in June 2010 and the concerned parties may be busy. Relevant handbook or guidebook was introduced. We hope the Vietnamese version of the Energy Management Handbook will be printed and disseminated in the near future.

3. Brunei Darussalam
In Brunei Darussalam, there was an instruction by ECCJ experts for the dissemination of the Energy Management Handbook in June 2009. Following this, the country created its own Energy Management Guide based on the ASEAN Energy Management Handbook. Last year, a professor at University Brunei Darussalam introduced and gave a lecture on the guide, providing training as well. This was a model case of training implemented again by the host country of Phase-3, at which ASEAN PROMEEC Project aims. This was the second year and the speaker seemed experienced in giving an introduction of the energy conservation analysis guidelines for buildings.

4. Cambodia, Indonesia and Myanmar
Participants from these three countries listened to the lecture on the Handbook intently and joined group work. Many of them said that they need translated version, printed and published. This was the first time of this training for Myanmar. Participants from Myanmar , including FP, were actively involved in the training.

III-4. Summary of the Workshop at the Sixth Research Forum in Japan

1. Policy to improve functions of the Step-2 System of the ASEAN Energy Management System

Opinions from the participants were summarized as follows:

(1) Request for support for translation and publishing the local version of the EMHB will be considered by ACE/ECCJ.
(2) ASEAN version of the EA Handbook/Manual will be discussed with the PROMEEC industry and the building team.
(3) Harmonization with ISO50001 will be considered for the future.
(4) We are going to check the “One Stop to System” icon on the ACE website already posted. As for ”Advisory Service”, ACE will prepare the registration form to discuss operation methods and disclaimer policies at the post workshop.
(5) ACE will soon prepare a Registration Form of the Advisory Service to continue discussing the actual operation method and disclaimers in the post workshop.

2. Policy for the improvement of the operation and evaluation guidelines for the Award System of Best Practices in Energy Management

Improvement of operation and evaluation guidelines of the ASEAN Award System of Best Practice in Energy Management was discussed in the sixth Research Forum, based on the consultation results of BOJ in 2010. The following decisions were made:

(1) Standards for large enterprises and small and medium enterprises: unchanged for buildings, but for industries the standard was changed to 30 million MJ/Y.
(2) Part of the requirements for Special Submission was changed to ”involve innovation/successful best practices/excellent cases”
(3) It was decided to introduce normalizing method in the EM screening. Supplementary documents will be prepared by ACE.

With the achievements described above, the Sixth Research Forum held in Japan finished successfully. We hope the PROMEEC Project and the “ASEAN Award System of Best Practices in Energy Management for Industries and Buildings” will further be improved.

IV. Develop and Operate Functions to be included in the "ASEAN Energy Management System"

IV-1. Overview

With a goal to establish and operate the basic functions of the ASEAN Energy Management System by fiscal year 2009, efforts have been made to finalize the Step-1 System, but it has yet to be completed. The Step-1 System consists of basic functions to provide information, including:

(1) Best practices of energy management (Industries and Buildings)
(2) Completed energy management tools
(3) Information for the search system between the implementing organizations and the customers

Following programs and tools have been established and operated to gather and offer information above. Progress of establishment of these programs/tools is shown in Table IV-1-1.

(1) Collect and disseminate the best practices in energy management for industries and buildings
   1) Plan, establish and operate the ASEAN Award of Best Practices in Energy Management for Industries and Buildings
   2) Create a website to introduce award-winning practices (on the website of the ASEAN Centre for Energy)
(2) Energy management tools
   1) "ASEAN Energy Management Handbook" (finalized in fiscal year 2008)
   2) In-house Database and Technical Directory (being improved and established for industries and buildings)
   3) Methods to use these tools
(3) Information system for the search system between the implementing organizations and the customers
   1) Online Energy Information System (search system between the implementing organizations and the customers) (accepting registration being and preparing for the trial operation)
      Currently promoting registration of implementing organizations and the customers through Focal Point of each country

These have been finalized and are now being operated except for the Online Energy Information System, which is being prepared for trial operation for verification and finalization of the system specifications, about two years behind the initial schedule. This delay is attributed to the fact that check points have been pointed out before requesting registration to the implementing organizations for Focal Points, which is taking longer time than initially expected and the number of registration to date is small.

Also, functions to be added to the Step-2 System and programs and tools to improve Step-1 System are being considered.

Specifically, it was confirmed that service provision function to support energy conservation in the Step-2 System and the installation of "One Stop System" for users' convenience in the ASEAN Energy Management System should be prioritized.

A plan is under consideration to make a system to encourage specialists in the ASEAN and Japan to provide advices and answer and give support to the inquiries to the users.

In addition, a plan is currently under study to prepare technical handbooks to improve the tools (Thermal Energy Efficiency Improvement Handbook and the Electrical Energy Efficiency Improvement Handbook) as well as to develop an information provision system on energy conservation technologies and energy saving equipment manufacturers and ESCO, named e-Directory, in which equipment manufacturers voluntarily register on the Internet.

PROMEEC (Energy Management)
ASEAN Energy Management System: Functions and Programs/Tools

Functions / Programs and Tools	1. Sharing Information	2. Service Provision	3. Rule / Scheme and Conditions for 1&2
1. PROGRAMS			
1-1. Award System of EM Best Practices (Collection and Dissemination of Best Practices)	Done/Under Working (Improving)		National Competition (Depends on Countries)
1-2. Registration of ASEAN-Japan Experts (Advisory Services)		Under Study	Under Study (Voluntary Self-Registration)
1-3. Expansion of Network ASEAN Cooperators' Network (Cooperation to Activities and Information Sources)	On-going		Voluntary Based on Individual Conditions
2. SUB-SYSTEMS and TOOLS			
2-1. Information System to Disseminate (ACE / ECCJ Web.)			No Rules and Conditions
(1) Best Practices in Energy Management	Done / Improvement		
(2) ASEAN Energy Management Handbook	Finalized		
(3) In-house Database (Standardized Data Files)	Developing (Partially Done)		
(4) Technical Directory	Developing (Partially Done)		
2-2. Handbooks			
(1) ASEAN Energy Management Handbook	Finalized	One-day Training *	* Training : Actual Use
(2) Thermal Energy Efficiency Improvement handbook	Finalized		
(3) Electrical Energy Efficiency Improvement Handbook	Finalizing		
2-3. Online Energy Information System to Use Implementing (Bridging Implementing Organizations and Customer	Ready for Trial (Registration in System)	Bridging Stakeholders in ASEAN	Security / National Rule (Depends on Organization)
2-3. Directories			
(1) Directory of ESCOs	Under Preparation		Under Study
(2) Directory of Suppliers (Equipment & Tech.)	Under Preparation		(Volunary Self-Registration)

Table IV-1-1: Functions, Plans and Tools of the Energy Management System

IV-2. Operation of the Award System of Best Practices in Energy Management for Industries and Buildings

Operation of the ASEAN Award System of Best Practices in Energy Management for Industries and Buildings began in the latter half of fiscal year 2006, which successfully ended its fourth round in July 2010. Based on the results and analysis of the award-winning practices, evaluation standards and application guidelines were revised in January 2011. Then, submission of applications for the fifth round of the award began.

IV-2-1. Results of the Fourth Round of the Award

1. The 4th Meeting of the Board of Judges (BOJ-EM) for the ASEAN Best Practices Competition for Energy Management

On June 8 and 9, 2010, seven BOJ members for the award system of the ASEAN best practices of energy management (BOJ-EM) from the ASEAN countries, except for Singapore, Philippines and Vietnam, an ECCJ observer and two persons from the ACE secretariat, a total of 10, met in Vietnam for review of the applications in the buildings and industries sections. Prior to this the applications were sent from the Focal Point of each nation to the ACE secretariat by early May 2010.

This was the fourth round of the award, chosen from seven applications in the buildings section, eight in the industries section and three from the "Special Submission" section sent from seven countries, Brunei Darussalam, Malaysia, Indonesia, Philippines, Philippines, Myanmar, Thailand and Vietnam. After the two-day screening session, three applications in each of large-scale buildings section and the industries section were chosen, while one case in each of small to medium-sized buildings and the Special Submission section. By country, four from Thailand, two from the Philippines and one from Indonesia. In the buildings section Indonesia, Malaysia and Vietnam were chosen while Thailand and Indonesia were given awards in the industries sector. After a discussion of BOJ members, it was agreed that the screening method needs review in consideration of the fact that three cases were chosen both in the Industries and the Buildings sections. This issue was discussed at this year's Research Forum and the introduction of normalizing method has been confirmed.

Beginning in this year, a new category was introduced for small and medium enterprises by annual energy consumption to offer more opportunities to win award, but there were no applications in the Industries section.

(1) List of applications

There were seven applications (two for small and medium buildings and five for large-scale buildings) in the buildings section, eight in the industries section and three in the special section of industries from seven countries of Brunei Darussalam, Malaysia, Indonesia, Philippines, Myanmar, Thailand and Vietnam, totaling 18.

Buildings (7 applications)	
Small to mid-sized buildings	
Indonesia	Hotel Sendona Manado
Thailand	Somdej Prasongkharach XVII Hospital
Large-scale	
Malaysia	Block F, Public Work Department Headquarters
Philippines	Market! Market!
Thailand	Phyathai Sriracha General Hospital
	Pranakorn Sri Ayutthaya Hospital
Vietnam	Ocean Park Building

Industries (8 applications)	
Small to mid-sized industries: no applications	
Large-scale	
Brunei	Brunei LPG Sendirian Berhad
Indonesia	PT. Semen Tonasa
	PT. Semen Baturaja
Philippines	Dolefl
	Philippines EPSON Optical Inc.
Thailand	Rayong Gas Separation Plant
	Thai-German Ceramic Industry Public Company
Vietnam	Hanoi Textile Company
Special Submissions	
Indonesia	PT. Semen Tonasa
Myanmar	FAME Pharmaceuticals
Thailand	Economizer of Charoen

(2) Result

After the two-day screening process, the following eight cases, four in the Industries section and four in the Buildings section were chosen as the winner. While five cases, two from the Industries section and three from the Buildings section were selected as the runner-up, as shown below:

Buildings		
Small to mid-sized buildings		
Winner	Somdej Prasongkharach XVII Hospital	
1st Runner-Up	Hotel Sendona Manado	
Large-scale		
Winner	Phyathai Sriracha General Hospital	
Winner	Pranakorn Sri Ayutthaya Hospital	
Winner	Market! Market!	
1st Runner-Up	Block F, Public Work Department Headquarters	
2nd Runner-Up	Ocean Park Building	
Industries (large-scale)		
Winner	PT. Semen Tonasa	
Winner	Thai-German Ceramic Industry Public Company	
Winner	Philippines EPSON Optical Inc.	
1st Runner-Up	Rayong Gas Separation Plant	
2nd Runner-Up	PT. Semen Baturaja	
Special Submission		
Winner	Economizer of Charoen	

(*) Each judge of the board gives a score out of 100, and the average of scores of all judges will be given. Judges are not allowed to give a score to the company from his/her home country. In the Special Submission section, selection was made by a majority of the members.

Detailed documents of the above 18 applications are stored at the Technical Cooperation Department, International Cooperation Division, ECCJ, and ASEAN Centre for Energy.

(3) Discussion after the evaluation

1) New category for small and medium enterprises

Large-sized enterprises consume a large amount of energy and have advanced technologies on energy management. That means that it is highly unlikely that small and medium enterprises receive award under the current scheme. Against this background, a new category for small and medium enterprises, which has been discussed since last year, was established in fiscal year 2009. This was discussed at the Research Forum held in Tokyo in December 2009. At the forum, BOJ members have adopted the definition of small and medium enterprises as follows:

Buildings: Electricity consumption per year: 2,000 MWh or less

Industries: Fuel consumption per year：10 Million MJ or less

There was a discussion to revise the standards of energy consumption for large-scale and small and medium enterprises at the Research Forum held in November 2010, following the fourth award. As a result, the new standard for the industries section was set at 30 Million MJ.

2) Review of the definition of the Special Submission

This new category was added from the fourth award after the Research Forum in December 2009, but we received no applications in the industries section. In order to increase opportunities, revision of definition was discussed at the Research Forum in November 2010.

3) Introduction of the normalization method

In the fourth round of the award in 2010, three cases in each of the Industries and the Buildings categories were given the same score, all of which received the highest award. Reflecting such a situation, the BOJ meeting discussed the review of how the scores are given. It was decided at the Research Forum in November 2010 to introduce the normalizing method to prevent giving the same score to more than one application.

2. Analysis of the award-winning cases

Proposals for improvement included in 18 applications in either buildings or industries section of the fourth ASEAN Best Practices Competition for Energy Management were analyzed from the following standpoints of view:

(1) Project activity
(2) Major improvement proposals
(3) Conserved energy and its economic aspect
(4) Invested amount
(5) Possibility of dissemination

One application case includes multiple proposals for energy conservation, resulting in a synergic and organic effect on energy conservation. Analyzing these helps finding an effective dissemination method, while improving the application and evaluation guidelines. The result was introduced at the Intensive Seminar-Workshop held in five countries as a topic of discussion for the participants. Also it was shared with the BOJ-EM members when the review was considered on the evaluation guidelines at the Research Forum in November 2010 held in Japan.

Details of the analysis are shown in Tables IV-2-1, IV-2-2 and IV-2-3 below:

This year, applicants included companies which project personnel visited for opinion exchange and provision of support and companies which cooperated in our energy audit activities, to show actual improvement results. We expect such applications will continue to increase in the future.

Table IV-2-1: Analysis of Applications (1) (Industries-1)

Country	Name of Company (Outline of Company)	Sub-Industry	Name of Project / Activity	Key Improvements	Annual Effect		Investment	Possibility to Disseminate	Others
					Saved Energy	Economy			
Brunei	Brunei LNG Sendirian Berhad Number of employees: 521: Annual Fuel Consumption in 2009: 1.04 mtpa;	LNG	(Name of Project) Energy efficiency at Brunei LNG Sendirian Berhad in Brunei Darussalam (Outline) In the company , energy efficiency improvement is not just about applying new technologies but more importantly is how creative and innovative we are in creating a working environment where people are fully motivated to perform to their best and in leading their key stakeholders to share a common purpose.	**Investment measures** (1) Advance Process Control (APC) (2) Boil off Gas (BOG) Compressor Replacement /Upgrading Project (3) Cooling water system Rejuvenation	(1) 14,000 t/y (2) 4 MMB$/y (3) 4% improvement in energy use	n.a.	n.a.		To be focused on current activities and non-investment measures.
Indonesia	PT. Semen Tonasa Number of employees: 1,800: Annual Electric Consumption in 2009:351 Juta kWh/y & 3.4 Million kcal/y	Cement	(Name of Project) Energy Management in PT. Semen Tonasa (Outline) The company has been committed to run an effective , efficient, sustainable and increased production with eco-friendly. The company has conducted a variety of energy management programs, Project Implementation Power Management System, Electric Energy Saving Program, Adding the third material to replace clinker, biomass as fuel substitution Kiln, Hot Gas for coal drying plant, utilization of flue gas combustion for electricity generation is called Waste Heat Recovery Generator (WHRG). Results of this program provides significant improvement seen from the performance of the company, Seems to affect the sustainability of increased production of cement with the operation and reduce energy intensity.	Investment. (1) Power Management System(***Synchronization power supply PT.PLN and BTG)*** ***(2) Electric Energy saving Program*** ***(3) Biomass fuel for Kiln*** (4) Hot gas for coal drying plant (5) Waste Heat Recovery generator (WHRG)	Total Power Save: 4.5 Billion Rp .	(1) 1.5 year for Power management (2) 0.4 for Thermal Management	(1) 3.2 Billion Rp for Power Management. (2) 6.8 Billion Rp for Thermal Management	***Possibility to apply in other cement factories in terms of the improvement of energy efficiency index.***	Winner

Table IV-2-1: Analysis of Applications (1) (Industries-2)

Country	Name of Company (Outline of Company)	Sub-Industry	Name of Project / Activity	Key Improvements	Annual Effect		Investment	Possibility to Disseminate	Others
					Saved Energy	Economy			
Indonesia	PT. Semen Baturaja Number of employees: 550: Annual Electric in 2008 : 85,900,00kWh/y	Cement	(Name of Project) Energy Management for Productivity Improvement in PT. Semen Baturaja (Outline) The company has vision to be efficient, competitive and growing company. The vision drives every employee to operate the plant efficiently and environmental friendly, management has establish Energy Committee in order to realize the plant vision. Implementation of energy the efficiency programs has given the positive impact to the plant by increasing productivity by 3.7 % equivalent to IDR 2273 Billion.	A. Non-Investment (1) TPM (2)Implementation Procedure in Peak Load B. Investment (1) Install VSD ESP fan (2) Retrofit Stacker Limestone from Relay System to PLC system (3) Install system Control Timer Water Pump (4) Install Soft Starter at Compressor	.A.(1)21 Billion Rp (2) 1.6 Billion Rp B. (1) 893MWh/y (2) n.a. (3) 28 MWh/y (4)72MWh/y	(1) 0.48 year (2) - (3) 0.51 year (4)3.97 year	B.(1) 300MM Rp (2)148 MMRp (3)10 MMRp (4)200 MMRp	***Measures for reduction of electricity will be effective for other cement industries.***	2nd Runner-UP
Philippines	Dole Philippines Incorporated Number of employees: 5081: Annual Electric Consumption in 2009: 52.6 GWh/y & 11990 Kl/y	Food	(Name of Project) Dolefil's Best Practice in Energy Efficiency & Conservation (Outline) The company's commitment in improving energy efficiency and mitigating environmental degradation does not only mean to satisfy its stipulations in Environmental Management System (EMS) and Corporate Social Responsibility (CSR). but also to sustain its operation and protect the welfare of its people. Responding to the challenge, various measures were employed along with the promotion awareness to all employees. It is definitely the company's way of developing a culture on energy efficiency and conservation anchored on commitment and cooperation.	A. Non-Investment (1)Automation of dryer motor, pack motor (2) Switching off lamps (3) Switching off freezer compressor and cooker /cooker drive (4) Replacing chilled water with potable water B. Investment (1) Use of RO water as boiler make -up water (2) Steam and hot water line insulation (3) Replacement of fluorescent lamps (4) VSD for centrifuge motors	A.(1) 765MWh/y (2) 297MWh/y (3) 258 MWh/y (4) 14 MWh/y B. (1)584kL/Y (2) 180 Kl/y (3) 537MWh/y (4) 297 MWh/y	(1) Payback; 0.54year (2) 0.43 year (3) 0.77 year (4) 0.57 year	(1) 150 thousand US$ (2) 37 thousand US$ (3)27 thousand US$ (4)11 thousand US$		
Philippines	Philippines Epson Optical Inc. Number of Employee: 911 Annual Electric; 6,500MWh/y	glass	(Name of Project) Energy management Program- a Global Commitment : Philippines Epson Optical Inc (Outline) The company is capable of producing 10.8 million lenses annually without major changes in current facilities. Production transfer from Japan to Philippines will be expected such as 1.74 product code and special order. The company has advocacy in production of environment. Striving for continues growth and be world's renowned manufacturer of High Index Ophthalmic Lens without compromising the basic of the future generations.	B. Investment (1) Replacement of JF Washer with the Manual Portable Washer (2) Removal of Multicoat Washer and MC Annealing Oven (3) Removal of Pre-Washer in the 12th Bath Washer New line (4)Process conversion - Gasket to Tape Process (5) Elimination of NMP washer #1 & #2	(1) 203MWh/y (2) 726 MWh/y (3) 126 MWh/y (4) 1117 MWh/y (5) 312 MWh/y	1) Payback period 0.07 year (2) 0.002 year (3) 0.01 year (4) 4.3 year (5) 0.00002 year	1) 1287US$ (2) 203US$ (3) 87.2 US$ (4) 2781M US$ (5) 271 US$	***By the adoption of improvement activities in Japanese way & active investments, energy efficiency index was improved much. These measures will be applicable for other.***	Winner

Table IV-2-1: Analysis of Applications (1) (Industries-3)

Country	Name of Company (Outline of Company)	Sub-Industry	Name of Project / Activity	Key Improvements	Annual Effect		Investment	Possibility to Disseminate
					Saved Energy	Economy		
Thailand	Rayong Gas Separation Plant Number of employees: 423: Annual Electric & Fuel in 2009: 72,629MkW/h & 14,514,090GJ/y;	Gas	(Name of Project) Energy Management in Rayong Gas Separation Plant PTT Public Company Limited Thailand (Outline) Strategic objectives of the company focus on energy and cost effectiveness also environmental concern GSP recognize how important of organization participation on energy conservation. Campaigns were arranged for encourage knowledge sharing, energy conservation QC stories. Total Productive Maintenance (TPM) small group activities, and engineering's modification and improvement system. These activities establish knowledge management (KM) of organization also forward to sustainable improvement.	**A. Non Investment** (1) Split type of air conditioner cleaning(2009) (2) Optimization of LPG production mode (2009) B. Investment (1) Split type air conditioner replacement (2009) (2) Advanced Process Control (2008)	A.(1)227,549kWh/y (19,500US$) (2) 21,300kWh/y (63,700US$) B. (1) 217,500kWh/y (18,600US$) (2) 84584 GJ/y	(1) 3.8 years (2) 0.76 year	(1) 70,000US$ (2) 224,000US$	***Methodologies(SGA for maintenance, Knowledge sharing) of the company are applicable for other factories.***
Thailand	Thai-German Ceramic Industry Public Company (TGCI), Annual Energy Consumption:1118x 10^6 MJ	Ceramic	(Name of Project) Energy Conservation in TGCI (Outline) The vision of TGCI is that ceramic business has a profit from a sustainable Policy; Reduce production costs and Operating expenses, Stable sales price maintaining and sales target increasing, Personnel development, Management and Technology system for satisfy customers. Then the sustainable development made TGCI reducing energy consumption continuously in 2007=8.29 GJ/Ton.(Reducing of energy consumption to 48% comparing in 2006) The results of the business reduced cost within three year up=9.8 million US$ using TQM & TPM methodologies.	A. Non-Investment ***(1) Reduce Motor Conveyer*** ***(2) Auto Stop Line Conveyer*** ***(3) Set point optimum temp. Cooling Tower*** B. Investment (1) Install Inverter Final Cooling Blower (2) Install Ozone Cooling Tower (3) Install Inverter Pump	A.(1) 74483kWh/y (2) 82760kWh/y (3)125112kWh/y B.(1)1140490kWh/y (2)1714000kWh/y (3) 289655kWh/y	B. (1) 0.27 year (2) 0.17 year (3)0.32year	(1) 894,000Baht (2)840,000 Baht (3)273000Baht	***Effective measures and effective small investment attained large energy conservation results in addition to TPM & TQM activities. These will be applicable for other factories.***
Vietnam	Ha Noi May 19 Textile Company Number of Employee;1137, Annual Electric Consumption in 2009; 13,665,002 kWh/y	Textile	(Name of Project) The step-by-step improvement on energy management at enterprise (Outline) The company's Policy on energy management is " Energy saving is increased income for yourself". For an enterprise to implement energy saving is an important factor. Recognizing the importance of energy saving, the company has implemented the technical solutions and management to save energy.	B. Investment (1) Installing inverter for air-conditioning supply pump(Coolant & Hot Water Pumps) (2) Install inverters for Fibre machine system (3) Replacing dust filters and retrofitting air conditioning for fibre factory (4) Installing air conditioning dust filters for Textile factory (5) Lighting system	(1) 33930kWh/y (2) 1068MWh/y (3) 997 MWh/y (4) 473 MWh/y (5) 132MWh/y	(1) Payback period 3.13 year (2) 2.3-3.7 years (3) 2.7 years (4) 2.6 years (5) 2.4 year	n.a.	***Better to divide into Non-investment and Investment measures.***

Table IV-2-1: Analysis of Applications (1) (Industries-Special Submission-1)

Country	Name of Company (Outline of Company)	Sub-Industry	Name of Project / Activity	Key Improvements	Annual Effect		Investment	Possibility to Disseminate	Others
					Saved Energy	Economy			
Indonesia	PT Semen Tonasa Number of employees:1800 : Annual Electric Consumption in 2009: 351 x million kW/h;	Cement	(Name of Project) Power Management for Energy Conservation in PT. Semen Tonasa (Outline) The company management applies the power management based on Energy Management to obtain maximum results. This is apparent from the decrease in electricity consumption (kWh) of 22% in 2008 from the plan and 23% in 2009 from the plan, as well as increased production of 8% and 3% years (2008 -2009), Index kWh/Ton Cement decreased 104 and 100 kWh/Ton of cement (2008 -2009), and EBITA increased 28% and 25% (2008^2009). This success is supported by several programs that have been made, but there are still opportunity to make efficient and innovation to improve company performance, especially electrical energy savings in the PT. Semen Tonasa.	Due to the lack of supply from PT PLN, the company implement Energy management, in the case the Power management System Project with synchronization (setting) PT power supply.	(1) 4.5 million (IDR 000)	Payback period 1.5 year	(1) 580,000US$	***Utilization of Renewable Energy***	
Myanmar	Fame Pharmaceuticals Number of employees: 303 : Annual Energy consumption in 2009: $3.8x10^6$ MJ;	Pharmaceuticals	(Name of Project) Fame Pharmaceuticals Factory (Outline) At the early stage of company establishment, it became to face the problem of lack of electricity due to the development of industries in the country. They change the use of alternate Renewable Energy such as Solar Energy from fossil fuel use when worldwide disputing of fossil fuel depletion and global warming point of view. The factory applied the source of energy for unit operation from fossil fuel base to Renewable energy base.	Investment (1) Adoption of Natural Sun Drying Room (2)Natural Air drying Room (3) Briquette making Machine	(1) 216 million KJ/y(3000US$) (2)172 million KJ/y(2400US$) (3) 216 million KJ/y(2925US$)	(1) Payback period 2years (2) 1 year (3) 0.5 year	(1) 6000US$ (2) 2000US$ (3) 1000US$	***Effective in the reduction of fossil fuel***	
Thailand	Charoen Pokphand Food Public Company (PTF) Number of employees: 190 : Annual Fuel Use in 2009: 640,000ton/y;	Dairy Production	(Name of Project) Economizer (Outline) The purpose of this project was to achieve maximum fuel utilization and reduce fuel cost by recovering heat from the exhausted gas at the exhausted pipes of both boilers and transferring this heat to increase feed water temperature 29 ℃ to 60 ℃ before going to feed tank of the boiler system. By serially connecting both heat exchangers, they could get better fuel utilization and reduced their fuel usage around 639.778 ton per year by the Small Group Activities.	Investment (1) Installation Economizer	(1) 640,000Baht /y	(1) Pay back: 0.22 year	(1) 140,000 Baht	***Energy saving measures(Installation economizer) for thermal energy are very effective (only 3 months payback period) and applied for other industries where not installed yet.***	Winner

Table IV-2-1: Analysis of Applications (2) (Large-scale Buildings-1)

Country	Name of Company (Outline of Company)	Category	Name of Project / Activity	Key Improvements	Annual Effect		Investment	Possibility to Disseminate	Status
					Saved Energy	Economy			
Malaysia	Public Works Department (PWD) Malaysia Number of employees: 836 : Annual Electric Consumption in 2008(BEI) : ***200.3kWh/m2/y;***	Office	(Name of Project) Energy Management of Block F, Public Works Department Malaysia headquarters, Kuala Lumpur (Outline) The energy saving measures carried out by PWD were of the no cost and low cost with an investment of RM 30,000 for sub metering and posters. The payback period of 1.72 months results in saving RMs, 313,670. PWD has made a commitment to Public Services Department on saving electricity through no cost and low cost measures for selected existing buildings. The target range or Key Performance Indicator from the baseline was 10 % to 15 %.	**A. Non-Investment Project** (1) ESM-1 Shutting off AHU at the Cafeteria ***(2)ESM-2 Automatic PC Shut Down*** (3) Addressing Air Infiltration (4) Rescheduling of AC operation hours in Main Prayers Hall **B. Investment projects:** (1) Supply and installation of 6 digital Meters (2) Posters and Stickers	A. No-Investment Reduction from 5,799,750kWh to 5,229,442 kWh B. Investment Reduction from 203.5kWh/m2/y to 183.49kWh/m2/y	A. 9.84 % Saving B. Investment Payback 1.72 year	(1) RM 18,000 (2) RM 12,000	***They have implemented no-cost & low-cost energy conservation measures by the adoption of energy efficiency index management.***	1st Runner-Up
Philippines	Station Square East Commercial Corporation Number of employees: 384 : Annual Electric Consumption in 2009 : n.a.	Shopping Mall	(Name of Project) Market! Comprehensive Energy Management (Outline) Market! Market! System-wide strategies have been effective in cutting down the building's energy consumption. These energy efficiency strategies involve both traditional and the emergent technologies. Among the energy efficiency program implemented are: 1) Installation of VSD for AHU and water pumps 2)Use of LED fire exit light 3)Polarized refrigerant oil additives ,etc.	**Investment** (1) VSD for AHU (2) Use of LED exit light (3) Reactive Current Treatment (4) Installation of E-clean to Heat exchangers (5) Polarized Refrigerant Oil Additives (6) VSD for water pump	B. Investment (1) 264GWh/y (2) 4.8 GWh/y (3) 246 GWh/y (4) 26 GWh/y (5) 275 GWh/y (6) 96 GWh/y	(1)Payback 1.7 years (2) 3 year s (3)2 years (4) 2 years (5) 2 years (6) 2 years	(1)46,700US$ (2)3808US$ (3)74,900US$ (4)6,521US$ (5) 84,000US$ (6) 22,000US$	***(1) As the shopping complex includes various tenants, many type of stores (cinemas, supermarket, office, etc.), it is important to obtain their cooperation in Energy Conservation. And they experienced much staff participation and their upgrading knowledge. These would be applicable for other buildings. (2) They obtained sustainable activities and implementing organization. (3) No-investment measures are also important.***	Winner

Table IV-2-1: Analysis of Applications (2) (Large-scale Buildings-2)

Country	Name of Company (Outline of Company)	Category	Name of Project / Activity	Key Improvements	Annual Effect		Investment	Possibility to Disseminate	Status
					Saved Energy	Economy			
Vietnam	Ocean Park Building Number of employees: 1247 : Annual Electric in 2009 :3915MW/h;	Office	(Name of Project) Energy efficiency consumption, increase business efficiency. We are committed to sharing the responsibility with the community . (Outline) Ocean Park Tower is a big load of Hanoi Electricity company. They have backup generator for power failures. By studying data, they have an overview of the use of unit's electricity. Energy consumption changed dramatically over each month, the months of use most energy are in the summer. The purpose of energy management activities in the building is to reduce the consumption to the maximum extent while ensuring energy demand necessary of business operations. Specific objectives are advocacy, raising awareness of staff in energy conservation. On the other hand, constantly learning, searching for new technical solutions to reduce energy consumption of the devices.	A. Non-investment (1) Install time, temperature and operating automatic programs daily, weekly, seasonal for Air condition system (2) Regular maintenance for Air conditioning units (3) Control devices used at peak power (4) Controller working mode of the elevator in accordance with the working conditions B. Investment (1) Install BMS system to control the central air conditioning (2) Dividing lighting plot, turn off turn on the light in accordance with working conditions (3) Replace lighting with energy saving devices (4) Paste the insulating film for the windows	A. No-Investment Project (1) 76MWh/y (2) 96Mwh/y (3)36MWh/y (4) 3MWh/y B. Investment (1) 152MWh/y (2) 49MWh/y (3) 150MWh/y (4) 156MWh/y	(1) Payout 4.5years (2) 3.1years (3) 1.6 years (4) 0	(1)700 Million VN dong (2) 150Million VN dong (3)250 Million VN dong (4) -	***They implemented energy conservation by the measures of BMS data, lighting management, improvement of air conditioning , reduction of number of elevators. These measures will be applicable for other buildings.***	2nd Runner-Up
Thailand	Prakanorn Sri Ayutthaya Hospital Number of employees:1498 Annual Energy use 2009;29,000GJ/y	Hospital	(Name of Project) Comprehensive Energy Management for Building (Outline) Through the vision of the hospital director and hospital lead team, the Energy Conservation Committee (ECC) was to manage energy conservation in the hospital. With active ECC team, energy specialists and engineer consultants, member of energy saving and employees serve as operating team to drive the "ready to give" organization with of the CEOs' support which led them to energy efficiency index reduce 18.8 % was brought about 3 factors including people ware, hard ware and system ware.	A. Non-Investment (1) Reduce Number of bulb B. Investment (1) Install pull switch (2) Operation load management of Split-type air conditioners (3) Install VSD boiler burner	A.(1) 167,900kWh/y B. Investment (1)13,800 kWh/y (2)207 000kWh/y (3)2760kWh/y	B. (1)0.67 year (2)0.30 year (3)2.11 year	(1) 6000 Baht (2) 215,500 Baht (3)20,000 Baht	***Energy conservation activities have been achieved by all participation, raising awareness of importance of EE&C.***	Winner

Table IV-2-1: Analysis of Applications (2) (Large-scale Buildings-3)

Country	Name of Company (Outline of Company)	Category	Name of Project / Activity	Key Improvements	Annual Effect		Investment	Possibility to Disseminate	Status
					Saved Energy	Economy			
Thailand	Pyathai Sriracha General Hospital Number of employees:1000 : Annual Electric Consumption in 2008 : 26,200GJ/y;	Hospital	(Name of Project) Energy Conservation Campaign at Pyathai Sriracha General Hospital (Outline) The energy conservation campaign has been introduced and practiced by the staff in all levels, where the management has recognized the importance of the energy conservation and management. By applied the proper technology, replaced two of the out of date chillers with the high efficiency chillers, used the concept of "air to air heat exchange, replaced the halogen light with LED light, and install the software (Energy Management system and Chiller Management Software) to manage the energy use in every part of facility". A results, energy efficiency index reduced 39%. To achieve best energy management , they have adopted concept " the people ware, hard ware and system ware."	**A. Non-investment(2009)**: ***(1)Adjust operating time for kitchen air conditioner*** ***(2) Switch off unnecessary light at entry area after 9pm*** **B. Investment** (1)Separate control switch for the 2nd floor (2) Replace lamp for parking area (3) Install timer switch for dish washer exhaust hood (4) Install pull switch for the 4th floor (5) Install controller for FCU of patient room on 11th and 12th floor	A. Non-Investment (1) 61,900kWh/y (2) 12,000 kWh/y B. Investment (1) 11,000kWh/y (2) 9180kWh/y (3)8760 kWh/y (4) 3310 kWh/y (5)26,500 kWh/y	(1) Payout 0.02 year (2) Payout 1.42 years (3) 0.02 year (4) 0.1 year (5) 0.35 year	(1) THB 549 (2) THB 39,000 (3)THB 642 (4)THB 1000 (5)THB 27,500	***By the effective investment and active leadership of top management, big energy conservation has been achieved. These methodology will be applicable for other hospitals.***	Winner

Table IV-2-1: Analysis of Applications (2) (Small to Medium-scale Buildings-1)

Country	Name of Company (Outline of Company)	Category	Name of Project / Activity	Key Improvements	Annual Effect		Investment	Possibility to Disseminate	Status
					Saved Energy	Economy			
Thailand	Somdej Prasongkarach XVII Hospital Number of employees: 623 : Annual Energy use in 2009 : 8035GJ/y;	Hospital	(Name of Project) Energy Management (Outline) All staff started to implement "Low Carbon Traditional Project". Then they established the policies(1) People Ware (Team work in small group) (2) Hard Ware(Minimum energy loss) (3) System Ware (Energy Saving Committee). As results, even though the increase of patients, energy consumption of the hospital has been stable in the past three years. It means energy reduction achieve by 38%. They try to disseminate these measures to other hospitals and governmental buildings.	A. Non-Investment Project (1) Boiler pressure reducing from 7Bar to 3.5Bar (2) Removal of starter for unused fluorescent (3) Turn off fluorescent at lunch time (4) Reduce the use of air conditioner B. Investment Project (1) Using high efficiency air conditioner (2) Preventive maintenance program for air conditioner (3) Reduce service time of pump and aerator (4) reduce length of water pipe	A. No-Investment Project (1) 12,000L diesel/y (344,000Baht/y) (2) 21,000kWh/y (68,200Baht/y) (3) 6,400kWh/y (21,000 baht/y) (4) 144,500kWh/y (462,000Baht/y) B. Investment (1) 78,000kWh/y (392,500Baht/y) (2) 225,00kWh/y (96,400 Baht/y) (3) 5785kWh/y (19,000Baht/y) (4) 556kWh/y (2000Baht/y)	B. Investment (1) Payback 1.5 year (2) Payback 0.07 year (3) Payback 0.13 year (4) Payback 4.1year	(1)393,000 Baht (2) 27,000 Baht (3) 2,400 Baht (4) 8,000 Baht	***(1) As the Hospital has implemented the EM Project based on 3 categories, People Ware, Hard ware and System Ware. The methodology would be applied for other hospitals and buildings.*** ***(2) Hospital's energy management has been implemented by all participation and effective/ small investment.*** ***(3) Various projects used in the hospital were very common and will be utilized in other hospitals.***	Winner
Indonesia	Sedona Manado Resort Hotel Number of employees: 150 : Annual Electric Consumption in 2009 : 3,650,000kWh/y;	Hotel	(Name of Project) Energy and Green Management Practices to serve the Environment (Outline) The consumed energy could be reduced from 357kWh/month in 2008 to 302kWh/month in 2009 (reduction by 15%).They implement various activities on the establishment of the energy committee, capacity building including educational training.	A. Non-Investment (1) Reschedule of Sewage treatment Plant (STP); Avoiding peak time. (2)Adjustment Laundry operation time (3) Reschedule of Exhaust Fan for Guest room (4) Reschedule operation of Laundry Exhaust Fan (5) Lowering hot water supply temperature from 60 deg to 50 deg. (6) Lowering water supply pressure to 3.5bar to 2.5 bar. B. Investment (1) Replacement of key tag (2) Replacement of incandescent lamp to fluorescent lamp	Non-Investment (1) 6800US$/y (2)100L/d Diesel(27,400US$/y) (3)75,000kWh/y(6801US$/y) (4)75kwh/d(12,400US$/y) B. Investment (1) 114kWh/d(3710US$/Y) (2) 18,5000US$/y	B. Investment (1) Payback 1 year (2) Payback 1 year	(1)3578US$ (2) 1000US$	***(1) House-keeping energy saving measures will be applicable for other hotels (resort hotels).***	1st Runner-Up

Table IV-2-2 APPLICABLE ENERGY CONSERVATION TECHNOLOGIES
(From Entry Form for ASEAN Awarding System 2009-2010)

Investment Category	Typical Measures	Field to be applicable		Remarks (Applied by)
		Industry	Building	
A. Non-Investment	1) Improvement Operation Conditions			
(Housekeeping)	a) Steam ,Air Leak & Water Leak Prevention/Repair	○	○	***Sriracha Hospital***
	b) Reduction of blow down	○		TCRSS, Grand Mercure
	c) Operating Condition Adjustment	○	○	
	(Chiller operating hours,AHU, Kichen,Laundry)	○	○	***Station Square, Public Works***
				Sedona Manado Hotel
	2) Lowering of Utility Conditions (Possible Research)			
	a) Lowering Steam Supply Pressure	○	○	***(Somedejprasongkharach Hospital)***
	b) Lowering Air Pressure	○		
	3) Shortening of operation time in Air conditioner	○	○	Grand Mercure
	4) Turning off & Reduction for Lighting, using sunlight	○	○	Many Applicants
	Pull down switch (Improving Lighting System)			***(Turn-off PC/ Public Works Dept.)***
	(Turn off Unnecessary Lighting)	○	○	
	5) Demand Side Management (Load Management)	○	○	
	6) Setting standard of Room temp.& proper control of fresh air and Preparation Manual	○	○	***Many Buildings, Public works Dept.***
	7) Auto Stop Line Conveyor	○		***TGCI***
B. Low Investment	1) Improvement of Lighting system			
(<0.05 Million $)	a) Changing high efficiency lights, Film & Blind shading	○	○	Many Building (OGDC, Majestic H.)
	b) Install Electric Ballast	○	○	
	c) Install LCD	○	○	Majestic
	2) Reduce Heat loss (Insulation)			
	a) Change insulator of Boiler	○	○	Grand Mercure
	b) Reduce of Heat Loss at Kiln			Thai Ceramic
	3) Installation Sub-meter system	○	○	OGDC
	4) Heat Recovery from waste water	○	○	TCRSS
	5) Auto Senor in elevator		○	***Ocean Park Building***
	6) Replace electric water heater to Solar energy heater		○	***Fame***
	7) Installation BMS		○	***Ocean Park Building***
C. Medium Investment	1) Installation Variable Speed Drivers	○	○	Many industries and buildings
		○	○	(Grand Mercure, Thai Ceramic (TCC),
	a) VSD in AFU Fan			Greenhill, Majestic,
	b) VSD in Chilled Water Pump& Cooling Water Pump	○	○	Keppel Land)
	c) VSD in Ventilation in Basement	○	○	
	2) High Eff. Burner	○		Thai Ceramic(TCC)
	3) Roof Insulation	○	○	Greenhill
(0.05~1.5 Million $)				
	4) Installation High Efficiency Motor	○	○	PT Eastern Pearl Flour
	5) Install Capacitator	○	○	
	& Power Factor Correction with Capacitator	○		***Station Square***
	6) Rice Husk or Biomass Feeding into Boiler or Kiln	○		***Tonasa Semen***
	7) Less Energy Material Transportation	○		PT Eastern Pearl Flour
	8) Solar & Wind Energy Usage	○	○	***Fame***
D. High Investment	1) Changing of Fuel for Boiler/Furnace	○		***Fame, PT Semen Tonasa***
(>1.5Million $)	a) Change Heavy Fuel Oil or Diesel to LPG Boiler	○	○	***Sri Ayutthaya Hospital***
	2) Furnace on Line Cleaning	○		
	3) Cooling Tower Cleaning System	○	○	Greenhill
	4) Self Generation	○	○	***Tonasa Cement***
	5) Plant Chiller upgrading	○		Mead Johnson
	6) Insulated windows	○	○	Majestic H.
	7) Adsorption Chiller	○	○	Mangga

Table IV-2-3 ENERGY MANAGEMENT ACTIVITIES
(From Entry Form for ASEAN Awarding System 2009-2010)

Activities Category	Typical Activities	Field to be applicable		Remarks(Applied by)
		Industry	Building	
A. Company Policy				
	1)3R's Principles(Reduce, Reuse/Recycle and Replenishment)	○	○	TCC, Sofitel (gabage recycle), Grand Mercure
	2) Company policy on efficient, economic and environmentally responsible, Application latest and best technologies	○	○	TCC
	3) Reduction of Energy consumption	○	○	***Epson Philippines***
	4) Environmental Protection	○	○	***Epson Philippines***
				Sofitel
	5) Energy and Material Reduction	○		
	6) To be ASEAN Leader	○	○	TCRSS
	7) Eliminate dependency of fossil fuel(Renewable Energy)	○	○	***Fame , PT Tonasa Semen***
	8) Cost Leadership, Cost competitiveness	○	○	PT Eastern Pearl Flour,TCRSS
	9) Safety & Environment	○	○	***PT. Tonasa***
	10) Energy and Cost reduction	○	○	***Epson Philippines***
	11) People Development	○	○	
	12) Be innovative, creative, good team player	○	○	TCC
	13) Quality, Occupational Health and Environmental	○	○	***PT. Tonasa***
	14) 3S (Save energy, save earth and save cost)	○	○	PT.Eastern
	15) Green Banking , Green Hotel		○	Brunei HSBC, Majestic
	16) Search for latest and best technology	○	○	Greenhill
	17) Challenge & Kaizen	○	○	***Epson Philippines***
	18) people ware. Hard ware System ware	○	○	***SrirachaHospital, Sri Ayuttaya Hospital***
	19) Think before Use	○	○	***Sri Ayuttaya Hospital***
	20) Optimize plant efficiency, Improvement of Energy efficiency	○	○	***Brunei LNG, Dolefil's***
B. Organization	***1) Energy Conservation Committee/Energy Efficiency Team***	○	○	***All applicants***
		○	○	
	2) Small Group Activity/All Participation & 5S activities	○	○	***PT. Tonasa Semen,Sri Ayuttaya Hospital, Ha Noi Textile***
				Gas separation Thailand,
				Somedejprasongkharach hospital
	3) Company's Awarding System	○	○	***GSP, Sri Ayutthaya Hospitl Sedona Manado Hotel***
	4) Energy Information center	○	○	
	5) Human development Program	○	○	Many Applicants
	6) Awareness campaign, Long term learning system			
	7) Information Sharing	○	○	TCRSS
C.Standard/Manua	***1) PDCA cycle and keeping standardization***	○	○	***Sedona Manado Hotel, Gas Separation Thailand***
	2) TQM, Preventive Maintenance(PM), Kaizen	○	○	***PT Semen Tonasa, GSP,***
				Somedejprasongkharach Hospital
	3) Set standard of Room Temp.	○	○	OGDC, AGC
	4) QCC Activity	○	○	TCRSS
	5) Sustainable Development Guidelines	○	○	TCC
D. Training	***1) Educational Training (Internal& External training)***	○	○	***All Applicants***
				External Training (Sriracha General Hospital)
	(EC Education for Emplyees)	○	○	Grand Mercure,TCRSS, HSBC
	2) Chief Engineers Meeting	○	○	Keppel Land
	3) Campaign, Brochure ,Sticker	○	○	TCRSS, TCC, Grand Mercure
	4) Training & workshop on EE	○	○	***PT. Semen Tonasa, GSP, Ha Noi Textile***
				Ocean Park Building, Sri racha hospital
D. Others	1) Suggestion Box	○	○	
	2) Energy Information Board/ Center	○	○	***Ha Noi Textile, Sri Ayutthaya Hospital***
	3) Energy Exhibition	○	○	***Sri Ayutthaya Hospital***
	4) Visiting Other Organizations(Study Visit)	○	○	***Sri Ayutthaya Hospital***
	5) Hiring External Consultants	○	○	
	6) Cooperation with ESCO	○	○	Greenhill(130,000US$)

IV-2-2. Analysis of Information Provision Method to Disseminate Best Practices of Energy Management

Award-winning practices are introduced on the website of the ASEAN Centre for Energy.
In addition, the best practices were used as case study at Seminar-Workshops and training on the Energy Management Handbooks in each country. This deepens understanding toward energy management, including analysis of the contents. Although the number of target people is small, this method is highly effective. Particularly, case studies combining the award-winning practices and others left out in the final selection are effective.
ECCJ proposed a new category to gather and commend single cases or projects for improvement, which was put into practice first in fiscal year 2010.

IV-2-3. Points to be Improved and the Latest Plan

Based on the opinions of the members of the evaluation committee at the fourth award that successfully ended in June, analysis of the award-winning best practices in Japan and the reports on the promotion and implementation of award in each country, discussion was made on the improvement aiming for operating this award system more effectively, including the revision of the evaluation guidelines. As a result, quality of the applications in the fourth award was improved. However, the followings were decided for the purpose of promoting collection and dissemination of good practices.

(1) Expand opportunities for small & medium sized enterprises
Classify the companies into two by energy consumption: those consuming a lot of energy and those consuming less. Operation has begun in fiscal year 2010. The standard has been revised upward in response to the discussion to revise the standard for the Major Industries section.

(2) Partial revision of a new category to give awards to single cases of improvement

In response to a proposal by the ECCJ, a new category to give awards to single cases of improvement was set up. Judges are given just two options: yes or no to each application, but the number of applications was just three in the Industries section. In November 2010, partial revision of the definition was discussed and adopted in the Research Forum in Japan. The revised application guidelines were distributed to the BOJ members and the Focal Point of each country. Also it was released on the ASEAN Centre for Energy's website.
As in the previous year, the fifth awarding is scheduled as follows:

(1) Application deadline
(By country) Late April 2011 (schedule to be determined by the country)
(ASEAN) May 12, 2011 (to be submitted to the ACE)
(2) Select ASEAN winners Early June 2011 (organized by BOJ-EM)
(3) Official announcement and the awarding ceremony
July 2011 (AMEM-ASEAN Minister of Energy Meeting)
(4) Announcement of the winners Around September 2011

IV-3. Establish a System to Utilize Existing Implementing Organizations (Online Energy Information System**)**

IV-3-1. Progress and Challenges of the System Establishment

This year, the designed system has been improved to encourage registration of the implementing organizations, but there has been no registration of the customers and the system is not in trial operation.

This information system aims at providing access for the clients in ASEAN that need services such as energy audits or training to directly contact the providers of such services in the ASEAN. Specifically, this system has following functions:

(1) Information database of the clients

Stores information that the client needs,, including the content, scope, basic specifications and conditions of the service, along with the client's corporate outline. However, in the discussion these contents were considered unnecessary.

(2) Information database of the existing implementing organizations

Stores registered information, including the content, scope, basic specifications and conditions of the service that an existing implementing organization provides, together with the outline of the implementing organization.

(3) Search system between the customers and the implementing organizations (Online Energy Information System)

Searches and presents matching results between clients and the implementing organizations by comparing information of the clients and the implementing organizations. If the conditions of the two match or almost match, they can access mutually to the detailed information.

Clients and implementing organizations, after gaining necessary information using this system, directly contact each other to negotiate on detailed conditions, and proceed to contract matters. Provision of information and services for the individual negotiations is not handled by this system.

Off- line registration and search system and display screens have been prepared, now ready for test operation. Focal Point in each country is currently advancing registration process after re-confirmation with local implementing organizations.

Initial registration process is taking longer than expected, causing a delay in the initial plan.

IV-3-2. Latest Plan

It took time to consider the problems stated above and the registration process has been time-consuming. In fiscal year 2010, number of registered implementing organizations increased marginally, making it unable to start trial operation.

As the registration of the clients is considered unnecessary, we requested at the Post Workshop to the Focal Points of each country to increase the number of implementing organizations, attract clients' attention and facilitate contact to the implementing organization. Moreover, we requested the Focal Points to approach prospective clients on a trial basis. After a discussion of its title, it was changed to the "ASEAN Energy Management Service "starting next year.

IV-4. Developing Energy Management Tools

The Energy Management System has entered the Step-2 in fiscal year 2010. Relevant tools, including Energy Management Handbook, In-house Database, Technical Directory for industries and buildings and other technical handbooks are for achieving the most effective method of energy management. The entire plan and problems are shown in Table IV-1-1 (p.IV-3). Description of each item will follow:

IV-4-1. Dissemination of the Energy Management Handbook

The final version of the ASEAN Energy Management Handbook (English) was prepared and released on the website of the ECCJ and ACE, for download. It is introduced at various seminars and workshops for dissemination. We proposed translation of the handbook in local languages in countries that need this handbook, but it shows little progress due to the budget issue.

1. Translation into local languages and publishing

In Vietnam, the handbook has been translated into the local language with the cooperation of pioneer companies, but it takes time for publishing regarding budget processing by the government authorities. However, at the Summary Workshop, there was a report that it has been printed and published. We will check the progress of it.

Among the countries visited this fiscal year, there were requests from Cambodia, Myanmar and Indonesia for translation. Vietnam also requested support for printing and publishing. From Lao PDR, not included in the country of visit, there was a request for support to publish more of it.

IV-4-2. Dissemination of In-house Database and Technical Directory (Industries and Buildings)

1. Dissemination of In-house Database (industries and buildings)

In-house Database (IHDB) was introduced at the Intensive Seminar-Workshop held in five countries this year.

The PROMEED Major Industries Team insisted to use the IHDB at the energy conservation analysis on OJT. Our Energy Management Team will promote the use of it as one of effective energy management tools.

2. Dissemination of Technical Directory (industries and buildings)

Collected information so far is being organized by ACE under the instruction of ECCJ experts. At present there are 149 in the Industries and 66 in the Buildings.

To make the function more effective and disseminate technologies related to the award-winning case studies in ASEAN, the Industries Team will make improvements jointly with the ACE:

(1) Basic policy on TD

TD is a system to gather and use technical items gained through the PROMEEC Projects as a directory, not aiming at constructing a technical database.

(2) Data Source

Award-winning cases in 1) Energy Efficiency Building; and 2) Energy Management/ Best Practices Building & Industries of the ASEAN Energy Awards will be the base of Technical Database.

(3) System to be used

TD and Awards website will be linked to allow direct access to the documents on the Awards webiste from TD, to introduce the award-winning cases to the users.

IV-4-3. Preparing Technical Handbooks

Energy management handbooks present action guidelines for practicing and administration of the energy management. Handbooks providing technical improvement guidelines on technologies will be of help to offer energy management guidelines to promote integrated energy conservation activities.

At present there has been a project between Japan and Thailand and the English translation of the Thermal Energy Efficiency Improvement Handbook has been finalized. Also, the English version of the Electrical Energy Efficiency Improvement Handbook will be completed soon. These were discussed at this year's Intensive Seminar-Workshop. We will make further efforts to finalize these, while gathering other handbooks and manuals on energy management and energy conservation and upload it on the ACE website so that they will be used in common as reference.

IV-5. Considering Establishment of Other Information Systems

As previously pointed out, providing information on ESCO and companies offering energy conservation technologies and equipment will be effective for companies and persons in charge in the ASEAN region to promote energy conservation, in addition to the use of tools and information described earlier. In this Project the followings will be prepared. Specific company names and others that own energy conservation facilities and technologies will be gathered and organized. We requested cooperation on it at the Summary and the Post Workshop.

(1) ESCO Directory

(2) Directory of companies offering energy conservation technologies and equipment

This fiscal year, website to access to the JASE-World technical directory regarding major energy conservation technologies of Japan was introduced on various occasions.

We plan to create a format for FP to provide relevant information. The format will be sent from ACE and gathered information will be organized by the end of the next fiscal year.

V. Discussion Result at the Summary Workshop

On February 16 and 17, 2011, the Summary and Post Workshop was held in Bangkok, Thailand, to share information and discuss among Focal Points of 10 ASEAN countries in the ASEAN. The participants confirmed and evaluated results of three projects and consulted on the future plan. At the Summary Workshop, participants discussed the evaluation and achievements of energy management projects and the basic plan for fiscal year 2011 and onward. Program of the Summary and Post Workshop is shown in the Attachment Material V-1-1.

V-1. Summary of the Results of the Projects and Achievements for Fiscal Year 2010

As in the previous year, there were various activities of energy management. Preparation of the tools and systems made a steady progress. Award System for the best practices of energy management was carried out without any problems. As a result, the Step-1 System of the ASEAN Energy Management System was almost completed and operations have started.
Activities to establish the Step-2 System started smoothly. Part of Step-2 System has already started. Followings are the results and achievements of the projects of this fiscal year:

1. While disseminating the programs and tools of the ASEAN Energy Management System (AEMS) through Intensive Seminar-Workshop (ISW), Training to use the Energy Management Handbook and Visits to factories and buildings in five countries in ASEAN was implemented, while expanding the network of cooperating companies and organizations. In Brunei Darussalam, we confirmed that the foundations for self-sustainability has being developed, as the training is given by the local instructor using the handbook written in the local language, as in the previous year. In Vietnam, we did not recognize the EMHB written in the local language, but the participant reported that they have a plan to disseminate it. Also, there were requests for support in translation of the handbook and publishing from Cambodia, Laos and Myanmar.

2. Step-1 System of ASEAN Energy Management System with basic functions and relevant programs and tools has almost been completed.

1) Award system for the collection and dissemination of the best practices of energy management was smoothly implemented. At a workshop in Japan, following guidelines for further improvement were discussed and developed, based on the discussion of the BOJ.
   - Factories and buildings were classified into two categories (large or small & medium) depending on the amount of energy consumption. As for industries, the standard value was revised to 30 Million MJ/Y from present 10 Million MJ/Y.
   - "Significant innovation" in the definition of the Special Submission category has been reworded to "innovation/best practices/excellent cases".
2) A trial operation of the Online Energy Information System, which is a search system for the existing implementing organizations and clients, is being preparing. Registration of 17 implementing organizations has been completed, and they are waiting for the registration of clients. As the trial operation is not proceeding smoothly, registration of the implementing organizations were encouraged while registration of the clients were passed over, which was considered unnecessary. After that, we asked parties concerned in each country to implement trial operation. Again at the Summary Workshop there was a discussion to change the name to the "**ASEAN Energy Management Service**", which was adopted.
3) It was determined to lessen priority of the establishment of functions and programs of the STEP-2 System. It will be implemented when the progress of the Step-1 System will be confirmed.

3. Expand a network of cooperators through local activities. Intensive Seminar-Workshop had about 1,132 participants since fiscal year 2006 while about 533 people attended training since fiscal year 2007. A team of experts visited a total of about 117 companies and organizations since fiscal year 2004, to expand the network through instruction, including the dissemination of achievements in energy management.

4. Key points for improvement

- Encourage applications to the award system
- Prepare for the test operation of the Online Energy Information System (ASEAN Energy Management Service)

Attachment Material V-1-1: Summary and Post Workshop Program



AGENDA

SUMMARY AND POST WORKSHOP

PROMOTION OF ENERGY EFFICIENCY AND CONSERVATION (PROMEEC)

(MAJOR INDUSTRY, BUILDING AND ENERGY MANAGEMENT)

SOME-METI WORK PROGRAMME 2010-2011

16-17 February 2011, The Twin Towers Hotel, Bangkok, Thailand

Day 1: 16 February 2011

08:00	-	08:30	REGISTRATION
08:30	-	09:15	Opening Session
08:30	-	08:35	- Statement from the Host Country
08:35	-	08:40	- Opening Statement from EE&C-SSN Coordinator
08:40	-	08:45	- Opening Statement from ACE
08:45	-	08:50	- Opening Speech by ECCJ
08:50	-	09:15	Election of Co-Chairs & Rapporteur, Adoption of the Agenda & Photo Session
			SUMMARY WORKSHOP
09:15	-	09:25	Activities on EE&C Recently Developed under APAEC 2010-2015 (ACE)
09:25	-	09:40	Basic Direction and Key Points for Evaluation toward Phase – 3 (ECCJ)
SESSION 1			PROMEEC – MAJOR INDUSTRY
09:40	-	10:25	1. Evaluation of Local Activities by Focal Points - Expectation and Actual Results and Achievements - Points to be Improved and Achievements to be Shared with Other Countries
09:40	-	09:55	Presentation by Cambodia
09:55	-	10:10	Presentation by Lao PDR
10:10	-	10:25	Presentation by Thailand
10:25	-	10:40	Coffee Break
10:40	-	11:00	2. Status and Evaluation of Progress in Preparation of Technical Directory and Development of In-house Database by ACE

11:00	-	11:30	3. Summary and Evaluation of Activities (ECCJ) - Results : Main Activities in Cambodia / Lao PDR / Thailand - Evaluation of Achievements and Results of Local OJT Activities
			- Evaluation of Progress in Improving Technical Directory and Developing In-house Database including Dissemination - Overall Evaluation and Required Improvements toward Phase-3
11:30	-	11:50	4. Proposed Plan for 2011– 2012 : Explanation & Discussion (ECCJ)
11:50	-	12:30	Q & A and Overall Discussion
12:30	-	14:00	Lunch
SESSION 2			PROMEEC – BUILDING
14:00	-	15:00	1. Evaluation of Local Activities by Focal Points - Expectation and Actual Results and Achievements - Points to be Improved and Achievements to be Shared with Other Countries
14:00	-	14:15	Presentation by Brunei Darussalam
14:15	-	14:30	Presentation by Indonesia
14:30	-	14:45	Presentation by Philippines
14:45	-	15:00	Presentation by Thailand
15:00	-	15:15	2. Status and Evaluation of Progress in Preparation of Technical Directory and Dissemination of In-house Database by ACE
15:15	-	15:45	3. Summary and Evaluation of Activities (ECCJ) - Results : Main Activities in Brunei Darussalam / Indonesia / Philippines / Thailand - Evaluation of Achievements / Results of Local OJT Activities - Evaluation of Progress in Improving Technical Directory and In-house Database including Dissemination - Overall Evaluation and Required Improvements toward Phase-3
15:45	-	16:00	Coffee Break
16:00	-	16:20	4. Proposed Plan for 2011– 2012 : Explanation & Discussion (ECCJ)
16:20	-	16:45	Q & A and Overall Discussion
			END of Session for Day 1
18:30			Reception Dinner

Day 2 : 17 February 2011

SESSION 3			PROMEEC – Energy Management
09:00	-	10:15	1. Evaluation of Local Activities by Focal Points - Expectation and Actual Results and Achievements - Points to be Improved and Achievements to be Shared with Other Countries
09:00	-	09:15	Presentation by Brunei Darussalam
09:15	-	09:30	Presentation by Cambodia
09:30	-	09:45	Presentation by Indonesia
09:45	-	10:00	Presentation by Myanmar
10:00	-	10:15	Presentation by Vietnam
10:15	-	10:30	2. Status and Evaluation of Progress in Award System for E.M. / Preparation of ASEAN E.M. System (Step-2) / Online Energy Information System for Implementing Organizations – Customer by ACE
10:30	-	10:45	Coffee Break
10:45	-	11:15	3. Summary and Evaluation of Activities (ECCJ) - Results : Main Activities in 5 Countries and "Research Forum in Japan" - Evaluation of Achievements and Results of Local Activities - Evaluation of Progress in Preparation of Programs and Systems to Establish "ASEAN Energy Management System" - Overall Evaluation and Required Improvements toward Phase -3
11:15	-	11:45	4. Proposed Plan for 2011 – 2012 : Explanation & Discussion (ECCJ)
11:45	-	12:15	Q&A and Overall Discussion
12:15	-	13:30	Lunch
			POST-WORKSHOP
13:30	-	14:30	Summary : Overall Evaluation of Achievements and Basic Direction of Future Activities Toward Phase – 3 (ECCJ)
14:30	-	15:00	Confirmation of Future Plan including Basic Plan for 2011 – 2012 (ECCJ)
15:00	-	15:15	Coffee Break
15:15	-	15:45	PROMEEC-Major Industries
15:45	-	16:15	PROMEEC-Buildings
16:15	-	16:45	PROMEEC-Energy Management
16:45	-	17:00	Closing Statements by 1. Chairperson of EE&C-SSN

			2. ECCJ 3. ACE 4. Representative of Host Country
End of Meeting			

V-2. Latest Plan of the ASEAN Energy Management System based on the Results of Implementation

The Step-1 System has almost been completed except for the Online Energy Information System according to the plan, and the operation began. Additional functions to be included in the Step-2 System and programs and tools for the Step-1/Step-2 Systems have been discussed.

After that, development plan for the Step-2 System was newly created, including continuous improvement of Step-1 System.

To operate the ASEAN Energy Management System in a stable and sustainable way, systematic infrastructure for the maintenance and expansion of the system will be necessary.

This plan is described in Fig. V-2-1 below:

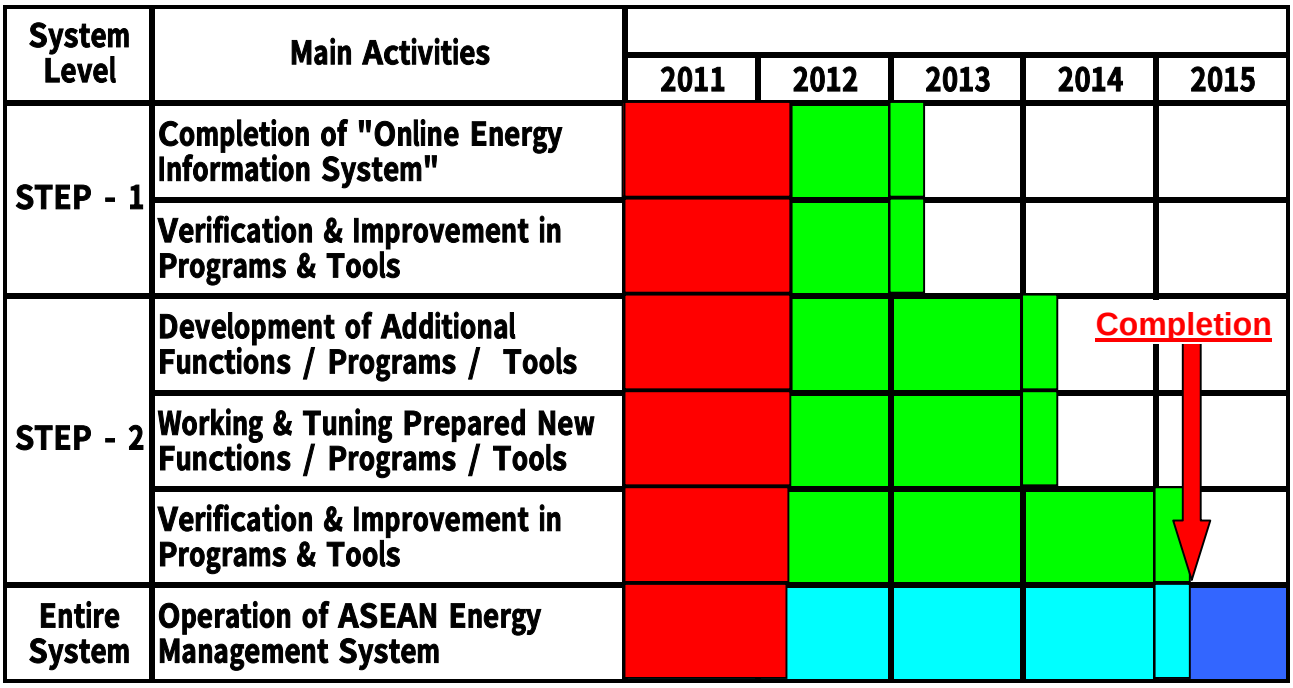


Fig. V-2-1: ASEAN Energy Management System Establishment Program

At the same time, network of relevant organizations, corporations and people in ASEAN, who are the users and cooperators of this system, should be established and operated.

In the Phase-3 of the PROMEEC project, ASEAN Energy Management System should function well and be used as an effective tool to build a foundation to implement and disseminate this system, based on the voluntary efforts of the ASEAN. The following actions will be implemented based on the above concept. The items 1 and 2 are for the improvement of the Step-1 System, while the item 3 is for the establishment and preparation of the Step-2 System.

1. Improving Functions and Programs Currently in Operation

(1) A system to collect and disseminate best practices in energy management

By improving operation of the ASEAN Award System of Best Practices in Energy Management for Industries and Building, whose policies having been fixed at a workshop in Japan, it will be possible to collect better practices of energy management. At the same time, an environment that allows all 10 countries to actively apply for the award has been developed.

1) Follow-up for the review of award categories

- Classify the factories and buildings into two depending on the energy consumption volume (large or small and medium)
- Award single improvement cases as well as existing awards for factories and buildings cases.

2) Review standard values and the definitions.

2. Complete and Start Operation of Functions and Programs being Established

(1) Establish and disseminate basic tools of energy management

Continue one-day training on how to use basic tools of energy management including the finalized Energy Management Handbook, In-house Database and Technical Directory.

(2) Increase the number of registration of the implementing organizations and speed up trial operation and verification of the Online Energy Information System for clients and implementing organizations for the purpose of utilizing existing implementing organizations for energy analysis and training.

3. Newly Established and Constructed Functions and Programs

(1) Develop and introduce new tools

Complementary handbooks on technical aspects will be prepared for the basic tools of energy management listed above. Specifically, they are Thermal Energy Efficiency Improvement (TEEI) Handbook and Electrical Energy Efficiency Improvement (EEH) Handbook, prepared with the cooperation based on the Green Partnership Program (GPP) policy dialogue between Thailand and Japan, and these will be translated in English for use in ASEAN nations.

The former has been completed and ready for download from ECCJ and ACE websites, but English translation of the latter has yet to be finalized. It will be completed by the end of this fiscal year.

(2) Prepare information provision system on energy conservation business (e-Directory)

To provide access to the companies offering energy conservation technologies and equipment, develop a directory to introduce ESCOs (Energy Service Companies) and enterprises that provide energy conservation technologies and equipment and contact persons. Establishment of an information system to use it as an e-Directory on the website of ASEAN Centre for Energy (ACE) will be discussed. Energy conservation technologies in Japan, summarized as JASE-World, were introduced together with its website. Discussion started to gather other similar information found in the ASEAN nations.

(3) Improvement of the ASEAN Energy Management System to enhance usability

(3)-1 “One Stop to System”

The system aims at improving accessibility to the necessary information for the users, but building the function will be time-consuming and costly. It will start when (1) and (2) above will show progress.

(3)-2 “Advisory Service”

When decision cannot be made by using the “One Stop to System” or further advice by experts is necessary, a function will be added to give advice to the users by experts, who voluntarily register in the system. But there are challenges such as registration of experts in the ASEAN. As with (3)-1 above, it will start when (1) and (2) above will show progress.

V-3. Policies for Future Actions and Basic Plan for 2011-2012

Marking the 12th year of the PROMEEC Project, necessary actions for Phase-3 have been confirmed for 2011-2012.

Phase-3 is a step to develop voluntary activities based on the past achievements. We shared the following three points as basic principles of the Phase-3:

1) Human resources development to promote energy conservation
2) Establish a system necessary for human resources development and prepare programs and tools for related activities
3) Build human and organizational networks in the ASEAN region

In addition, complementary cooperation among ASEAN nations will be necessary.

Based on these principles, actions for the next fiscal year and onward have been determined. These were explained and discussed at the Post Workshop, where consensus was achieved.

1. Further dissemination of the EMHB and training

2. More registration to the “ASEAN Energy Management Service” (former name: Online Energy Information System) and improvement of the service
3. Gather information for the e-Directory of energy conservation facilities and technologies in the ASEAN
4. Consider harmonization between the ISO 50001 and EMHB

Based on the above, the following activities will be implemented in the ASEAN region and Japan:

1. Actions for dissemination and establishment of the energy management system in up to five countries, in response to the proposal of each country

1) Intensive Seminar-Workshop
Introduction of the programs and tools of the ASEAN Energy Management System

2) Training
Training to utilize energy management tools, mainly on the EMHB (including workshop to establish the program for the basic course of energy management in each country)

3) Visits to factories and buildings for giving advice

4) Expansion of the Network of Cooperators through activities described above

2. The 6th Research Forum in Japan

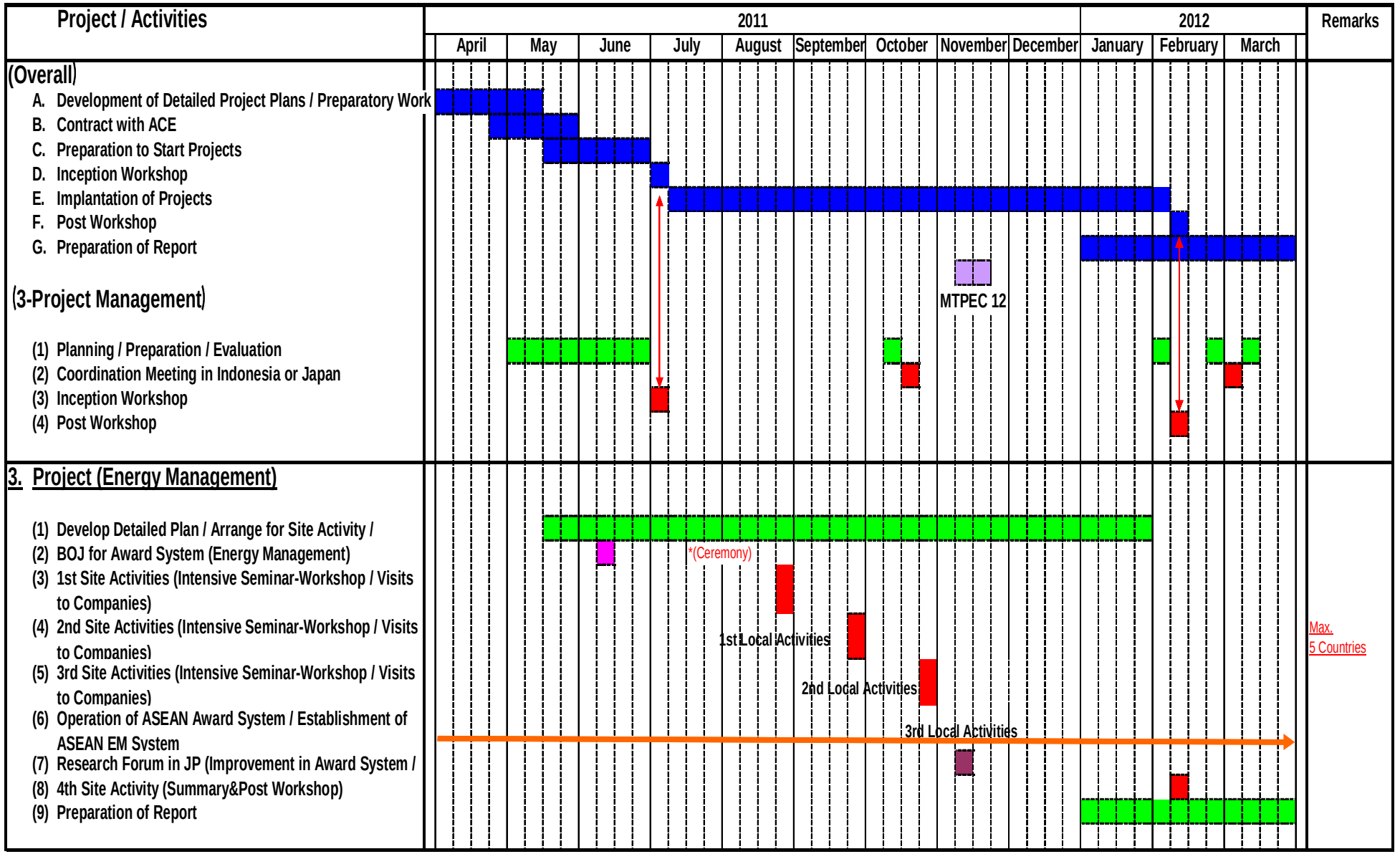
1) ASEAN Energy Management System：Analysis of the status of the STEP-1 and the policy to formulate the STEP-2 System

2) Review of the operation of the award system, based on the analysis and evaluation of the fifth round of the award

Project plan suggested by ECCJ and agreed is shown in Table V-3-1.

Lastly, it was agreed to utilize the PROMEEC Projects to continue contribution to the commercial development of energy conservation technologies and facilities of Japan.

Table V-3-1: Plan for the PROMEEC (Energy Management) Project 2011-2012



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