

Country Name	Establishment of Energy Management Training Center
Socialist Republic of Viet Nam	

I. Project Outline

Background	<p>In Viet Nam, the increase rate of energy consumption exceeded the economic growth rate. Meanwhile, the Vietnamese government implemented the Law on Energy Efficiency and Conservation in January 2011 in order to establish rules for energy conservation, including a system for energy management and a system for energy audit. Accordingly, the Ministry of Industry and Trade (MOIT) issued ministerial ordinances to provide rules for consideration of organizations and an appropriate training site, training and the qualification system needed for establishment of the Energy Management Training Center (EMTC) to develop human resources to train qualified persons for energy management and energy audit.</p> <p>*For implementation of the project, the project activities were divided into two stages. "The Project on Establishment of Energy Management Training Center (stage 1)" was implemented from September 2011 to September 2012 as the preparation stage, and the site of the EMTC was decided as Plastic-Rubber Technology and Energy Conservation Training Center (PRET) in Ho Chi Minh City (HCMC). Following the stage1, the stage 2 of the project (this project) started.</p>												
Objectives of the Project	<p>In Hanoi and HCMC, through developing of training courses for Energy Manager (EM) and Energy Auditor (EA), enabling counterparts (C/Ps) to implement practical training for EM and EA, and strengthening of C/Ps' capacity to disseminate energy conservation activities for enterprises, the project aimed at establishment and management of the Energy Management Training Center for training EM and EA, thereby enhancing energy management in designated enterprises under the Law on Energy Efficiency and Conservation.</p> <ol style="list-style-type: none"> Overall Goal: Under the Law on Energy Efficiency and Conservation, energy management in designated enterprises is enhanced. Project Purpose: The Energy Management Training Center is established and managed for training Energy Managers and Energy Auditors. 												
Activities of the Project	<ol style="list-style-type: none"> Project Site: Hanoi and Ho Chi Minh City (HCMC) Main Activities: <ol style="list-style-type: none"> Preparation of the curriculum, program and textbooks of practical training courses, Installation of training facilities and equipment, Establishment of an examination system and a qualification system of EM and EA, etc. Appointment of instructors of training courses of EM and EA to the EMTC, Implementation of practical training on operation and maintenance of the EMTC as well as energy conservation, Implementation of trial training courses for EM and EA, Implementation of trial energy audit in factories and buildings, etc. Implementation of workshops on energy conservation technology and regulations, Establishment of the network of MOIT and related organizations. Inputs (to carry out above activities) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Japanese Side</td> <td style="width: 50%; border: none;">Vietnamese Side</td> </tr> <tr> <td style="border: none;">1) Experts: 9 persons (short-term)</td> <td style="border: none;">1) Staff allocated: 8 persons</td> </tr> <tr> <td style="border: none;">2) Trainees received: 15 persons</td> <td style="border: none;">In addition, staff at local governments were engaged in the project.</td> </tr> <tr> <td style="border: none;">3) Equipment: Equipment for practical training, a power control system, a tool set, etc.</td> <td style="border: none;">2) Local expenses: Expenses for renovation of PRET¹ in HCMC</td> </tr> <tr> <td style="border: none;">4) Local expenses</td> <td style="border: none;"></td> </tr> </table> 			Japanese Side	Vietnamese Side	1) Experts: 9 persons (short-term)	1) Staff allocated: 8 persons	2) Trainees received: 15 persons	In addition, staff at local governments were engaged in the project.	3) Equipment: Equipment for practical training, a power control system, a tool set, etc.	2) Local expenses: Expenses for renovation of PRET ¹ in HCMC	4) Local expenses	
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Project Period	July 2013 – March 2016 (Extension period: January 2016 – March 2016)	Project Cost	(ex-ante) 300 million yen, (actual) 398 million yen										
Implementing Agency	Ministry of Industry and Trade (MOIT), Department of Industry and Trade under Ho Chi Minh City (DOIT-HCMC)												
Cooperation Agency in Japan	The Energy Conservation Center, Japan (ECCJ), Nippon Steel & Sumikin Management Co., Ltd. (NSSMC)												

II. Result of the Evaluation

1 Relevance
<p><Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion></p> <p>At the time of ex-ante evaluation, the Viet Nam Government implemented the Viet Nam Energy Efficiency Program (VNEEP: 2006-2015) to promote energy efficiency. At the time of project completion, the VNEEP (2016-2019) included solutions to improve legislative framework on energy efficiency and public awareness on energy efficiency and to develop and promote the use of equipment with less energy intensity, as well as solutions for energy efficiency in industrial enterprises, buildings and transport sector.</p>

¹ ETMC was managed by PRET and its trainers include PRET staff and outside resources assigned by PRET.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion>

At the time of ex-ante evaluation, it was required to develop human resources to train qualified persons for energy management and energy audit. No change in the needs was observed at the time of project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

In the Country Assistance Program for Viet Nam (2009), promotion of economic growth and strengthening of international competitiveness was one of the four priority areas. In this priority area, stable supplies for resource and energy was mentioned, including promotion of energy conservation.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the project completion. At the time of project completion, the training and qualification system of EM and EA as well as the curriculum and textbooks were established and in use. There was also a prospect for issuance of MOIT's circular that stipulated the use of the curriculum and textbooks.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued to the time of ex-post evaluation. The training and qualification system as well as the curriculum and textbooks developed by the project are still functioning and utilized at the Center for Supporting and Enterprise Development (CSED²). Regarding the Guiding Document, as a part of the administrative procedure reform, the conditions required to become a training facility for EM and EA were abolished. With this legislative change, training services for EM and EA can be conducted not only by agencies with the required conditions, such as the EMTC, but by other training agencies as well, and other training agencies can use their own curriculum and textbooks. Therefore, there is no Guiding Document set by MOIT for the curriculum and textbooks for EM and EA. However, the curriculum and textbook have been used effectively and updated by EMTC. The EMTC has been conducting training as expected and has an advantage in providing practical training with systematic training equipment. At the EMTC in HCMC³, a total of 34 training courses for EM and EA were held during the period between 2016 and 2019, and the number of trainees has been increased year by year. Considering these facts, it is judged that the expected project effects have been continued.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. According to the internal data of MOIT, the energy intensity has been reduced by more than 5% during the period from 2016 to 2019. Although the comprehensive statistical data was not disclosed, the current status of energy intensity was confirmed by the evaluator at the time of ex-post evaluation during the interview with MOIT. Every year, MOIT updates and discloses the list of designated energy users (firms and buildings that consume more than 1,000 Tons of Oil Equivalent per year) in all sectors. Designated energy users, according to legal regulations, have to assign their staff to attend training and get the certificate of EM. As the number of EM and EA trained in the practical courses at the EMTC has increased, many enterprises raised their awareness of impact of energy management to their operational efficiency and effectiveness.

<Other Impacts at the time of Ex-post Evaluation>

The training system established by the project, including the training facility, has been highly evaluated by the ASEAN Center for Energy (ACE) and ACE started conducting regional training courses at CSED in 2019 with the participation of trainers from CSED and in collaboration with ECCJ. No negative impact has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) The Energy Management Training Center is established and managed for training Energy Managers and Energy Auditors.	(Indicator 1) Establishment of training and qualification system of energy manager and energy auditor.	Status of the Achievement: achieved (continued) (Project Completion) <ul style="list-style-type: none"> Through the activities of the project, equipment for practical training was installed in the EMTC in HCMC and the technical staff in the EMTC were trained for maintaining the equipment. Trainers for EM and EA training courses became capable trainers through some training courses implemented in the project such as trainers' training for EM and EA and on-site EA training. (Ex-post Evaluation) <ul style="list-style-type: none"> The training system of EM and EA including the curriculum and textbooks developed by the project has still been used by the EMTC under CSED (under DOIT-HCMC).
	(Indicator 2) Curriculum and textbook are completed as Guiding Document of the Minister.	Status of the Achievement: partially achieved (partially continued) (Project Completion) <ul style="list-style-type: none"> Training materials, including theoretical and practical slides and practical guidelines, were completed and these training materials were used in training courses substantially. The training materials were expected to be the Guiding Document of the MOIT. According to MOIT, the revision of the related document, i.e., the Circular 39/2011/TT-BCT, was planned to be set in process in 2016 and be enacted in 2017. (Ex-post Evaluation) <ul style="list-style-type: none"> Due to a legislative change, the above-mentioned circular has not been enacted, and hence the curriculum and textbooks were not issued as MOIT's Guiding Document. However, curriculum and text

² PRET was reorganized to CSED by HCMC People's Committee's Decision in November 2016.

³ During the project, it was planned to establish the second EMTC in Hanoi. The EMTC in Hanoi is located in Hoa Lac High Tech Park, under DOIT, but still under construction at the time of ex-post evaluation, due to budget shortage from Hanoi People's Committee to invest in training equipment.

		book have still been updated and utilized effectively at EMTC in HCMC. The EMTC in HCMC has been offering training courses for EM and EA as one of the leading training facilities and helping trainees to complete the qualification test.
(Overall Goal) Under the Law on Energy Efficiency and Conservation, energy management in designated enterprises is enhanced.	(Indicator 1) Energy intensity of designated enterprises is reduced by 5%, comparing the data between 2016 and 2020.	(Ex-post Evaluation) achieved • As there was not comprehensive national statistics report ⁴ , MOIT has calculated some internal data on energy intensity and it was confirmed through the interview with MOIT that it had been surely reduced by more than 5%, although the data was not official so was not disclosed.

Source: Terminal Evaluation Rerpot, Project Completion Report, Questionnaire and interview to MOIT, DOIT, and CSED

3 Efficiency

Both the project cost and the project period exceeded the plan (ratio against the plan: 133% and 110%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The VNEEP (2019-2030) focuses on improving legislative framework; providing financial and technical support to promote projects on energy efficiency in manufacturing and renovating production lines; developing national energy database center and IT application in energy management.

<Institutional Aspect>

After the project completion, there was organizational reform at MOIT, and PRET was reorganized to CSED under DOIT. At the time of ex-post evaluation, MOIT has two officials and CSED has six. The current organizational structure and manpower is sufficient to sustain project effects as these organizations assume necessary tasks. MOIT performs state management and supervises the issuance of national certificates for EM and EA. At the EMTC, they can manage the training courses and the qualification system for EM and EA. In the long term, it may be necessary to recruit and train the next generation staff to manage and maintain the EMTC. CSED cooperates with MOIT in issuing certificates for EM and EA. Under the national program on economical and efficient use of energy, CSED also conducts some training courses upon request of MOIT. Both the EMTC and CSED cooperate with universities to mobilize trainers for training courses and CSED also collaborates with auditing firms to conduct energy auditing upon request from enterprises.

<Technical Aspect>

At MOIT, DOIT-HCMC and CSED, at least one member of those involved in the project is still working and engaged in their duties. At CSED, the staff has updated knowledge and the training curriculum by themselves. However, CSED is not capable for in-depth maintenance of the training equipment such as software update, and currently they conduct simple periodical maintenance. CSED needs assistance for in-depth maintenance of the training equipment.

Staff allocated during the project and at the time of ex-post evaluation

Organization	No. of members involved in the Project	No. of members still working
MOIT	3	3
DOIT-HCMC	2	1
PRET/CSED	3 (PRET)	1 (CSED)

<Financial Aspect>

As training for EM and EA can be conducted not only at training facilities with required conditions but at other agencies as well, it is now operated based on a market mechanism without any financial support from central state budget (MOIT). In HCMC, DOIT allocates some budget to support enterprises located in HCMC (not those in other provinces or other cities) that attend EM and EA training courses by CSED. The estimated annual amount is 960 million Viet Nam Dong (VND) for 2018 and 2019. Except for such budget support by DOIT, CSED has to balance expenditure and revenue by gaining tuition fees of the training courses. In addition, CSED has to compete with other training agencies in the market to maintain the operation of the training center. The maintenance budget has also been allocated from the revenue from the training courses, and there is no budget support from DOIT for maintenance.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The project partially achieved the Project Purpose of establishing and managing the EMTC for training of EM and EA, as training and qualification system of EM and EA was established though the Circular regarding the Guiding Document on the curriculum and textbook was not issued by project completion. At the time of the ex-post evaluation, the project effects have been continued, as the training system of EM and EA including the curriculum and textbooks developed by the project has still been utilized by the EMTC, although the Guiding Document for the curriculum and textbooks has not been issued due to the legislative change. The Overall Goal of enhancement of energy management in designated enterprises has been achieved, as MOIT confirmed the reduction of energy intensity of designated enterprises. Sustainability is ensured in the policy and institutional aspects, but some problems have been observed in the technical and financial aspects, as CSED staff conduct only periodic maintenance and no budget is allocated to CSED by government. As to the efficiency, both the project cost and the project period exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

⁴ Under the VNEEP (2006-2015), there was report on energy consuming. However, since 2015 MOIT has been unable to make any national statistics report, as there was no budget allocated from the national program.

- DOIT-HCMC is recommended to allocate necessary budget for the maintenance of facilities at the EMTC in the medium and long terms. The in-depth or more complex maintenance requires financial and technical resources that cannot be covered by own financial resource of CSED.
- CSED is recommended to assign and train more staff that are capable to manage and operate the facilities at the EMTC, including the in-depth maintenance of training equipment, for the sustainable operation of the training center.
- As some trainers joining TOT courses conducted under the project have been nearly retirement age, CSED is recommended to train more trainers to ensure the quality and sustainability of the training courses”

Lessons learned for JICA:

- The statistical information for the indicator of energy intensity reduction by 5% to evaluate the achievement of the Overall Goal was not available, although it was expected to be collected and disclosed at the time of project completion. In addition, one of the indicators of the Project Purpose, the curriculum and textbooks completed as the Guiding Document of MOIT was not applicable due to the change of the legislative system, and was not very appropriate to evaluate the project effects. Therefore, the indicators should have been carefully selected with consideration of actual and continuous availability of such data, and of the political and social environment especially as to the indicator relating to a legislative matter, as such unexpected changes in external environment cannot be controlled.



The Energy Management Training Center in HCMC



The training facility at Energy Management Training Center in HCMC