

1. 評価調査結果要約表（英語）

Summary of Evaluation result

1. Outline of the Project	
Country : Socialist Republic of Vietnam	
Project Title : Project on Instructor Training for Electric Power Sector	
Issue / Sector : Electricity	
Cooperation Scheme : Technical Cooperation Project	
Division in Charge : JICA Vietnam Office	
Total Cost (at the time of Evaluation) : 254 Million yen	
Cooperation Period	From March 30, 2001 to March 29, 2006
	Partner Country's Implementation Organization : Electricity of Vietnam (EVN), Electric Power College (EPC)
Supporting Organization in Japan : Japan Electric Power Information Center	
<p>1-1. Background of the Project</p> <p>The development of Vietnam's electric power foundation is an issue requiring immediate attention as part of a broader framework of developing infrastructure with an eye to economic growth. The country's electric power supply and the development of power resources are controlled by the Electricity of Viet Nam (EVN). Some of the undertakings of EVN involving electric power facilities include the development of hydraulic power in the northern region of the country having abundant hydropower resources, the development of thermal power fueled by coal produced within the country, and the reinforcement of power transmission equipment extending from the power supply region in the north to the southern regions of the longitudinal country.</p> <p>EVN also trains electric power engineers in response to the increase in the number of electric power facilities as a measure to provide a stable supply of power. However, as an institution for developing engineers capable of operating the rapidly increasing number of power equipment and to maintain and manage new types of equipment, its training skills and facilities both need upgrading.</p> <p>In light of this situation, JICA dispatched a preliminary study team in April 1999 to verify the conditions for the training of electric power engineers in Vietnam, to assess the requests of the Vietnam side, and to provide an overview of JICA's project-type technical cooperation scheme. In May 1999, Vietnam requested the support from the Japanese government in the form of project-type technical cooperation with the objective of transferring training technology which Vietnam needs for developing electric power engineers from Japan to Vietnam.</p>	
<p>2. Project Overview</p> <p>(1) Super Goal The electric power system in Vietnam will be operated and maintained effectively.</p> <p>(2) Overall Goal</p> <ol style="list-style-type: none"> 1) Implementation of the training courses (developed by this project) is expanded in Vietnam. 2) Field engineers become capable of modern operation and maintenance in Vietnam <p>(3) Project Purpose EPC is able to train field engineers continuously for strengthening their systematic capacity on operation and maintenance in five technical areas (Thermal power generation, distribution, transformation, hydropower generation, and transmission line).</p> <p>(4) Outputs</p> <ol style="list-style-type: none"> 0) Project operation unit is established. 1) Training Curriculums are developed in EPC. 2) Training materials are developed in EPC. 3) Core instructors capable of instructing operation and maintenance in five technical areas are trained at EPC. 4) Systematic Off-JT courses for field engineers are implemented by Core Instructors. 5) Provided machinery and equipment for training based on the curriculums are utilized. 6) The training implementation scheme for sustaining above Outputs (1 to 5) is established. 	

(5) Inputs (at the time of Evaluation)

(Japanese side)

- 1) Long Term Experts : 14 experts in total (Composition : 1 Chief Advisor, 1 Coordinator and 1 Technical Experts each in 5 technical fields)
- 2) Short Term Experts : 36 experts in total (Composition : Thermal (9), Hydro (7), Transmission (6), Transformation (6) and Distribution (8))
- 3) C/P Training in Japan : 23 C/Ps
- 4) Provision of Equipments : All planned equipments have already been installed (equivalent 254 million yen)

Main equipments : Simplified thermal operation simulator, CBT software, Nondestructive inspection kits, Hotline insulator cleaner, Bucket truck, Facilities, equipments, tools and soft wares necessary to conduct training courses, Books, etc.

(Vietnamese side)

- 1) C/P allocation : 36 C/Ps in total (19 full time C/Ps and 17 part-time)

	Thermal	Hydro	Transmission	Transformation	Distribution	Total
Fulltime C/P	6	3	4	3	3	19
Part-time C/P	7	3	2	1	4	17
Total	13	6	6	4	7	36

Project Manager (Rector of EPC) : 1

Project Coordinator : 1

Assistant of Project Coordinator : 1 (additionally allocated in February, 2004)

- 2) Budget : 5.23 billion VND (in September, 2005)

- 3) Facility : EPC provides good working space. There are slight delay of the decisions on the storage space of the equipments procured by Japanese side and improvement of flaws.

2. Evaluation Team

Team Members	(1) Leader : (2) Technical Transfer Evaluation : (3) Evaluation of Technical level of Electric Engineers : (4) Cooperation Planning : (5) Evaluation Analysis :	Fumio Kikuchi, Resident Representative, JICA Vietnam Office Tomomi Koyanagi, Policy Planning Division, Electricity and Gas Industry Department, Agency of Natural Resources and Energy, Ministry of Economy, Trade and Industry Shigetaka Tonami, International Cooperation Center, Japan Electric Power Information Center Tomoni Adachi, Group II, Economic Development Department, JICA Kyoji Fujii, Utility Department, International Division, Yachiyo Engineering Corporation Ltd.
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Period	18 th October, 2005 – 3 rd November, 2005	Type of Evaluation : Final Evaluation
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3. Summary of Evaluation**3-1 Summary of Evaluation Result****(1) Relevance**

Relevance of the Project is high. Both the Project Purpose and the Overall Goals are in conformity with the development policy in Vietnam as well as the Japanese assistance policy on Vietnam. Project approach which incorporates PDCA cycle is relevant because it will contribute to the continuation of the project outputs and the sustainability.

(2) Effectiveness

Effectiveness of the Project is high. Outputs 0 to 5 are almost to be achieved. As for Output 6, verifiable indicators other than "6.3 Description of duties of core instructors" and "6.4 Established Committee on Off-JT Training" have already been satisfied. Training system developed by the Project

which enables to incorporate the training needs of field engineers in training courses contributes to achieve the Project Purpose.

Through the project activities, the following outcomes are observed; (i) Ability of C/Ps has been dramatically improved, (ii) Training machinery and equipment are utilized, (iii) Training courses are implemented and (iv) The level of satisfaction by course participants is relatively high. Accordingly, Project outputs contribute to achieve the Project Purpose.

(3) Efficiency

Efficiency of the project implementation is high. Inputs from the both Japanese and Vietnamese sides are almost appropriate. Although some C/Ps did not have enough job experience/ field experience, technical knowledge and communication ability in English, their ability has been dramatically improved through the C/P training in EVN subsidiaries and technology transfer by the Project.

(4) Impact

Training courses were expanded to other organizations than EVN group. In addition, field engineers became to exchange information with the ones in the other fields efficiently through the activities of the two (2) SWGs. These are observed as positive impacts of the Project. On the other hand, it is also observed that full time C/Ps dispatched from the fields have anxiety on their future position as a negative impact. However, EVN is planning to take necessary countermeasures in December, 2005.

(5) Sustainability

Sustainability of the Project will become high on condition that Output 6 is fully achieved. It is a considerable progress that SWG (Standing Working Group) on technical training and SWG in transmission line field were established. Because they enable company-wide planning of technical training and information exchange among the fields and other institutions. Also the organization for continuous training, namely, Off-JT Committee will play very important role to sustain the training system developed by the Project.

As for financial sustainability, EPC currently bears necessary expenses for training and it will be continuously secured toward the future.

The trained C/Ps have intentions to continue their job as Core Instructors after the termination of the Project. EVN should establish appropriate structures and policies to utilize the Core Instructors, to continue and expand the outputs of the Project.

3-2 Conclusion

Overall, the Project has been successfully implemented until the time of the evaluation. The Project is expected to achieve the Project Purpose by the end of the Project period completely. Therefore, as the original plan, it is appropriate to complete the Project on 29th March, 2006.

The skill of C/Ps has been improved much through the Project activity, it is suggested the main factors of this improvement are relevance of approach of the Project and the contribution on technical transfer from Japanese experts. It is expected that project approach in adapting PDCA cycle and the Standing Working Group, the organization established through the Project, contribute for the sustainability of the Project.

3-3 Recommendation

The followings are recommended :

1. To clarify the duties of C/Ps,

Through the Project, the importance of the Core-Instructors has been recognized among related parties. In order that the core-instructors can concentrate on their role such as design, conduct, check and modify the training courses, the Project has submitted the draft of the duties of the Core-Instructors to EVN H.Q. Based on this proposal, EVN shall issue the regulations on duties of

the Core-Instructors in December, 2005 in order to secure the sustainability of the Project. The Vietnamese side shall make necessary modifications of the rules through the activities of SWG on Technical Training.

2. To establish the Committee of Off-JT Training,

This Committee is vital for training agencies in EVN to provide suitable training courses. EVN shall establish the Committee within the year of 2005.

3. To continue the activities of the Standing Working Group and the Committee periodically

In Vietnam, the necessity of human resources development is increasing in relative with the importance of role of the power sector. In order to develop excellent human resource in the fields, the enforcement of relationship among training agencies, subsidiaries and EVN H.Q. is very important. EVN has recognized this matter and already established two (2) SWGs and will establish one (1) Committee. Drafts of the regulations of the two (2) SWGs have already been submitted to EVN. In order to secure the sustainability of the Project, the following conditions are required to be fulfilled

- EVN approves these regulations as soon as possible.
- These two (2) SWGs and the Committee fulfill their roles continuously.

4. To establish human resource development plan to select training courses which match the job title of each engineer.

The combination between OJT and Off-JT training is very important. It is essential to formulate a human resource development plan which defines the required training courses for the positions of each employee. Therefore, it is also necessary to clarify the required skills and knowledge for each position. As an example, the Project created a draft of database of personnel management of Uong Bi thermal power plant as a case study which shows required skills, knowledge and procedures of training planning. Also, a draft of Guideline/Operation manuals for planning training courses of Uong Bi thermal power plant has been prepared. They have been already proposed to EVN H.Q. EVN is expected to revise and apply them as a pilot project in Uong Bi thermal power plant before spreading them to other fields.

3-3 Lessons Learned

Detail investigations are essential to make the plan of a project prior to the commencement of the project. But it is very difficult to conduct a survey completely in advance. In order to implement a project in line with the actual situation, if some changes of the process or plan of the project are needed after the project start, the related agencies should discuss and modify the plan including PDM.