

Country Name	Electric Power Technical Standards Promotion Project in Viet Nam
Viet Nam	

I. Project Outline

Background	<p>Since the power demand in Viet Nam has been rapidly growing, it was projected to increase by 6.6 times during the period from 2000 to 2020. In order to cope with the growing power demand, the government of Viet Nam stipulated a strategy for the power sector reform, including liberalization of the power market, and promoted construction of power facilities, including power generation plants, through encouragement of Independent Power Producers. Under these situations, it was essential for stable power supply to develop and upgrade unified and practical technical standards for construction, operation and maintenance of power facilities as well as to enforce them in the power industry of the country. JICA supported revisions of Volume 5-7 of the Electric Power Technical Regulations, which had been stipulated by support of the former Soviet Union, through the Development Study (from May, 2005 to June, 2007) by JICA. The revised technical standards were promulgated by the Ministry of Industry and Trade (MOIT) in December, 2009. However, there was no guideline to apply the technical regulations at power facilities. Also, the existing technical regulations did not include the ones for large-scale thermal power plants. Therefore, the government of Viet Nam requested the government of Japan to provide the technical guidance for adequate applications of the electric power technical regulations to the power industry of Viet Nam.</p>												
Objectives of the Project	<p>Through drafting of the technical regulations for power facilities and drafting of guidelines for the revised technical regulations, the project aimed at authorization of the Electric Power Technical Regulations and Guidelines by the Vietnamese authorities, and thereby contributing to enforcement of the authorized Electric Power Technical Standards* and Guidelines to ensure improvement of reliability and safety of power supply in Viet Nam.</p> <ol style="list-style-type: none"> 1. Overall Goal: The Electric Power Technical Standards* and Guidelines shall be enforced to ensure improvement of reliability and safety of power supply in Viet Nam. 2. Project Purpose: The Electric Power Technical Regulations and Guideline are authorized by the Vietnamese authorities. <p>*According to “the Law on Technical Regulations and Standards” in Viet Nam, the name of technical documents to be promulgated should be “the Electric Power Technical Regulation (Quy Chuan Viet Nam: QCVN)” instead of the “Technical Standards”.</p>												
Activities of the Project	<ol style="list-style-type: none"> 1. Project Site: Whole country of Viet Nam 2. Main Activities: 1) Reviewing the existing technical regulations and related documents, 2) Elaborating the drafts of Electric Power Technical Regulations and Guidelines by the working groups of hydropower generation, thermal power generation, power networks, etc. 3. Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Vietnamese Side</td> </tr> <tr> <td>1) Experts: 17 persons</td> <td>1. Staff Allocated: 54 persons</td> </tr> <tr> <td>2) Trainees Received: 21 persons</td> <td>2. Land and facilities: project office in MOIT</td> </tr> <tr> <td>3) Equipment: projectors and PC</td> <td>3. Local expenses: administrative costs for Working Groups activities, site surveys, workshops by Vietnam Electricity, etc.</td> </tr> <tr> <td>4) Local expenses: costs for local consultants and general activities</td> <td></td> </tr> </table> 			Japanese Side	Vietnamese Side	1) Experts: 17 persons	1. Staff Allocated: 54 persons	2) Trainees Received: 21 persons	2. Land and facilities: project office in MOIT	3) Equipment: projectors and PC	3. Local expenses: administrative costs for Working Groups activities, site surveys, workshops by Vietnam Electricity, etc.	4) Local expenses: costs for local consultants and general activities	
Japanese Side	Vietnamese Side												
1) Experts: 17 persons	1. Staff Allocated: 54 persons												
2) Trainees Received: 21 persons	2. Land and facilities: project office in MOIT												
3) Equipment: projectors and PC	3. Local expenses: administrative costs for Working Groups activities, site surveys, workshops by Vietnam Electricity, etc.												
4) Local expenses: costs for local consultants and general activities													
Project Period	March 2010 – June 2013 (Extension: March 2013 – June 2013)	Project Cost	(ex-ante) 430 million yen, (actual) 485 million yen										
Implementing Agency	Ministry of Industry and Trade (MOIT) Ministry of Construction (MOC) Vietnam Electricity (EVN)												
Cooperation Agency in Japan	Electric Power Development Co., Ltd. Shikoku Electric Power Co, Inc. West Japan Engineering Consultants, Inc.												

II. Result of the Evaluation

<Special perspective to be considered in the ex-post evaluation>

Since the Project Purpose is preparation of the drafts of technical regulations and guidelines on power network facilities and construction for promulgation, the continuation status of the project effects was verified by utilization of the drafts prepared by the project for reviewing and updating the drafted QCVN as the achievement status of the Overall Goal to enforce and disseminate QCVN.

1 Relevance

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

The project was consistent with Viet Nam’s development policies of “The Power Master Plan VI (2006-2015)” emphasizing the necessity of increasing the electricity supply by 22% at most and “The Power Master Plan VII (2011-2020)” promoting construction of electric power facilities including power plants, transmission lines and substations in order to take measures against the growing electricity demand in the background of the consolidated economic growth.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion >
 The project was consistent with Viet Nam’s development needs in developing the guidelines to apply technical regulations at power facilities and revision of existing technical standards to be adapted to new technologies such as large-scale thermal plants.

<Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation>
 The project was consistent with Japan’s ODA policy of “The Country Assistance Plan for Viet Nam (2004)” prioritizing support for economic growth acceleration as one of the three priority areas, including the power sector.

<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 time of project completion. The final drafts of Electric Power Technical Regulations in the scope of MOIT and the Technical Guidelines in the scope of MOIT and MOC (Indicator 1, 2, and 4) were approved by the Joint Management Committee (JMC)¹ which had been established for managing the project activities and approving the outputs by the project. However, the Technical Regulations concerning civil works of hydropower plants in the scope of MOC (Indicator 3) was not promulgated because of the delay of the finalization process to reinforce the technical requirements for dams required by the government of Viet Nam.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>
 The project effects have been continued since the project completion. Although the drafts of QCVN have not been promulgated yet, the draft QCVN, which has been developed based on the draft technical regulations and guidelines prepared by the project, has been in the process of reviewing and updating in accordance with the amendments of the laws on electricity and construction as well as for responding to new technologies.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>
 The Overall Goal has not been achieved by the time of ex-post evaluation. The drafted QCVN on power network facilities and power plants under MOIT and the drafted QCVN on civil works of hydropower plant, which was transferred from MOC to MOIT, have been in the process of promulgation. The drafts proposed by the Japanese experts are mainly based on the technical standards on power facilities in Japan which stipulates general technical requirements on each type of power facility and allows project owner to choose technical specifications to the technical requirement defined by the Guidelines on a voluntary manner. On the other hand, the Law on Standards and Technical Regulations of Viet Nam requires that QCVN provides mandatory technical requirement, covers economic factors and should be used as a management tool for investment efficiency, which had not been covered by the drafted technical regulations by the project and has required much more time to review and update than expected at the time of project completion. In addition to the amendments of the laws on electricity and construction, the change in organizational structure of MOIT also made the process for promulgation prolong. While the drafts prepared by the project are separated into the technical regulations and the technical guidelines, the drafted QCVN includes technical guidelines as annex in accordance with the Law.

<Other Impacts at the time of Ex-post Evaluation>
 Although the drafted QCVN on power network facilities has not been promulgated yet, some owners of the power plants have applied the drafted QCVN voluntarily since it was based on the drafts of the technical regulations and guidelines prepared by the project and had been circulated among the stakeholders in the power industry for consultations.
 No negative impact of the project was confirmed at the time of ex-post evaluation.

<Evaluation Result>
 Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) The Electric Power Technical Regulations and Guideline are authorized by the Vietnamese authorities.	1. The final draft of the Electric Power Technical Regulations in the scope of MOIT is approved by JMC* by June 2013. *Joint Management Committee	Status of the Achievement: Achieved (Continued) (Project Completion) <ul style="list-style-type: none"> The final draft was approved as planned. (Ex-post evaluation) <ul style="list-style-type: none"> The drafted QCVN on power network facilities has been based on the drafts of technical regulations and guidelines developed by the project. Due to new technologies such as smart grid, and the promulgation of the amended Law on Electricity and its guiding decrees in 2014 as well as the organizational structure change of MOIT, the reviewing and updating of drafted QCVN have been prolonged and planned to be promulgated in the 3rd Quarter of 2018.
	2. The final draft of the Electric Power Technical Guidelines in the scope of MOIT is approved by JMC by June 2013.	Status of the Achievement: Achieved. (Continued) (Project Completion) <ul style="list-style-type: none"> The final draft was approved as planned. (Ex-post evaluation) <ul style="list-style-type: none"> As for the current status of the final draft of the technical guidelines, refer to the Indicator 1 for the Overall Goal.

¹ JMC was composed of MOIT, MOC, EVN and JICA.

	<p>3. The Technical Regulations concerning civil works of hydropower plants in the scope of MOC is promulgated by the end of 2012.</p>	<p>Status of the Achievement: Not achieved (Continued) (Project Completion)</p> <ul style="list-style-type: none"> The promulgation of technical regulations was not achieved by the end of 2012 because incidents on the existing dams such as Song Tranh 2 Hydropower Plant Project, which attributed to design and construction of dam structure, brought about the delay of the finalization process to reinforce the technical standards for dams required by the government of Viet Nam. <p>(Ex-post evaluation)</p> <ul style="list-style-type: none"> Due to the promulgation of the amended Law on Construction and its guiding decrees in 2017, the drafted QCVN based on the drafts prepared by the project have been still in the process of reviewing and updating and planned to be promulgated in the 2nd Quarter of 2019.
	<p>4. The final draft of Technical Guidelines concerning civil works of hydropower plants in the scope of MOC is approved by JMC by June 2013.</p>	<p>Status of the Achievement: Achieved. (Continued) (Project Completion)</p> <ul style="list-style-type: none"> The final draft was approved as planned. <p>(Ex-post evaluation)</p> <ul style="list-style-type: none"> As for the current status of the final draft of technical guidelines, refer to the Indicator 3 for the Overall Goal.
<p>(Overall Goal) The Electric Power Technical Standards and Guidelines shall be enforced to ensure improvement of reliability and safety of power supply in Viet Nam.</p>	<p>1. The Electric Power Technical Regulations under MOIT are promulgated by the end of 2014.</p>	<p>(Ex-post Evaluation) Not achieved</p> <ul style="list-style-type: none"> QCVN on power network facilities: The draft has been appraised by MOST in November, 2017 (ref.3729/BKHHCN-TDC) and the Legal Department of MOIT in May 2018 (ref.517/PC-XDPL). In addition to the amendment of the Law on Electricity in 2014, the establishment of the Electricity and Renewable Energy Authority based on the previous General Department of Energy of MOIT affected the progress of the internal appraisal by MOIT and the appraisal by MOST. QCVN on hydro power plant: The 1st draft was developed by MOC and transferred to MOIT for promulgation after circulating among the relevant agencies for comments. It is planned to be promulgated in the 2nd quarter of 2019 after preparing the 2nd draft by MOIT and appraisal by MOST. The delay was because of the amendment of the Law on Construction in 2015 and its guiding decrees in 2017. QCVN on thermal power plant: MOIT reviewed and re-compiled the draft of QCVN based on the drafted technical regulations and guidelines developed by the project and circulated the drafted QCVN among the relevant agencies but many controversial opinions on it were revealed. In particular, since technologies, type of equipment and facilities vary among coal-fired thermal power plants by owners, such as the Vietnam Electricity (EVN), Vinacomin (a mining company), and the Petro Vietnam (PVN), there have been difficulties to make coordination.
	<p>2. The Electric Power Technical Guidelines under MOIT are disseminated through website, workshops, distribution of booklets, etc. by the end of 2014.</p>	<p>(Ex-post Evaluation) Not applicable</p> <ul style="list-style-type: none"> Although the drafted QCVN based on the drafts developed by the project has not been promulgated yet, it has been distributed by EVN to concerned agencies in the power industry for their reference and comments. The drafted technical guidelines developed by the project have been integrated into the drafted QCVN as an annex since QCVN is solely technical regulations and no guideline following it in the Vietnamese legal system.
	<p>3. The Technical Guidelines concerning civil works of hydropower plants under MOC are disseminated through website, workshops, distribution of booklets, etc. by the end of 2014.</p>	<p>(Ex-post Evaluation) Not applicable</p> <ul style="list-style-type: none"> The drafted technical guidelines developed by the project have been integrated into the drafted QCVN as an annex since QCVN is solely technical regulations and no guideline following it in the Vietnamese legal system.
	<p>4. Compliance of the Technical</p>	<p>(Ex-post Evaluation) Not verified.</p> <ul style="list-style-type: none"> Since the drafted QCVN has not been promulgated yet,

	<p>Regulations and utilization of the Technical Guidelines are checked by the following points:</p> <ul style="list-style-type: none"> - No. of approved large-scale project after the promulgation of the Technical Regulations - No. of completion inspection reports to a committee concerned and no. of order for improvement - Internal operational regulations according to the Technical Regulations prepared by facilities owned by EVN and other operators. 	<p>the indicator 4 was not able to be verified.</p>
--	---	---

Source : Project Completion Report, Questionnaire answers by MOIT and EVN and Interview with MOIT

3 Efficiency

The project cost and period exceeded the plan (ratio against the plan: 113% and 108%, respectively). Although there was no change in the planned outputs, the additional inputs for additional dispatch of the Japanese experts, hiring a local consultant and the extension of project period were required for finalization of the drafts of the Technical Regulations and the Guidelines including Vietnamese versions for promulgation. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

“The Power Master Plan VII (2011-2020)” with the vision to 2030 promotes construction of electric power facilities including power plants, transmission lines and substations in order to meet the growing electricity demand in Viet Nam. The promotion of construction of power facilities requires the updated and upgraded technical regulations and guidelines to standardize the power system for stable and reliable power supply in Viet Nam. The amended Law on Electricity and its guiding decrees in 2014 and the amended Law on Construction in 2015 and its guiding decrees in 2017 require to reflect the updated and new regulation stipulated in the laws into the drafted QCVN based on the drafts technical regulations and guidelines prepared by the project.

<Institutional Aspect>

The Department on Technology and Science of MOIT is mainly responsible for promulgation of QCVN on power network facilities and power plants and three officers have been sufficiently deployed for the work. They are going to be in charge of dissemination of QCVN after promulgation. Together with other members of the working group (the Electricity Regulatory Authority (2 officers), the Electricity and Renewable Energy Authority (2 officers) and the Technical Safety and Industrial Environment Authority (2 officers) under MOIT and EVN (3 officers)), they directly review and update the drafted QCVN based on their expertise. They also play a role to coordinate with concerned agencies and experts for reviewing and updating the drafted QCVN. The working group for the promulgation process has been well functioning under the involvement and cooperation of the concerned agencies and experts.

<Technical Aspect>

The officers of MOIT who are engaged in the promulgation process of the drafted QCVN attended training workshops on technical standards organized by MOIT and they have sustained and updated their knowledge on technical standards. MOIT and the Department of Industry and Trade (DOITs) at local level annually organize workshops to update knowledge of their staffs on newly promulgated legal documents and regulations including QCVN.

<Financial Aspect>

MOIT has specifically allocated 500 million Vietnamese Dong (VND) covering the operation cost of the working group for the QCVN on power network facilities, including hiring the local experts for reviewing and finalizing the drafts in 2014 and 2015 and the budget amount is considered as sufficient. As the QCVN on thermal power plants is scheduled for promulgation in the coming period 2021-2025, there is no specific budget for its working group. Although there is not yet specific budget allocation for the working group of the QCVN on hydro power plants, officials in charge in MOIT have still been working on the draft QCVN as their normal business under the general budget. Therefore, even though the budget has been partially secured, there is no serious concern on budgeting for the promulgation process in future.

<Evaluation Result>

Therefore, the sustainability of the effects through the project is high.

5 Summary of the Evaluation

The project partially achieved the Project Purpose but not achieved the Overall Goal to promulgate the drafted QCVN on power network facilities and civil works. The process of promulgation has been still on going based on the drafted technical regulations and guidelines prepared by the project and there is a road map for promulgation in the coming years. As for the efficiency, the project cost and period exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

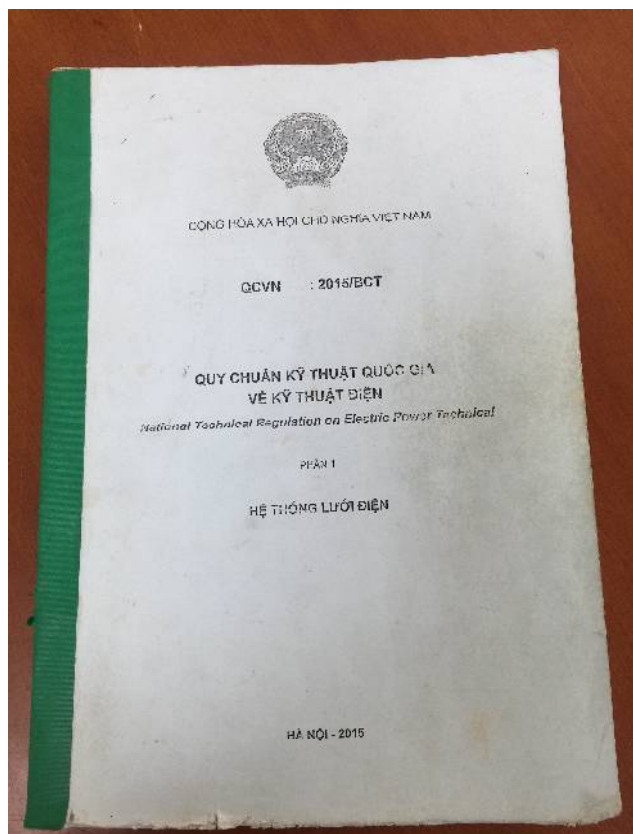
III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:
[MOIT]

- It is recommended to allocate necessary resources and mobilize local experts to review and improve the thermal power technical regulations and guidelines as with the case of the finalization process for the QCVN on the power networks facilities, so that the controversial issues can be solved and the drafted QCVN for thermal power will be soon promulgated.

Lessons Learned for JICA:

- The overall goal, set during the project formulation process, is too high to be achieved. For network and hydro-power plant technical regulations, the time-consuming procedures under the Government of Vietnam to promulgate technical regulations and other inhibiting factors such as issuance of new law or organizational changes were not thoroughly examined. For thermal power plants, the various type of technologies, equipment and facilities applied in existing coal-fired thermal power plants, were not thoroughly studied. Therefore, the promulgation procedures, inhibiting factors, different characteristics applied in the power plants should have been carefully examined to set a more feasible overall goal to be achieved.
- There were gaps between the project outputs and what Vietnamese side can use to promulgate technical regulations. It seems Vietnamese side accepted the proposal on project design and approach at the project formulation stage but did not provide detailed information of what they had needed for each technical regulation and the characteristics of each energy sector. Therefore, more involvement from the recipient government right from the stage of project formulation should have been encouraged so that practical approach for promulgation of technical regulations and outputs can be identified by both sides. Even, a preparation survey, which is longer and more detailed than usual practice could have been adopted for such a project with technical complications. In addition, it is essential to consider necessary inputs including local experts on technical regulations at the time of project formulation in order to conduct necessary activities smoothly.



The draft QCVN on power network, that has been adopted by some project owners