

TECHNICAL ASSISTANCE COMPLETION REPORT

Division: SEEN

TA No., Country and Name			Amount Approved: \$600,000	
TA 4966-VIE: Capacity Building on Environmental Management to the Power Sector			Revised Amount: N/A	
Executing Agency: Viet Nam Electricity and Quang Ninh's Peoples Committee		Source of Funding: Government of France	Amount Undisbursed: \$28,192.19	Amount Utilized: \$571,807.81
TA Approval Date: 10 Sep 2007	TA Signing Date: 4 Feb 2009	Fielding of First Consultants: 23 Mar 2009	TA Completion Date Original: 30 Sep 2008	Actual: 31 Oct 2010
			Account Closing Date Original: 30 Sep 2008	Actual: 13 May 2011
Description				
<p>In July 2007, the Government of Viet Nam prepared the 6th Power Development Master Plan (2006–2015) to address the country's power demand requirements. The plan identified the need for new power generation, transmission, and distribution projects to be implemented to meet the nation's growing demands. It forecasted increase in power demand by 17%–20% during the period 2006–2015. Considering coal as a primary source of fuel for power plants, the impact of the operations of thermal power plants (TPPs) could be positive as well as adverse. The process of power generation using fossil fuels produces particulate and gaseous emissions, which results in related environmental issues. The Government of Viet Nam requested assistance from ADB in building the capacity of Viet Nam Electricity (EVN), the largest power company in Viet Nam, focusing on strengthening EVN staff capacity in environmental management and adopting best environmental practices to ensure sustainable development of the country's power sector. The TA was also designed to assist the Department of Environment and Natural Resources (DONRE) of Quang Ninh Province in addressing air pollution problems due to thermal power generation and improving its capacity for managing air quality in the province.</p>				
Expected Impact, Outcome and Outputs				
<p>The expected impact of the TA was sustainable development of the thermal power subsector in Viet Nam. The expected outcome of component 1 was building adequate capacity and technical knowledge within EVN to implement pollution control and environmental management measures associated with TPP. The outcome of component 2 was improved knowledge and technical capacity for air pollution monitoring and management planning among Quang Ninh environmental officers. The expected outputs of component 1 included: (i) improved knowledge in environmental planning and management strategies of staff in TPP operations of EVN, its associated institutions and organizations, including the thermal power project management units (TPPMU) and power engineering and consulting companies (PECC); (ii) strengthened capacity of PECC, TPPMU, and TPP in designing and implementing pollution control and environmental monitoring measures; (iii) training materials including state-of-the-art knowledge and international best practices that can be used by EVN for its future training activities; and (iv) a medium-term capacity building plan to sustain the benefits of the TA activities. For component 2, the expected outputs included (i) strengthened Quang Ninh DONRE's capacity for managing air quality and controlling air pollution from TPP and mining activities in the province; (ii) an air quality management plan for Quang Ninh Province including action items, budget estimates, resource requirements, and implementation plan; and (iii) baseline data in air quality and public health monitoring in the vicinity of Mong Duong TPP.</p>				
Delivery of Inputs and Conduct of Activities				
<p>The TA was approved on 10 September 2007 and became effective on 4 February 2009. The original completion date was 30 September 2008. However, due to a delay in signing of the TA Letter of Agreement, which generally averages 3 to 6 months in Viet Nam because the final approval must come from the State Bank of Viet Nam, the completion date was extended to 30 September 2009. Since the consulting firm was mobilized only on 23 March 2009, a further request was approved to extend the TA completion date to 30 April 2010. To accommodate the finalization of TA activities by the consultant, the TA completion date was again extended to 31 October 2010. The delays neither affected the outputs nor the outcome.</p>				
<p>The TA provided 39 person-months of consulting services (16 person-months of international consultants and 23 person-months of national consultants) as per original TA design. A consulting firm was engaged to provide a team of experts with appropriate expertise to undertake various tasks. The EAs (EVN for component 1 and Quang Ninh People's Committee for component 2) and IAs (TPPMU1 for component 1 and Quang Ninh DONRE for component 2) supported the TA by providing appropriate counterpart staff, meetings and workshop space, and data and logistics support to the firm. The EAs/IAs and various stakeholders were consulted to review and to provide comments on consultant's reports at different stages of the implementation. The TA was implemented with active participation of the EAs, and effective and efficient coordination of ADB staff. Though the consultant has completed all the tasks stipulated in the terms of reference, the performance of the firm was rated generally satisfactory considering its five requests for contract variations, including change of leadership after contract signing.</p>				
<p>All activities planned under the TA were fully implemented and completed utilizing 95.3% of the TA amount. All disbursements were done in accordance with ADB procedures.</p>				

Evaluation of Outputs and Achievement of Outcome

The TA delivered the expected outputs and achieved its expected outcomes.

A series of capacity building activities were undertaken for EVN and Quang Ninh DONRE. This included (i) development of training materials, organizing trainings, delivering national training programs to EVN and DONRE; (ii) organizing international study tour to understand the best practices in environmental management of the power plant and air quality monitoring and management; (iii) on the job training on air quality monitoring and public health assessment; and (iv) discussion sessions with EVN and DONRE officers. Officials from EVN and Quang Ninh DONRE were actively involved in the process of planning, designing, and execution of TA activities.

Two separate national training programs were undertaken in consultations with EAs/IAs. For component 1, a total of 53 persons, from EVN and affiliated organizations, participated in the training program on environmental management in coal based power plants. For component 2, a total of 35 participants, from Quang Ninh DONRE and other organizations nominated by Quang Ninh DONRE, participated in the training on air quality management in Quang Ninh province. The national training programs included lectures, presentations, discussions, site visits and group work. Participants showed great enthusiasms about the content and coverage of the training programs.

A study tour was organized in Seoul, Republic of South Korea, in coordination with Korea Power Learning Institute (KPIL), and Korea Institute of Science and Technology (KIST). Seven officers nominated by EVN, 4 officers nominated by Quang Ninh DONRE, and 2 members from consultant's team participated in the study tour. The study tour was consisted of lectures and presentations by KPIL followed by site visits to Taean Power Plant Facility, Samsung Total Petro Chemical Company, Incheon Environmental Complex, Transportation Pollution Research Center of National Institute of Environmental Research, Environmental Management Corporation, KIST Environmental Lab, and Seoul Institute of Health and Environment. Overall, the study tour was appreciated by all the participants as they learned practical issues and management practices associated with power plant management and air quality management in industrial and general ambient air.

A handbook on management of coal mining air pollution, air quality management plan for Quang Ninh province, and medium-term capacity building plan for EVN were prepared under the TA.

Field surveys, monitoring of ambient air quality and assessment of public health status were carried out in the areas of Mong Duong and Cam Hai Commune in Quang Ninh province. Hands-on job training was conducted to equip the staff with necessary knowledge to conduct future health impact assessments. DONRE in Quang Ninh province was provided with equipment to support its capacity in monitoring and analysis of health impacts as well as ambient air quality in the region. Procurement was done in accordance with ADB's *Procurement Guidelines* (2007, as amended from time to time).

The TA has adequately built within EVN the capacity and technical knowledge of pollution control and environmental management measures associated with TPP operations. Further, the TA has significantly strengthened the capability of Quang Ninh DONRE in air quality management. The EAs and IAs have expressed satisfaction with the reports submitted by the consultant.

Overall Assessment and Rating

The TA is rated successful. However, to achieve the long-term outcome of this TA, EVN and DONRE need to continuously implement the key activities and action plans developed under this TA. They need to ensure that adequate resources are provided for the implementation of these action plans.

Major Lessons

It is important to understand and compare the success of the two components. The first component benefited from a clear and concrete goal of strengthening the capacity of the state utility EVN which was timely considering ADB is an important partner. The second component benefited the provincial authorities by building their capacity and exposing them to best practice. In light of this, similar TAs should be undertaken in the future, which are focusing not only at the national level but also the provincial level.

Recommendations and Follow-Up Actions

Taking environmental monitoring and management to the next levels requires further capacity building and institutional strengthening. ADB should consider further support, with TA assistance, to EVN to bring their environmental management to higher performance levels. EVN and DONRE, at the provincial levels, need to ensure that adequate resources are made available to enable these plans serve as a reference for implementing similar environmental management practice at upcoming thermal power projects.

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