

TECHNICAL ASSISTANCE COMPLETION REPORT

Division: RSES

TA No., Country, and Name TA 3583-THA: Mae Moh Environmental Evaluation		Amount Approved: \$500,000	
		Revised Amount: —	
Executing Agency: Electricity Generating Authority of Thailand		TA Amount Undisbursed \$121,698.49	TA Amount Utilized \$378,301.51
Date of Report		TA Completion Date	
Approval: 14 Dec 2000	Signing: 3 April 2001	Fielding of Consultants: 31 May 2001	Original: 31 Dec 2001 Actual: 31 Mar 2002
Description <p>Electricity Generating Authority of Thailand (EGAT) has constructed 13 power-generating units with a total installed capacity of about 2,600 megawatt (MW) at Mae Moh in four phases from 1978 to 1996. Together with the construction of the power plants, EGAT developed the Mae Moh mine to provide the power plants with lignite as the main fuel. ADB has been involved in the Mae Moh power projects for financing several units of the power plant since 1972. The Swiss Government was involved in the power projects as one of the cofinanciers. Even though environmental protection and mitigation measures were taken during the construction of each phase and in operations thereafter, the Mae Moh power station, including the Mae Moh mine, has caused environmental and social problems, in particular, local air pollution causing public health problems. Therefore, several studies to correct and/or improve the situation were carried out, and some remedial measures were subsequently taken.</p> <p>In spite of the environmental and social studies conducted and remedial measures taken, negative perceptions of the Mae Moh power plant and mine persist among the sections of the public, the affected people, NGOs, and the mass media. The Government and EGAT were fully committed to improving the environmental and social situation by implementing further remedial measures to be recommended by a well-qualified team of experts. Therefore, a comprehensive study to help bring about further environmental improvement and transparent public consultation was imperative. The TA was designed to meet this need.</p>			
Objectives and Scope <p>The overriding objective of the TA was to clearly identify and thoroughly analyze the environmental and social problems caused by the Mae Moh power projects, including the development of the Mae Moh mine, and recommend the most effective remedial measures and implementation plan for a fundamental resolution of the problems.</p> <p>The scope of the TA was to include the following activities: (i) review and analysis of the existing environmental reports and records with an emphasis on the prevailing environmental and social concerns; (ii) site visits to the power plants, mining areas, and ash disposal areas; the affected rivers, reservoirs, and ponds; and nearby villages and communities to inspect the prevailing situation and collect information and data; (iii) identification of the problems and compilation of all environmental and social concerns, including socioeconomic consequences and public health concerns; (iv) organization of local and national forums and small focus group meetings; (v) formulation of the most effective remedial measures and costs; (vi) recommendation of the most effective implementation schedule and monitoring plan; and (vii) translation of the major reports into the Thai language before they are made available for the public.</p>			
Evaluation of Inputs <p>A consulting team (TA Consultant) consisting of 11 person-months and 9 person-months of international and local consultants respectively carried out the study in close consultation with EGAT, the Executing Agency of the TA. Four international consultants with expertise in power plant environmental management, environment engineering, power engineering, and environmental economics were involved in analyzing the environmental and social issues at the plant and mine sites, and recommending remedial measures. Three local consultants with expertise in water biology, lignite mining operation, and public participation were actively involved in helping the international experts to complete the work included in the scope under the TA.</p> <p>They conducted their assignments professionally and effectively. The seven experts worked under the overall control of the Project Director who has been involved in similar projects. His coordination role was very effective.</p> <p>The result of a Public Health Study conducted by Chulalongkorn University team under EGAT financing was partly used by the TA Consultant in the preparation of the reports as originally conceived. The local consultation meeting and the national forum, which were held in Mae Moh in December 2001 and in Bangkok in January 2002, respectively, proceeded smoothly and were successful in disseminating the preliminary and final findings of the</p>			

study and also in getting useful feedback from the concerned. A video on the Mae Moh Environmental and Social Situation was produced under the TA project.

Evaluation of Outputs

The TA Consultant submitted inception, midterm, and draft final reports, which were generally in order. EGAT and ADB made detailed and constructive comments on the reports, and the comments were largely reflected in the final versions. The final report was submitted in April 2002 and was of good quality. During implementation of the TA, substantial measures to improve environmental and social problems such as the commissioning of the flue gas desulfurization (FGD) facilities and the introduction of ISO14000 have been undertaken. Particularly after the full commissioning of the FGD, the level of sulfur dioxide has reduced to meet national standards. The relationship between EGAT and the villages affected has been improved. These improvements and satisfactory development are considered partly due to the initiatives driven under the TA. The recommended remedial measures in the final report should be seriously considered for implementation by EGAT to further improve the environmental and social situations in the Mae Moh area in order to reduce complaints by local communities. The video produced under the TA was effectively used at the National Forum, and will be used by EGAT in the future as necessary. The Thai language reports prepared under the TA are expected to be helpful in pursuing the environmental and social concerns more effectively.

Overall Assessment and Rating

The overall assessment of the TA is generally successful, as the original objective of the TA has been generally met. However, compared with the scope of the TA, the originally planned input of about 20 person-months, in retrospect, appeared to be on the low side to handle the large scope of the TA. If more experts had been involved, more comprehensive study could have been conducted. Nevertheless, the study covered the wide range of scope and was successful in presenting the whole picture of the environmental and social issues to the public and the parties concerned. ADB fielded missions during the TA implementation whenever essential, and the inputs of the missions were found useful for timely and effective implementation of the TA.

Major Lessons Learned

The standard cost estimates for consultants used in the TA paper for 20 person-months were higher than rates negotiated during the contract negotiations. This resulted in large costs savings, however, the original estimate of numbers of experts and person-months is considered too low. More flexibility in adjusting person-months of the experts during the contract negotiations should be given. Two forums, one each at local level and national level, were very effective and useful for getting feedback from the parties concerned. Inclusion of such public forums in this type of TA should be encouraged.

Recommendations and Follow-Up Actions

The implementation of the recommended remedial measures should be closely followed up. In similar thermal power projects to be financed by ADB, environmental and social issues on the EGAT Mae Moh power and mining project could be referred during appraisal and construction stages with a view of avoiding the complex issues which may be encountered during operation stage as in the Mae Moh case.

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