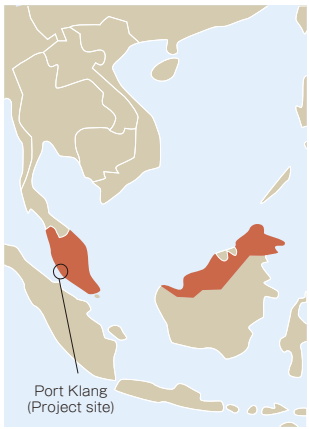
External Evaluator: Taro Tsubogo

Overall Rating **A**

A Foundation for Sustained Growth



12 Malaysia

Port Klang Power Station Project (Phase 3 /Phase 3-Stage2)

Contributed to Malaysia's economic development by supplying electricity to Peninsular Malaysia, where there is a buildup of Malaysian industry.

Loan Amount/Disbursed Amount	71.921 billion Yen /54.794 billion Yen
Loan Agreement	May 1992, September 1993
Terms & Conditions	Interest rate of 3.0%, Repayment period 25 year (grace period 7 years), General untied
Final Disbursement Date	December 2000, January 2001
Executing Agency	Tenaga Nasional Berhad (http://www.tnb.com.my)

* This project was jointly evaluated with Tenaga Nasional Berhad and the Economic Planning Unit of the Prime Minister's Department.

Project Objectives

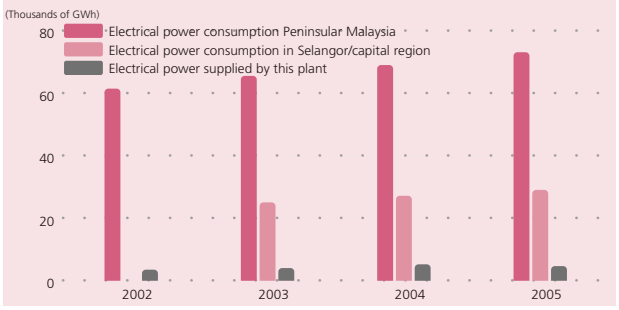
The objective of this project was to meet electrical power demand in Peninsular Malaysia and provide a stable supply of electricity through the construction of a thermal power plant adjacent to existing power plants (stage 1 and stage 2) in the Port Klang area on the outskirts of Kuala Lumpur, and thereby contribute to Malaysia's economic growth through infrastructure development and a reduction in oil dependence.

Effectiveness & Impact

Rating **a**

The electrical power produced at the power plant constructed through this project is distributed to all of Peninsular Malaysia. During the initial commercial operation phase of the power plant, the availability factor, energy generation, and the plant load factor stayed at low levels due to unexpected machinery trouble and the time required for corresponding to it. Recently, the plant performance has become stable. Actual performance of the plant in 2005 (average for the Unit No. 5 and No. 6)was; the availability factor of 76.0%, energy generation of 2,458 GWh, and the gross thermal efficiency of 35%. The plant load factor stayed at a little over 65% due to adjustment of supply and demand by the executing agency. It has been confirmed that the power plant secured a maximum output of 468–500 MW since the start of commercial operation of both units. Electrical power consumption in Peninsular Malaysia has increased an average of 6% per year since 2001. The electricity supplied by this power plant accounts for about 6–7% of consumption in Peninsular Malaysia, and is therefore judged to be contributing to the stable supply of electrical power. Moreover, the power plant is contributing to achievement of the fuel diversification strategy designed to ease fuel dependence on oil alone, since it uses mainly coal as a fuel. Therefore, this project has largely achieved its objectives, and effectiveness is highly satisfactory.

Electrical power consumption in Peninsular Malaysia and electrical power supplied by this plant (performance)



Relevance

Rating **a**

This project has been highly relevant with Malaysia's national policies both at the time of the appraisal and at the time of the ex-post evaluation. This project was planned based on the Sixth Malaysia Plan and the fuel diversification strategy. At the time of the ex-post evaluation, diversification of energy sources and effective utilization of energy were emphasized in the Mid-Term Review of the Eighth Malaysia Plan and again in the fuel diversification strategy.

Efficiency

Rating **b**

The project cost was lower than planned (53% of planned amount), but the project period was much longer than planned (177% of planned time) ; therefore the evaluation for efficiency is moderate. The main factors behind the project delays included machine troubles occurred with the boilers, turbines, and other machinery between the start of the trial run and the start of commercial operation, and the time required to correspond to the troubles.

Sustainability

Rating **a**

No major problem has been observed for capacity of the executing agency or the operation or its maintenance system, therefore, sustainability of this project is high. There has continued to be appropriate technology transfer after the operating body changed, and the executing agency has secured a regular amount of net profit every year.

Third-Party Opinion

Lessons learned include project delays caused by an inefficient work process and project supervision. It would be desirable to perform a comparative examination of the indicators established when implementing this project against similar projects undertaken by other companies in the future.

Specialist: Dr. Arunaselam Rasappan (academia)
Currently President of the Malaysian Evaluation Society. Specializes in the public project management and performance evaluation.