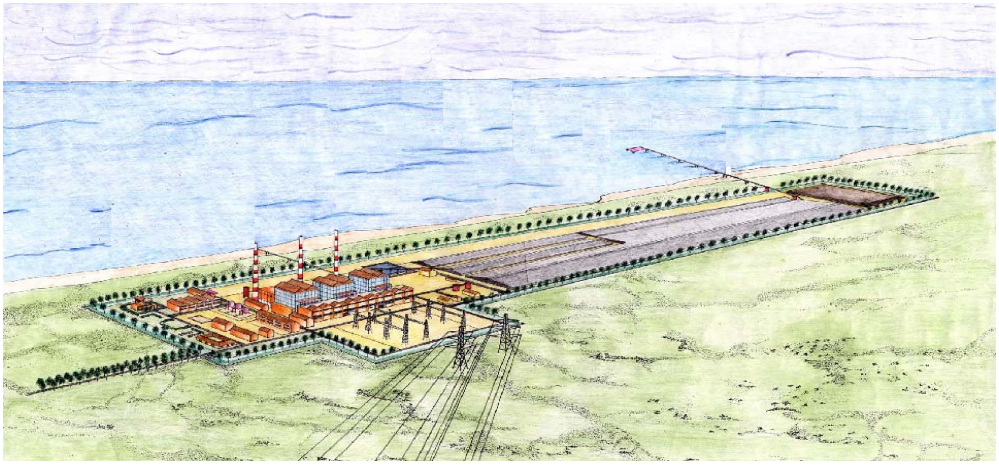
PROJECT REVIEW REPORT

NOROCHCHOLAI COAL POWER PLANT PROJECT

By

Infrastructure Unit
Department of Foreign Aid and Budget Monitoring
Ministry of Plan Implementation



Senior Project Director: Mr. T.M. Herath - Tel. 011-2698193
Project Engineer: Mr. Culani Perera – Tel. 071-4298147

Visit Date: 27th July 2006

The Team Visited the Project:

Mr. V. Sivagnasothy - Director
Mrs. Harriet Fernando – Deputy Director
Mrs. L.G. Priyanthi De Silva - Development Officer
Mr. Saman Chandrsekara - Development Officer
Miss Thusara Dharmasena - Development Assistant
Mrs. W. H. Indrani - Plan Implementation Officer

FIELD VISIT TO NOROCHCHOLAI COAL POWER PLANT PROJECT

Officials Attended:

Mr. V. Sivagnasothy
Director
Infrastructure Unit

Mrs. Harriet Fernando
Deputy Director
Infrastructure Unit

Mrs. L.G. Priyanthi De Silva
Development Officer
Infrastructure Unit

Mr. Saman Chandrsekara
Development Officer
Infrastructure Unit

Miss Thusara Dharmasena
Development Assistant
Infrastructure Unit

Mrs. W.H. Indrani
Plan Implementation Officer
Infrastructure Unit

Forward and Acknowledgement

The Department of Foreign Aid and Budget Monitoring is responsible for monitoring and evaluating nationally important development projects and programmes .

The Norochcholai Coal Power Plant Project is a lead project of the government to enhance economic growth, poverty reduction and ensure balanced regional development through cost effective power sector development. The successful completion of this project will enhance the capacity of the national grid of Sri Lanka. Therefore the smooth and timely implementation of this project is an immediate national need.

The Department of Foreign Aid and Budget Monitoring undertakes monitoring of this project through the web-based
eProject Monitoring System. Moreover, it was decided to conduct and in-depth evaluation of the project. Given the time and resource constraint the Department decided to undertake Project Review as a substitute for evaluation.

The review helped to identify key issues that affect the implementation of the project and identify actions to ensure the smooth take off of the project.

The Infrastructure unit staff undertook this project review and matters of concern were discussed with the Project Director, Project Engineers, Secretary, Ministry of Power and Energy and at higher level progress review forums.

This Review Report will be attached to the ePMS and made available to the concerned stakeholders.

I appreciate the team members for the good work done through more effective inspection, discussion and Review Report.

V. Sivagnanasothy
Director
Department of Foreign Aid and Budget Monitoring
Ministry of Plan Implementation

Introduction of the Project:

Name of Project: **Norochcholai Coal Power Plant**

Project Goals: **Construction of a 300 MW Coal Fired. Thermal Power Plant, with Infrastructure for a 900 MW Power Plant.**

Project Purpose: **To cater for the Increasing demand of Electricity from the year 2010.**

Project Output: **1658 Gwh of Annual Energy at Distribution level for delivery to consumes.**

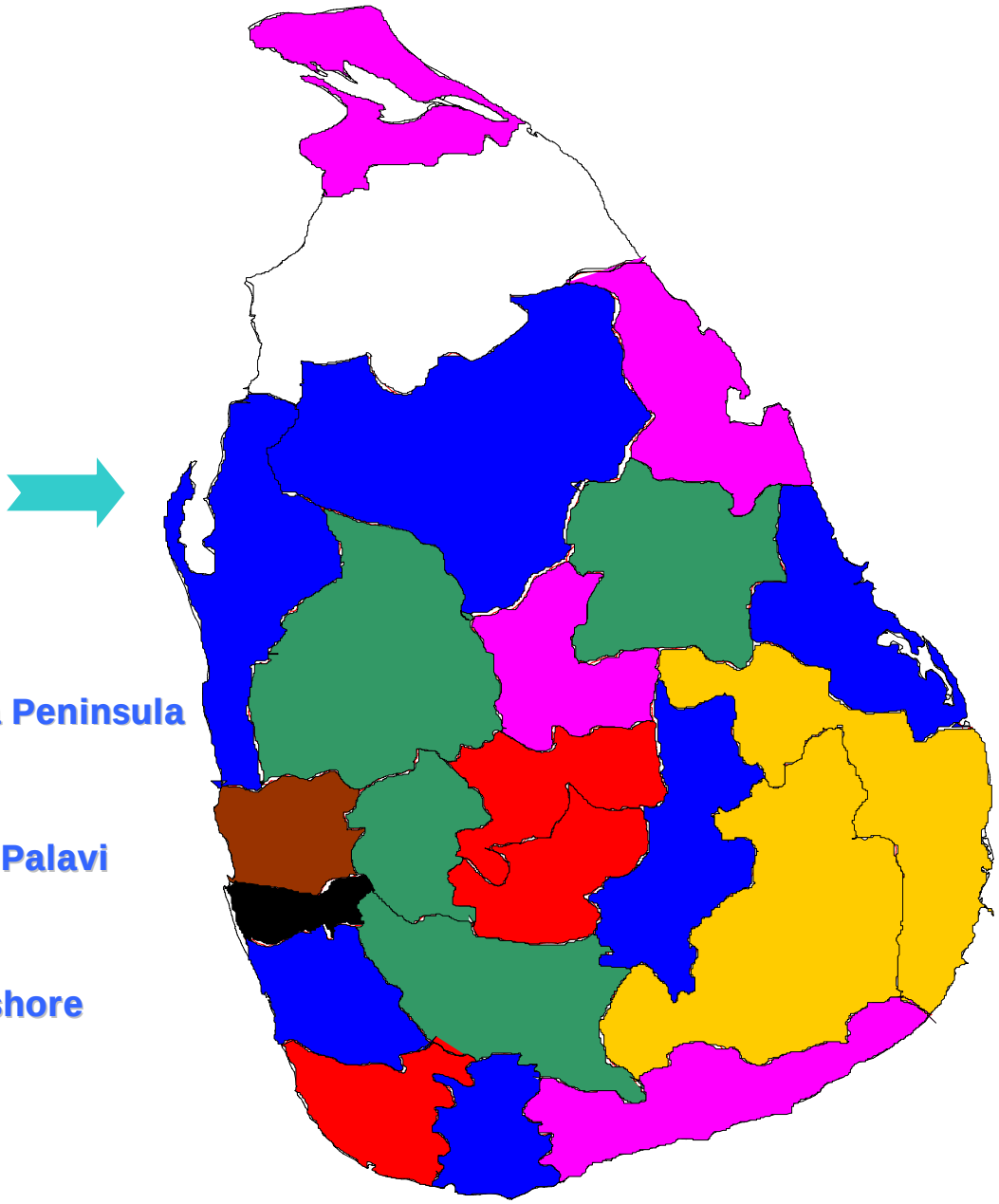
Total Estimate Cost: US$ 455Mn

Implementation Agency:

- **Development of Access Roads to Plant Site - CEB/RDA**
- **Electricity Supply to Power Station Site for Construction - CEB**
- **Housing Construction for Resettlement - CEB**
- **Design construction of the Power Plant & Infrastructure - CEB**

Donor: EXIM Bank - China

Location:



- At Kalpitiya Peninsula
- 14km from Palavi
- At the sea shore

Background

- **Current installed capacity is 2544 MW (Hydro + Thermal)**

Energy use 63% is thermal (oil based) and 37% hydro

- **Demand for electricity increases by about 10% annually**

(Demand/ Supply gap need to be filled)

- **Why Coal? Avenue to expand and enhance the national grid. It is most economical and feasible power supply next to hydro. (Hydro dependability is threatened by Drought and silted. Thermal is an expensive source). Coal is cheaper and most widely available.**

- **Electricity cost in Sri Lanka is high in Asia Region (All users paying high cost for industrial, commercial and domestic uses and driving away the investors). Average electricity tariff rates to industrial sector in US Cents in Sri Lanka 7.00 - 7.50; Indonesia 1.52 – 3.90; Malaysia 2.63 – 10.52; Singapore 4.32 – 6.78; Thailand 2.89 – 7.01. (CBSL, 2004)**

- **Hydro cost is Rs 3.50/unit whereas thermal cost is Rs 10.50/ Unit.**

- **High cost is attributed to countries energy requirement is met with more Thermal (diesel- run) power (63%) than Hydro and system losses.**

Implications of high cost

- Unreliable Power Supply affects – the economy, production stoppages, job losses, loss of competitiveness, drives away foreign investments, GDP and BOP.
- CEB loosing Rs. 45 million per day

Average Unit cost	Rs 11 per Unit
Average selling price	Rs 8 per Unit
Loss per unit	Rs 3 per Unit

Average daily consumption 15 million units X Rs 3 per unit = Rs 45 million loss per day.

Project Purpose

- **First Coal Power Plant in Puttalam, initially 300 MW with an ultimate capacity of 900 MW when it is fully developed.**
- **Steady and Low cost electricity supply to the national grid. It will reduce the unit cost from the present level of Rs 11 per unit to Rs 5 per Unit.**

Cost and Financing

- **Government of China has granted a soft loan amounting US $ 300 million for implementing the project.**
- **The Chinese have agreed to carryout the project on a Design, Build and Transfer (DBT) basis. Cost US$ 455 m**
- **Balance US$ 155 m is being negotiated on commercial terms as supplier's credit.**
- **Contract has been signed in March 2006 with China National Machinery and Equipment Import and Export Corporation (CMEC).**
- **JBIC funded the feasibility study, Detailed Design and EIA**

Feasibility Study

- Pre Feasibility - 1993
- Feasibility - 1996 ~ 2000
  - EIA Study
  - Engineering Design
  - Preparation of Tender Document
- EIA Approved - 1999

- Project Suspended - Cabinet Decision 2000

Key Outputs and Activities

- **Building 4.2 km or 500 meter Jetty**
- **Boiler**
- **Steam Turbine**
- **Handling and Storage facility**
- **220 kv transmission line covering 115 km to connect to Veyangoda existing Grid Substation (connect to National Grid)**
- Project duration 54 months (2010)

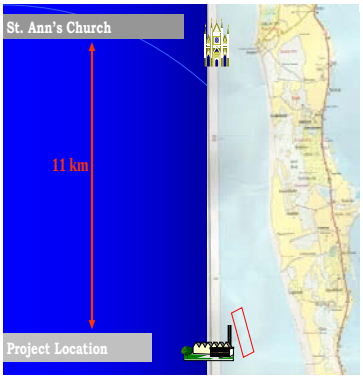
Operation

- **Unloading coal from ships in the mid-ocean into barges**
- **Brought to site through conveyor belt.**
- **Maintain 6 months stockpile**
- **Water will be from sea – desalinated will be used for the plant.**
- **DBT contract end in 2010 and O&M with CEB.**

From Barges to Coal Yard

Site Location

- **Narakaliya 2 km from Norochcholai Town**
  - **Norochcholai is a Costal Village**
  - **15 Km of West of Puttalam Town and 120 km from Colombo**
  - **Residence – Mixed (Roman Catholics and Muslims)**
  - **Livelihood - Farming and Fishing**
  - **Project area 470 meters X 1980 meters**



The Construction of Norochcholai Coal Power Plant was inaugurated by the Hon. President Mahinda Rajapaksa on 11th May 2006.

Eviction and Resettlement

- **80 Families being evicted from their land**
- **Relocation site in Daluwa (about 14 km from project site)**
- **CEB says they are mostly illegal settlers (Temporary huts) and will be better –off**
- **Each family promised with**
  - **20 perch block, 500 square feet house with 2 bed rooms, one living room, kitchen, Toilet and Drinking water well (Cost/Unit Rs 830,000) Community hall.**
  - **300 perch land for agriculture - farming families) (Fisherman will get fishing Gear, Bicycle etc)**

- **80 housing units divided into - 10 lots with each 8 housing units. Of this 10 lots, 7 lots (56 housing units) has been awarded SAPCO Construction Pvt. Ltd (Local Firm). Land Acquired and Foundation has been constructed. Electricity work in progress. Access Road to be widened.**
  (Housing to be completed in 4 months time)

- **A section of the community is opposing – A police post has been set-up near the beech site of the coal plant.**

Environmental Issues and Fears

- **The establishment of power plant and jetty will cause sea erosion near Talawila Church**
- **Emission of gases such as Sulfur dioxide (SO_2) contributes to Acid rain. (agriculture)**
- **Discharge of warm water to sea increases the temperature in the sea water and chasing away the marine life while harming the breeding. (Coastal fishing)**
- **Emission of green house gases CO_2 and CO are associated with Global warming. (Negligible)**

- **Fly ash and Coal Dust (Problems to Ground water, human health (respiratory) and plant/ aquatic life)**
- **Three sites – Trincomallee, Hambantota, Puttalam**
- **Lot of Tree cutting – dry the area – affect water table.**
- **Sleep lost with Boiler Noise.**
- **Opposition also comes from smugglers.**

Mitigatory measures

- **Studies have confirmed that the effects are marginal and insignificant and mitigatory measures have been included.**
- **Technology to remove SO2 and the use of low sulfurs containing coal (Indonesia)**
- **Smoke Emission will be released from 150 meter tall chimneys.**
- **Remove Fly ash and use in Cement, Bricks and Road Construction.**
- **Suppress Coal Dust by spraying water. Plant trees around the site.**

Conclusion and Recommendations

- **Countries such as India have gone to extent of using Nuclear power that causes environmental disaster.**

- **Clean coal power technology is recommended which will increase the attractiveness of coal as a source of power generation and ensure sustainability.**