

**INTEGRATED SAFEGUARDS DATASHEET
APPRAISAL STAGE**

I. Basic Information

Date prepared/updated: 12/04/2008

Report No.: AC2514

1. Basic Project Data

Country: India	Project ID: P100101	
Project Name: Coal Fired Generation Rehabilitation Project		
Task Team Leader: Mikul Bhatia		
GEF Focal Area: C-Climate change	Global Supplemental ID: P100531	
Estimated Appraisal Date: November 24, 2008	Estimated Board Date: March 31, 2009	
Managing Unit: SASDE	Lending Instrument: Specific Investment Loan	
Sector: Power (100%)		
Theme: Infrastructure services for private sector development (P);Regulation and competition policy (S)		
IBRD Amount (US\$m.):	180.00	
IDA Amount (US\$m.):	0.00	
GEF Amount (US\$m.):	45.60	
PCF Amount (US\$m.):	0.00	
Other financing amounts by source:		
<u>BORROWER/RECIPIENT</u>		27.50
		27.50
Environmental Category: B - Partial Assessment		
Simplified Processing	Simple <input type="checkbox"/>	Repeater <input type="checkbox"/>
Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

2. Project Objectives

The objective of the project is to improve energy efficiency and environmental performance of selected coal-fired power generation units through renovation and modernization (R&M) and improved operations and maintenance (O&M).

The global environmental objective of the project is the reduction of greenhouse gas emissions through energy efficient rehabilitation of coal-fired power plants.

3. Project Description

The project will have the following components: (i) Energy Efficiency R&M Pilots (US\$295.9 million) and (ii) Technical Assistance (US\$7.5 million).

Component 1: Energy Efficiency R&M Pilots (US\$295.9 million). This component would renovate and modernize about 640 MW (three to four generation units) of old coal-fired generation capacity to test and demonstrate energy efficient rehabilitation approaches. Energy efficient R&M of generation units would go beyond the typical

Indian practice - of restoring original generation capacity, life-extension, and improving availability - by also modifying (or replacing) some equipment and systems to enable the unit to operate with higher fuel efficiency.

The Bank and GOI have agreed to focus on 110 MW and 210 MW units which are in urgent need for R&M in India and constitute about 68% of the 27,000 MW identified for R&M. The following generation units have been initially selected for participation in the pilot project:

- Unit-5, Bandel Thermal Power Plant, West Bengal (210 MW)
- Unit-6, Koradi Thermal Power Plant, Maharashtra (210 MW)
- Units-3 & 4, Panipat Thermal Power Plant, Haryana (110 MW each)

Component 2: Technical Assistance (US\$7.5 million). The technical assistance component of the project is aimed at facilitating replication of EE R&M approaches through support for successful implementation of pilot R&Ms, mitigation of barriers, support for additional design studies and dissemination of lessons learned from demonstration R&Ms. It would also facilitate strengthening of institutional capacity of the concerned generation utilities for improved operation and maintenance practices and better monitoring and evaluation of plant performance. This component would support preparation of EE R&M for an additional five or six old 110 MW / 210 MW units.

4. Project Location and salient physical characteristics relevant to the safeguard analysis

The generating plants considered under the project and the physical characteristics are as under:

- a) Koradi Thermal Power Station (KTPS)--is located at 18 KM distance to Nagpur city in Maharashtra. The plant location can be characterized as semi-rural with agriculture as predominant land use.
- b) Bandel Thermal Power Station (BTPS)--is located in the Hooghly district of West Bengal. The area can be classified as semi-rural with surrounding rural land use. The plant is in the proximity of Hoogly River.
- c) Panipat Thermal Power Station (PTPS)--is located in Khukhrana Village, about 8 km west of Panipat City in Haryana. The plant is located in an area with mixed land use comprising agriculture and industrial activity.

5. Environmental and Social Safeguards Specialists

Mr Sita Ramakrishna Addepalli (SASDI)

Mr Parthapriya Ghosh (SASDI)

6. Safeguard Policies Triggered	Yes	No
Environmental Assessment (OP/BP 4.01)	X	
Natural Habitats (OP/BP 4.04)		X
Forests (OP/BP 4.36)		X
Pest Management (OP 4.09)		X
Physical Cultural Resources (OP/BP 4.11)		X
Indigenous Peoples (OP/BP 4.10)		X
Involuntary Resettlement (OP/BP 4.12)		X
Safety of Dams (OP/BP 4.37)		X
Projects on International Waterways (OP/BP 7.50)	X	
Projects in Disputed Areas (OP/BP 7.60)		X

II. Key Safeguard Policy Issues and Their Management

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts: Environmental Assessment OP/BP 4.01: No significant adverse environmental impacts are expected under the Project. Indeed, the Project will result in significant positive environmental benefits, in terms of improved energy efficiency, reduced local and global air pollutants (reduced emission intensity in terms of CO₂ released per kWh of electricity generated), which will be measured and quantified during the project. Hence the environmental safeguard category of the project is 'B'. The plant level environmental issues and the unit level environmental issues in case of BTPS and KTPS are assessed through an Environmental Audit and Due Diligence (EADD) which also brings out Environmental Management Action Plans (EMAP) for addressing the environmental issues related to the specific units under consideration for R&M as well as overall plant level environmental performance, including investment requirements to improve environmental performance. The EADD study has been completed for Bandel and Koradi power plants. Since R&M in Panipat is phased out by over a year compared to the other two plants, the EADD study for the plant would be completed by June 2009.

Projects on International Waterways (OP/BP 7.50): Bandel power project is located adjacent to river Hooghly which is about 80 kms downstream of Farakka barrage. Farakka barrage bifurcates the river Ganges into two streams - one going to Bangladesh and the other flowing in India by the name Hooghly. BTPS uses water from river Hooghly which is an international waterway as described in Para 1 of OP 7.50. Hence, OP 7.50 is triggered for this project.

BTPS draws water from river Hoogly for cooling water requirements. Hooghly River is part of Ganga basin which extends to Bangladesh. River Ganga branches in to two streams at Farakka Barrage, 80km upstream of BTPS. One of the branches flows in to Bangladesh and the other flows in India as river Hooghly. Since BTPS uses water from river Hooghly which is an international waterways as described in Para 1 of OP 7.50, OP 7.50 is triggered.

The Ganges River Basin extends to Nepal much upstream of Farakka barrage, and some of its tributaries originate in China. India has signed formal agreements with Nepal on international rights and obligations regarding two tributaries of Ganga/Ganges, located upstream of Farakka: (i) River Kosi (Kosi River Agreement on April 25, 1954, revised in 1966), and (ii) River Gandaki (Gandaki River Agreement on December 4, 1959). These agreements relate to construction of barrage projects in Nepalese territory on respective rivers with specified rights and obligations of both parties on issues like provision of land, sharing of power, irrigation water, etc. The agreements do not impose any restrictions on consumptive use on water discharges in Indian side.

There is no agreement between the littoral states of the Bay of Bengal (India, Bangladesh and Myanmar).

It is noted, however, that paragraph 7 of OP 7.50 provides for an exception to external notification to other riparians “For any ongoing schemes, projects involving additions or alterations that require rehabilitation, construction, or other changes that in the judgment of the Bank (i) will not adversely change the quality or quantity of water flows to the other riparians; and (ii) will not be adversely affected by the other riparians’ possible water use.”

Bank management has approved the applicability of the exception to external notification to other riparians for this project for the following reasons:

(a) The project would not adversely affect the quality or quantity of the water flows to other riparians, because:

(i) The quantity of water required by the project after rehabilitation is estimated to remain below the originally sanctioned quantity of 1.7 Mil m³/day for BTPS.

(ii) Most of the above water (>99%) is discharged back into the river after using for “once through” cooling purposes. The same pattern would be maintained after rehabilitation. Thus, from the above points (i) and (ii), the water flows to other riparians will not be affected.

(iii) The temperature difference between inlet and discharge water mixing with river Hooghly (the key water quality parameter relevant here) would continue to be maintained below 3 degrees Celsius, complying with World Bank Guideline as well as West Bengal Pollution Control Board Guidelines, both before and after rehabilitation of Unit-5.

(b) The proposed rehabilitation works are mainly aimed at improving the energy efficiency (coal consumption per kilo-watt-hour of power generation) of the selected unit, and restoring the performance of the plant (capacity, availability etc) to close to original design parameters through renovation and modernization efforts. There are no major alternations or change in the nature or scope of the plant envisaged

Involuntary Resettlement OP/BP 4.12: The Project will not result in any loss of immovable assets and is anticipated to have very limited adverse social impacts. The renovations will be carried out at the existing power plant locations and therefore there will be no land acquisition and displacement. Hence, the OP/BP 4.12 is not triggered. However, there have been reports of adverse health impacts on the community and crop losses due to the power station's operations in the past.

Indigenous Peoples OP/BP 4.10: Though the Rapid Social Assessment (RSA) has identified tribal households, none of them were found to have any distinct identities and cultures. All the tribal households have assimilated themselves with the local non tribal community and hence OP 4.10 is not triggered.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

Though Rapid Social Assessment brought perceived negative impact on the health of the community and occasional crop damage, the proposed project intervention is expected to result in positive impacts at unit level as well as plant level in terms of improved energy efficiency, reduced local and global air pollutants and reduction in negative impact on the health. Negative direct and/or long term impacts are not anticipated.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

In the context of the proposed R&M project, the project alternatives are in respect of selection of plants and choice of units within the plant for R&M activities. These alternatives are assessed considering technical, environmental, and social aspects prior to selection of plants.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described. Currently all the three plants considered under the proposed project follows the GoI as well as respective state Pollution Control Board's regulations and standards. All the plants have basic institutional functions defined to address Environment, Health, and Safety (EHS) aspects. However, there are many areas of possible improvements in EHS. Specific measures to address these issues have been identified and agreed with BTPS and KTPS in the form of: (a) measures that are included as a part of R&M activities; and (b) measures that need to be implemented by the respective plants in the form of a time bound action plan. To improve relations between the thermal power stations and the neighboring community, the entities are in the process of preparing the Corporate Social Responsibility (CSR) Policy which will also include the institutional mechanism for implementation. In case of PTPS, the EADD and CSR are likely to be completed by June, 2009, as the R&M intervention in PTPS is phased out by about a year.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people. As part of EADD, consultations with the stakeholders at BTPS and KTPS have been completed. The consultations revealed that there were issues related to crop damages at KTPS due to fly ash slurry leakages and pipe bursts. However, the stakeholders confirmed timely action by KTPS management with relevant compensation and appropriate measure ensure to minimize such events. In case of BTPS, the raw sewage from the plant is currently being used by the nearby farmers. The farmers pointed out that the STP under construction shall be operationalized in way that the treated effluent shall be made available for cultivation. In case of PTPS, the nearby communities expressed that the air and water pollution is impacting health and agricultural activities. These issues are documented as part of Bank's internal environmental due diligence and social assessment. The scope of proposed EADD for PTPS includes consultations with the stakeholders to assess the type of issues and preparation of necessary mitigation measures. The EADDs for BTPS and KTPS are finalized and accepted by the respective managements. In country disclosure of EADD by KTPS, including disclosure at their head office and at the power plant has been completed. BTPS will be shortly disclose the EADD. The final EADDs will also be disclosed in Bank's InfoShop shortly.

B. Disclosure Requirements Date

Environmental Assessment/Audit/Management Plan/Other:

Was the document disclosed prior to appraisal?	Yes
Date of receipt by the Bank	11/07/2008
Date of "in-country" disclosure	11/18/2008
Date of submission to InfoShop	12/03/2008
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	

Resettlement Action Plan/Framework/Policy Process:

Was the document disclosed prior to appraisal?	N/A
Date of receipt by the Bank	
Date of "in-country" disclosure	
Date of submission to InfoShop	

Indigenous Peoples Plan/Planning Framework:

Was the document disclosed prior to appraisal?	
Date of receipt by the Bank	
Date of "in-country" disclosure	
Date of submission to InfoShop	

Pest Management Plan:

Was the document disclosed prior to appraisal?	
Date of receipt by the Bank	
Date of "in-country" disclosure	
Date of submission to InfoShop	

*** If the project triggers the Pest Management and/or Physical Cultural Resources, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.**

If in-country disclosure of any of the above documents is not expected, please explain why:

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)

OP/BP/GP 4.01 - Environment Assessment

Does the project require a stand-alone EA (including EMP) report?	Yes
If yes, then did the Regional Environment Unit or Sector Manager (SM) review and approve the EA report?	Yes
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes

OP 7.50 - Projects on International Waterways

Have the other riparians been notified of the project?	N/A
If the project falls under one of the exceptions to the notification requirement, has this been cleared with the Legal Department, and the memo to the RVP prepared and sent?	Yes
Has the RVP approved such an exception?	Yes

The World Bank Policy on Disclosure of Information

Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes

All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes
Have costs related to safeguard policy measures been included in the project cost?	Yes
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes

D. Approvals

<i>Signed and submitted by:</i>	<i>Name</i>	<i>Date</i>
Task Team Leader:	Mr Mikul Bhatia	11/18/2008
Environmental Specialist:	Mr Sita Ramakrishna Addepalli	11/18/2008
Social Development Specialist	Mr Parthapriya Ghosh	11/18/2008
Additional Environmental and/or Social Development Specialist(s):	Mr Harinath Sesha Appalarajugari	11/18/2008
<i>Approved by:</i>		
Regional Safeguards Coordinator:	Mr Frederick Edmund Brusberg	12/03/2008
Comments: Comments provided in appraisal clearance memo.		
Sector Manager:	Mr Salman Zaheer	12/03/2008
Comments: I agree with Eric's comments on the appraisal clearance memo.		