REPORT NO.: RES30550

DOCUMENT OF THE WORLD BANK

RESTRUCTURING PAPER

ON A

PROPOSED PROJECT RESTRUCTURING

OF

COAL-FIRED GENERATION REHABILITATION

APPROVED ON JUNE 18, 2009

TO

REPUBLIC OF INDIA

ENERGY & EXTRACTIVES

SOUTH ASIA

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## I. BASIC DATA

### Product Information

<table>
<thead>
<tr>
<th>Product Information</th>
<th>Financing Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project ID</td>
<td>P100101</td>
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<tr>
<td>Financing Instrument</td>
<td>Investment Project Financing</td>
</tr>
<tr>
<td>Original EA Category</td>
<td>Partial Assessment (B)</td>
</tr>
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<td>Current EA Category</td>
<td>Partial Assessment (B)</td>
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<tr>
<td>Approval Date</td>
<td>18-Jun-2009</td>
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<td>Current Closing Date</td>
<td>29-Nov-2017</td>
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### Organizations

<table>
<thead>
<tr>
<th>Borrower</th>
<th>Responsible Agency</th>
</tr>
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<tbody>
<tr>
<td>Republic of India</td>
<td>Central Electricity Authority, Haryana Power Generation Corporation Limited, Maharashtra State Power Generation Company Limited, West Bengal Power Development Corporation Limited</td>
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</table>

### Project Development Objective (PDO)

**Original PDO**

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

### Summary Status of Financing

<table>
<thead>
<tr>
<th>Ln/Cr/Tf</th>
<th>Approval</th>
<th>Signing</th>
<th>Effectiveness</th>
<th>Closing</th>
<th>Net Commitment</th>
<th>Disbursed</th>
<th>Undisbursed</th>
</tr>
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</table>
Policy Waiver(s)

Does this restructuring trigger the need for any policy waiver(s)?

No

II. SUMMARY OF PROJECT STATUS AND PROPOSED CHANGES

PROJECT STATUS:
A formal request to restructure the project was received by the Bank from DEA through its letter dated November 13, 2017.

Project Status:
As on November 24, 2017 around 49% GEF grant and around 62% of IBRD funds have been disbursed. Kindly refer the section on ‘Project Background’ below for the details on the project components as well as history of the project. Following is the status update on the project components:

- Bandel TPS Unit-5, of WBPDCL, West Bengal: The unit was synchronized in October 2015, and the commercial operation started in November 2015. Since November 2015, the Unit has been generating at its full capacity during peak hours (evening) including at up to 213-215 MW levels, according to the WBPDCL.

- Koradi TPS Unit-6 of Mahagenco, Maharashtra: All the packages required for the completion of EE R&M works have been awarded. The current expected date of milestones for EE R&M works at Koradi TPS are as follows: Non-drainable hydraulic test of the boiler has been achieved on November 19, 2017. Synchronization of the unit (that is, commissioning) of the unit is targeted by December 31, 2017. This will be followed by the performance guarantee test. Hence, the proposed project closing date extension till March 29, 2018 will give time to Mahagenco to complete all the pending works after synchronization of the unit. Successful commissioning of this unit is important to achieve project development objective.

- Unit-3 and Unit-4, Panipat TPS, Haryana: After relinquishing the pilot R&M investment funds in 2014, HPGCL continued to partner under this project through TA component (GEF funded) only. After conducting necessary studies on strengthening of operations and maintenance at its thermal power stations, HPGCL through DEA has proposed to utilize the balance available funds (about US$1 million of US$1.8 million) to procure equipment, software, etc.

- Central Electricity Authority (CEA): Three of four consultancies under this TA component (GEF funded) have been completed. The last activity entails international training for the selected staff of CEA but this has been pending for long time and has not been implemented.

Ratings of the Project:
The rating with respect to implementation progress (IP) of the project, as well as towards achievement of the project development objective, is Moderately Satisfactory (MS).

PROPOSED CHANGES:
The World Bank recommends the partial extension of the project by four months (as against the request of 12 months), from November 29, 2017 to March 29, 2018. The partial project closing date extension will be applicable only for the investments (both IBRD and GEF funded) being undertaken in Unit-6 of Koradi TPS (of Mahagenco) and not for
any other project component (that will stand closed after November 29, 2017). Given the short time available with the team between receipt of restructuring request from DEA (November 13, 2017) and current project closing date (November 29, 2017), the team is reviewing the reallocation of GEF grant funds of US$9.84 million to ongoing EE R&M works at Unit-6 of Koradi TPS and will communicate the decision regarding the same at a later date.

Action Plan for Monitoring Koradi R&M works:
The PDO still remains achievable with the proposed loan and grant closing date. The Bank has been and will continue to monitor the progress of the project by conducting site visits on a monthly basis and work continuously with the senior management of Mahagenco to expedite completion of the works. The team will continue to monitor the agreed time-bound action plan on physical as well as financial progress to ensure that the project disburses the remaining funds within the extended loan (and grant) closing period. An implementation support mission will also be conducted by the Bank team to formally record the progress of the works. All the funds under the component proposed to be extended has been committed and there is no pending procurement. There are no outstanding audit reports from Mahagenco.

PROJECT BACKGROUND:
The Coal-Fired Generation Rehabilitation Project for US$180 million of IBRD loan (Loan No. 7687-IN) and US$45.4 million of GEF grant (Grant No. TF 094676-IN) was approved by the Bank’s Board of Executive Directors on June 18, 2009 and became effective on March 19, 2010. While Government of India (GOI) is the borrower for this loan, the four responsible agencies for implementing the project are: WBPDCL in the State of West Bengal, HPGCL in the State of Haryana, MAHAGENCO in the State of Maharashtra and CEA, Ministry of Power, GOI. The loan was to be used for implementing EE R&M pilots at four coal-fired electricity generation units - two of 210 MW (one each at Bandel TPS in West Bengal at Koradi TPS in Maharashtra) and two of 110 MW (both at Panipat TPS in Haryana) - at the three different electric power utilities (WBPDCL, Mahagenco and HPGCL).

Under the first restructuring completed in April 2014, partial cancelation of IBRD funds (of US$43.84 million) that were surrendered by HPGCL was carried out, as HPGCL decided not to proceed with EE R&M works in its two 110 MW Units (at Panipat TPS). This resulted in reducing the IBRD funds available to the project to US$136.16 million. Under the second restructuring completed in September 2014, a part of the IBRD (US$18.01 million) and GEF (US$3.83 million) funds from the withdrawn two 110 MW units (Panipat TPS) was reallocated to one of the remaining two 210 MW units (Bandel TPS). As part of this restructuring, the loan (and grant) closing date was also extended by two years (from November 30, 2014 to November 29, 2016) to accommodate for the delays in EE R&M implementation and works due to technical challenges as well as procurement delays. The third restructuring was carried out in November 2016 to extend the loan (and grant) closing date by one year from November 29, 2016 to November 29, 2017, on request of Mahagenco based on the delays foreseen in the completion of R&M works. The proposed restructuring is the fourth in the series.

Project Development Objective: PDO for this project is to “Improve Energy Efficiency (EE) of selected coal-fired power generation units through renovation and modernization (R&M) and improved O&M”. The PDO remains unchanged. The PDO rating is moderately satisfactory (MS).

Global Environment Objective: GEO for this project is ‘A significant co-benefit of improving EE of the selected coal fired power generation units is the reduction of GHG emissions per kWh of electricity generated’. The GEO remains unchanged.

Project Components: The project has two components (after 1st, 2nd and 3rd restructurings):
• Component 1- EE R&M Pilots (US$174.06 million): This component focuses on EE R&M of old coal-fired power generation capacity to demonstrate energy efficient rehabilitation approaches and had following sub-components:
  o Sub-Component 1: Unit-5, Bandel TPS (BTPS), West Bengal (210 MW)
  o Sub-Component 2: Unit-6, Koradi TPS (KTPS), Maharashtra (210 MW)
  o Sub-Component 3: Units-3&4, Panipat TPS (PTPS), Haryana (2x110 MW each)

Original allocation for this component, as per PAD was US$217.9 million. After the first restructuring where IBRD funds of about US$43.84 million was cancelled. The revised allocation to this component is US$174.06 million of which IBRD funds account for US$136.16 million (reduced from US$180 million originally) and GEF funds account for US$37.90 million (no change since appraisal).

• Component 2 – Technical Assistance (TA) (US$7.5 million GEF): The TA component of the project is aimed at providing support in implementation of EE R&M pilots, developing a pipeline of EE R&M interventions, addressing barriers to EE R&M projects and strengthening institutional capacities of implementing agencies. It has following sub-components:
  o Sub-Component 1: Support for Design of EE R&M
  o Sub-Component 2: Support for Implementation of Pilot EE R&M
  o Sub-Component 3: Support for Addressing Barriers to EE R&M Projects
  o Sub-Component 4: Support for Strengthening Institutional Capacities of Utilities

### III. DETAILED CHANGES

#### LOAN CLOSING DATE(S)

<table>
<thead>
<tr>
<th>Ln/Cr/Tf</th>
<th>Status</th>
<th>Original Closing</th>
<th>Revised Closing(s)</th>
<th>Proposed Closing</th>
<th>Proposed Deadline for Withdrawal Applications</th>
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