TARIFF AND GOVERNANCE ASSESSMENT

A. Tariff Analysis – Assam Power Generating Corporation

1. In its *(Terms and Conditions for Determination of Tariff) Regulations,* the Assam Electricity Regulatory Authority (AERC) notified its jurisdictional authority to regulate the activities of all electricity generating companies operating in Assam. Among other things, the regulations also enunciated the requirement for the tariff (in respect of a generating company) to be determined station-wise and for generating companies to submit separate calculations in respect of each generating station.

2. The Assam Power Generation Corporation (APGC) filed its most recent substantive petition to AERC in January 2013. The petition sought determination of multi-year tariff (MYT), approval of APGC's Annual Revenue Requirement (ARR) for the period FY2014 to FY2016 and determination of generation tariff for FY2014. It subsequently (in March 2013) filed a petition for "truing-up"[1] for FY2012 and for an annual performance review for FY2013. AERC released its order in relation to these petitions in November 2013, citing delays caused by the incompleteness of APGC's documentation.

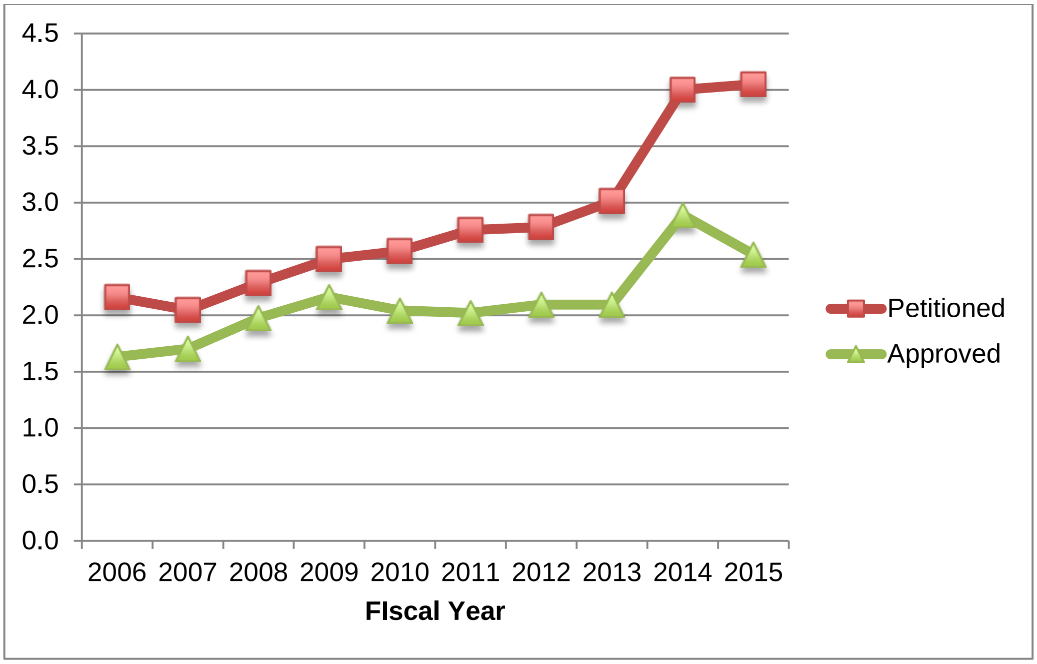
3. As shown in Figure 1 below, AERC has consistently disallowed a proportion of revenue requirements claimed in APGC's tariff petitions. Most significantly, AERC has adjusted APGC's capital base in accordance with relevant regulations, which has resulted in a much lower allowance for interest on long-term debt and return on equity than claimed by APGC. AERC's allowance for depreciation has also been lower than depreciation expenses claimed by APGC as AERC has rejected depreciation claimed on out-of-service fixed assets and has adjusted for capital subsidies and grant finance. AERC has also tended to disallow proposed increases in expenditure that have not been not adequately justified.

4. AERC has been progressively incentivizing improved efficiency of power station operations by reducing allowances for plant auxiliary consumption (electricity used within plants) and by reducing heat rate allowances (the quantity of fuel required per unit of electricity generated). APGC has had limited success in improving the efficiency of operations in its aging plant and has consistently missed the targets set by AERC. This has further reduced its revenue. It is noted that efficiency performance is expected to improve as the proportion of new plant increases (as a proportion of APGC's total generation capacity).

5. Notwithstanding the gap between petitioned and approved tariffs, APGC's financial performance has been characterized by modest net profits and small negative cash flows in recent years (adjusted for fuel price escalation that is recoverable in future years). This is indicative of a tariff-setting regime that is striking an appropriate balance between economic efficiency and financial sustainability.

[1] A "true-up" is the process by which AERC compares audited costs to previously approved costs. Over-or under-recovery of actual costs by APGC and APDC, where adequately justified to AERC, can be recovered in subsequent years' tariffs.

Figure 1: Average Petitioned and Approved Generation Tariffs FY2006-FY2015 (INR/kWh)



Source: APGC tariff petitions and AERC tariff orders.

B. Tariff Analysis – Assam Power Distribution Company[2]

6. The Assam Power Distribution Company (APDC) filed its most recent substantive petition to AERC in January 2013. The petition sought determination of multi-year tariff (MYT), approval of APDC's Annual Revenue Requirement (ARR) for the period FY2014 to FY2016 and determination of distribution tariffs for FY2014.

7. Reflecting India's Electricity Act 2003, the National Tariff Policy 2006 states that tariff design should progressively link to end-use tariffs with costs to serve and that, as an interim measure, state electricity regulatory commissions should notify roadmaps to remove tariff cross-subsidies by moving all tariffs to within 20% of the average cost to serve. Figure 2 demonstrates that the interim measure has largely been achieved by AERC for Assam, with most tariff categories now falling within a band of 80%-120% of the average cost to serve. The most notable exception is the "Jeevandhara" lifeline domestic tariff, which is still below 70% of the average cost to serve. The government of Assam continues to provide a direct subsidy for consumers on the "Jeevandhara" tariff and also for the first four kilowatt-hours (kWh) per day for consumers on the "Domestic A" tariff.

8. A slightly different picture is evident when comparing tariffs to specific costs to serve in each tariff category. Estimated costs to serve each tariff category were most recently reported in APDC's MYT petition for the period FY2014-FY2016, with the low voltage (LV) average cost to serve estimated as 30% higher than the average high voltage (HV) cost to serve (8.88 INR/kWh compared to 6.84 INR/kWh). In contrast, the average LV tariff proposed by APDC was 13% lower than the proposed average HV tariff. Figure 3 demonstrates this economic cross-subsidy

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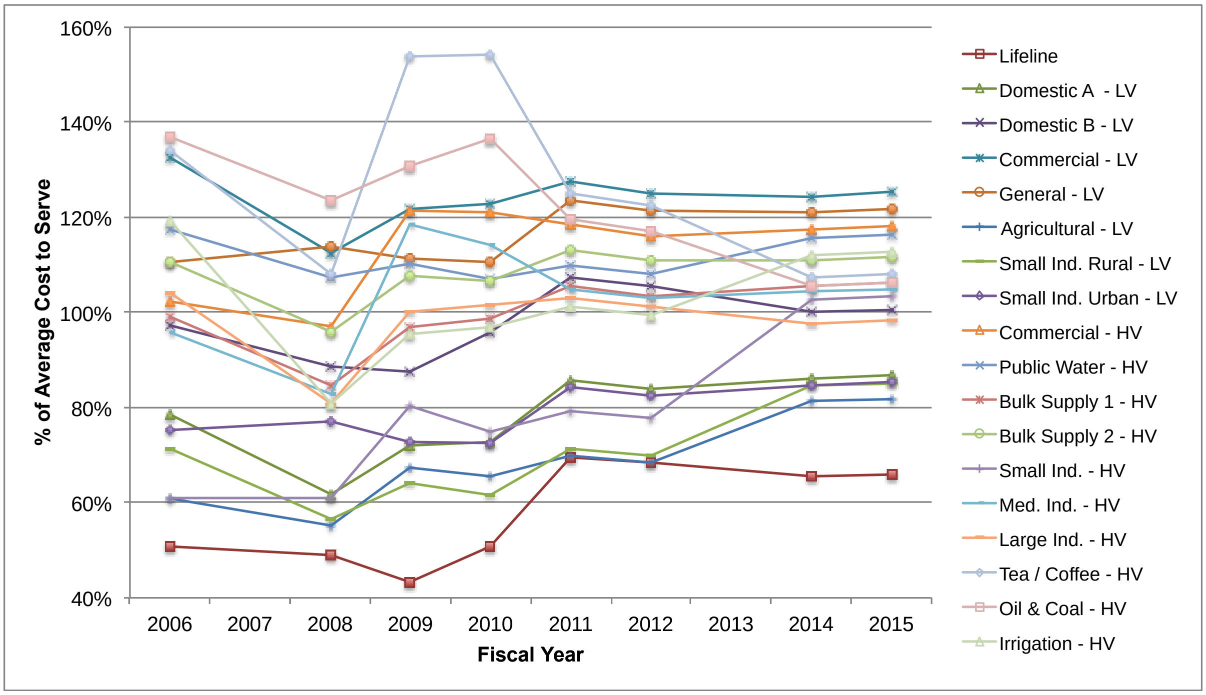
2 Includes analysis of APDC's predecessor companies.

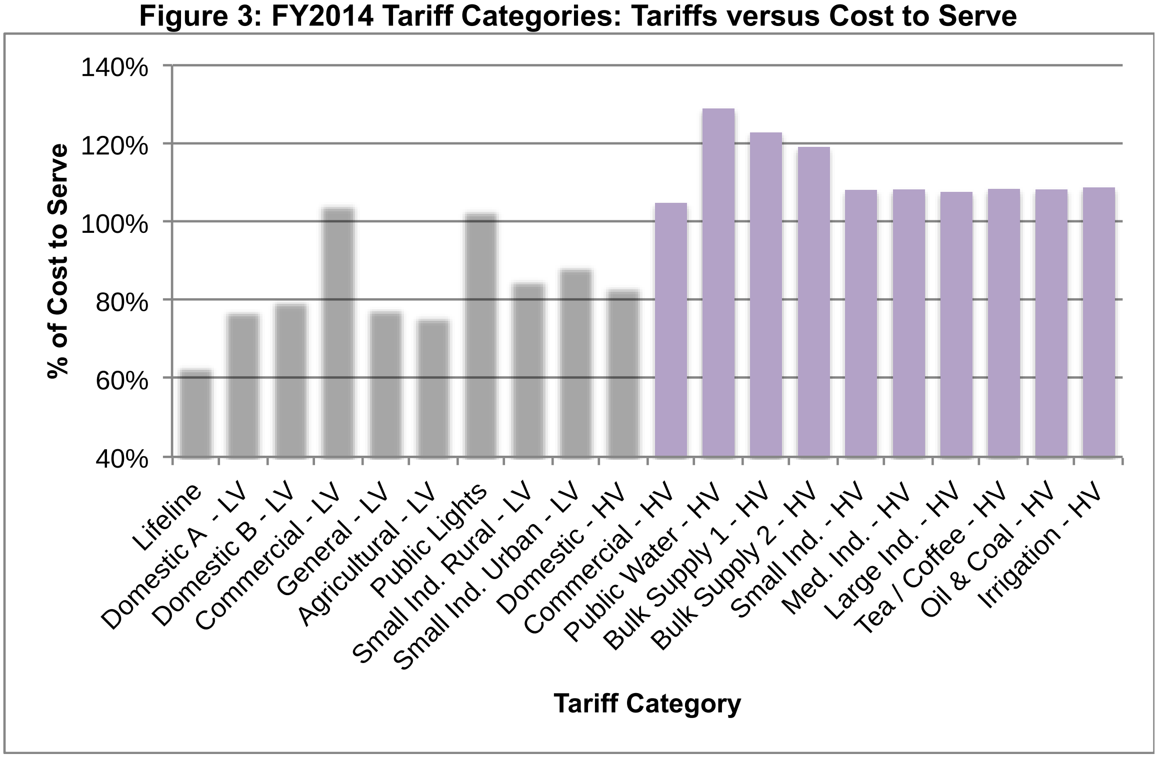
from HV to LV consumers. Further reductions to this class of cross-subsidy remain a challenge for APDC and AERC.

Figure 2: Tariff Trajectories



Source: APDC tariff petitions and AERC tariff orders.

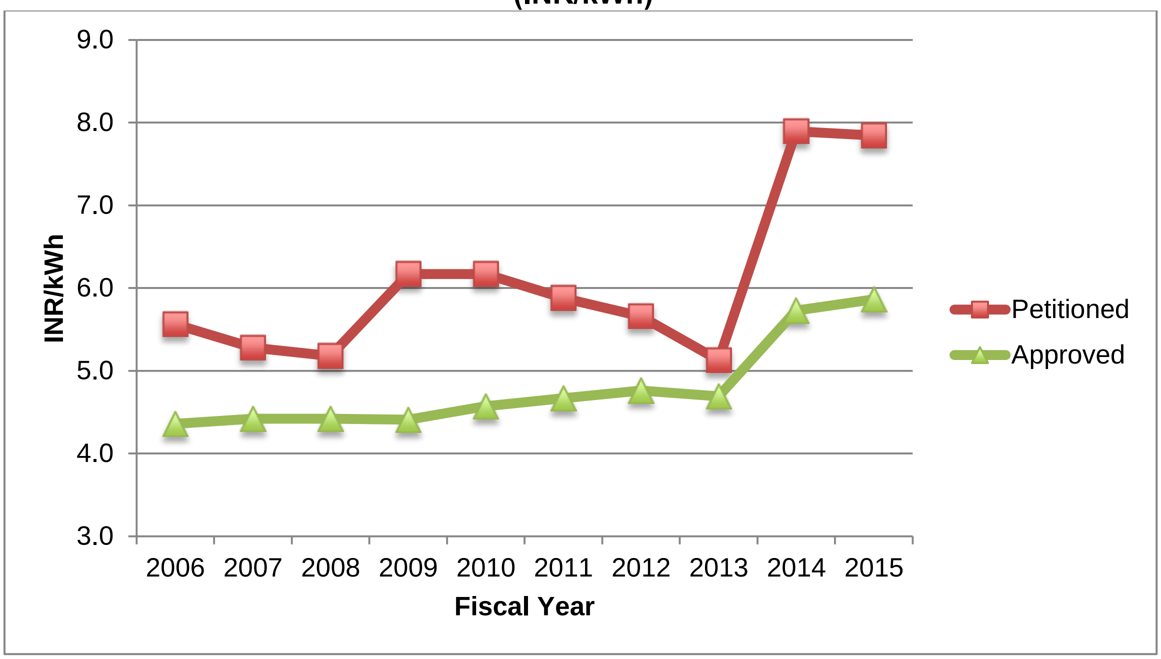
Figure 3: FY2014 Tariff Categories: Tariffs versus Cost to Serve



Source: APDC tariff petitions and AERC tariff orders.

9. AERC has consistently disallowed a proportion of revenue requirements claimed in APDC's tariff petitions (and those of its predecessor companies, the Assam State Electricity Board [ASEB], the Lower Assam Electricity Distribution Company, the Upper Assam Electricity Distribution Company and the Central Assam Electricity Distribution Company), as it has done for APGC. Figure 4 shows the average tariff petitioned by APDC versus the average tariff determined by AERC over the period FY2006–FY2015. In particular, AERC has: disallowed interest on loans where APDC has been unable to provide evidence that matches unsecured borrowings to revenue-generating assets; disallowed interest on the general provident fund (GPF) liability (because no evidence has been provided to AERC of a unique fund or bank account for this liability; and set loss trajectories that APDC has not been able to achieve (discussed further below). There have also been significant delays in the APDC's submission of audited financial statements to AERC to allow AERC to true-up actual costs against allowed costs; this has meant that AERC has used historical cost benchmarks rather than up-to-date ones, which has generally understated true costs. Citing continued poor performance, AERC has also provided APDC with a return-on-equity well below the permissible ceiling of 14% (0% in FY2006, 3% in FY2007, and 7% in FY2008-FY2010).

Figure 4: Average Petitioned and Approved Distribution Tariffs FY2006-FY2015 (INR/kWh)



Source: APDC tariff petitions and AERC tariff orders.

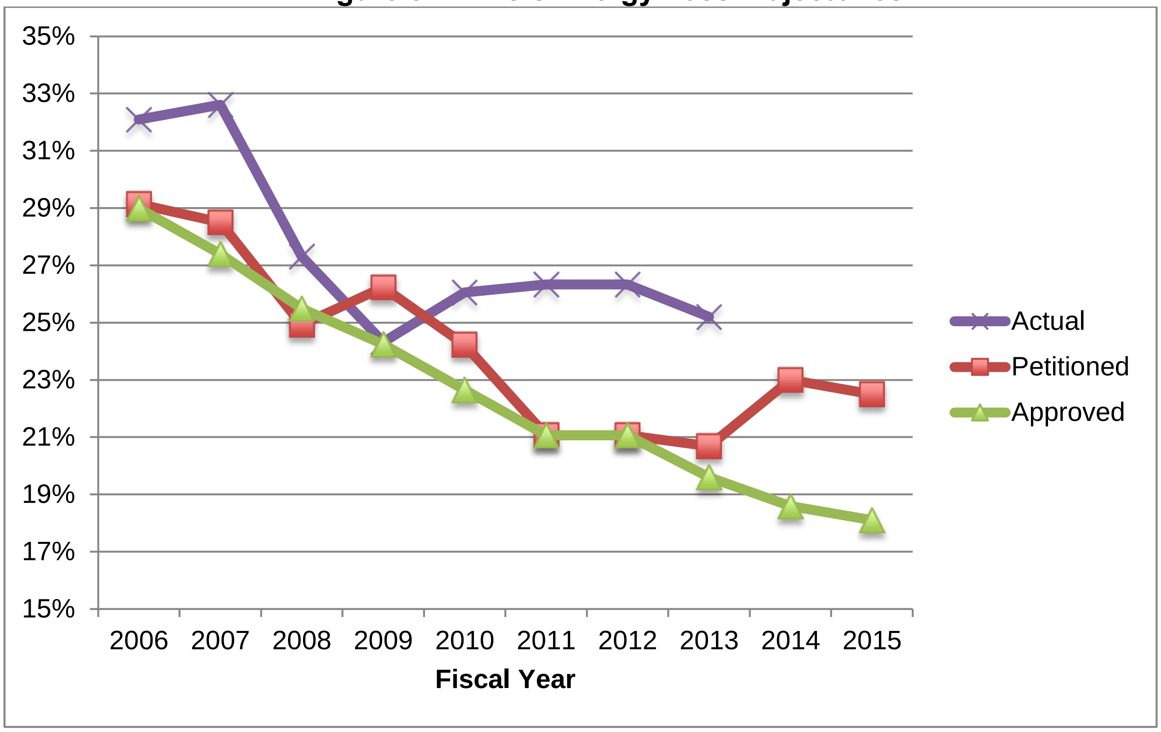
10. The step increase in petitioned tariffs for FY2014 evident in Figure 4 arises because of the expected increase in power purchase costs from APGC (and from other sources), and is reflected in the similar step at FY2014 apparent in Figure 1 above.

11. **Distribution Losses.** Achieving and sustaining reduce distribution loss levels has been a major challenge for APDC. Figure 5 shows that APDC has some success in reducing losses over the period FY2007-FY2009, but that losses increased again in subsequent years. The company has consistently missed the loss targets set by AERC, which has resulted in significant revenue shortfalls in some years. For example, in FY2013 APDC achieved an overall loss level of 25.2% against AERC's target of 19.6%. This means that approximately 8% of energy purchase costs will be disallowed by AERC. Energy purchase costs represent around

73% of APDC's overall annual revenue requirement, and so the revenue shortfall is significant. AERC has issued several directives designed to address and improve the performance of APDC. In particular, APDC has been directed to instigate a taskforce to improve detection of and prosecution for electricity pilferages. Implementation and commissioning of asset funded by ADB's 2009 MFF are also expected to materially reduce technical and commercial losses.

12. It is also noteworthy that APDC has missed self-imposed loss targets in most years since FY2006. This is evidence of a flawed understanding of its own network, suboptimal operational management, poor planning practices, and of a deficient regulatory strategy.

Figure 5: APDC's Energy Loss Trajectories



13. APDLC's financial performance has been characterized by persistent and significant accounting losses, primarily as a consequence of limited success in reducing losses. The company also experiences negative operating cash flow and relies on deferred debt service and short-term borrowings.

C. Governance Assessment

14. Under the previous projects, a set of measures for good governance and financial management were introduced, and they were included as loan covenants. A summary of proposed governance measures and the achievements are given in Table 1. Based on the above assessment, it is clear that most of the governance measures required by the previous projects are in place.

Table 1: Governance Measures and Performances

General Measure	Performance
(2003 Loan) The special project unit (SPU) set up under the Reform Steering Committee shall be responsible for daily implementation of the Program within the institutional, financial and regulatory imperatives. In the activities, the SPU shall also coordinate with ADB and various stakeholders and for adequate consideration in the Program, solicit regular feedback from power sector experts within and outside the state and consumer groups.	Complied. The SPU was set up in September 2003.
(2003 Loan and 2009 MFF) Maintenance of records and accounts adequate to identify the goods, and consulting services financed out of the proceeds of the Loan, to disclose the use thereof in the Project, to record the progress of the Project (including the cost thereof) and to reflect, in accordance with consistently maintained sound accounting principles, its operations and financial condition.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
(2003 Loan and 2009 MFF) Provision to ADB of all such reports and information as ADB shall reasonably request concerning (i) the Loan and the expenditure of the proceeds thereof; (ii) the goods, and consulting services financed out of such proceeds; (iii) the Project; (iv) the administration, operations and financial condition of the State and ASEB only in so far as it relates to the Project; and (v) any other matters relating to the purposes of the Loan.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
(2003 Loan and 2009 MFF) Except as otherwise agreed with ADB, the requirement for ASEB to take all action within its powers to maintain its corporate existence, to carry on its operations, and to acquire, maintain and renew all rights, properties, powers, privileges and franchises which are necessary in the carrying out of the Project or in the conduct of its business.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
(2003 Loan and 2009 MFF) Conduct of business in accordance with sound administrative, financial, environmental and power sector development practices, and under the supervision of competent and experienced management and personnel.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
(2003 Loan and 2009 MFF) Operation and maintenance of plants, equipment and other property, and	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010

General Measure	Performance
from time to time, promptly as needed, make all necessary repairs and renewals thereof, all in accordance with sound administrative, financial, engineering, environmental, power sector development, and maintenance and operational practices.	
(2003 Loan and 2009 MFF) No sale, lease or disposal of any of their assets required for the efficient carrying on of operations or the disposal of which may prejudice their ability to perform satisfactorily any of the obligations under the Project Agreement and the Loan Agreement.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
(2003 Loan and 2009 MFF) Application of the proceeds of the Loan to the financing of expenditures on the Project in accordance with the provisions of the Loan Agreement and the Project Agreement.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
(2003 Loan and 2009 MFF) Performance of all obligations under the Financing Arrangements.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
(2003 Loan and 2009 MFF) Prompt notification to ADB of any proposal to amend, suspend or repeal any provision of its Charter.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010 Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Procurement *(2003 Loan and 2009 MFF)* Use ADB guidelines on procurement and consulting services.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
(2003 Loan and 2009 MFF) Use of ADB's standard bidding documents and standard request for proposal documents for procurement and recruitment of consultants.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
(2003 Loan and 2009 MFF) Preparation of bid specifications and packaging to ensure maximum competition under international competitive bidding procedures.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
(2003 Loan and 2009 MFF) All bidding documents and contracts to include anticorruption provisions acceptable to ADB.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Financial Management and Audit *(2003 Loan and 2009 MFF)* Maintenance of separate accounts for the Project, and ASEB's overall operations; (ii) having accounts independently audited; and (iii) prompt provision to ADB (no later than 6 months after the close of	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010

General Measure	Performance
the fiscal year to which they relate), certified copies of such audited accounts and financial statements and the report of the auditors.	
(2003 Loan) Timely budgetary allocations from the state to ASEB and successor companies and: from April 2004 payment of allocations within two month of claims being raised; immediate payment of subsidies in accordance with the Electricity Act 2003; from June 2004 reduction of receivables from municipalities and other state bodies and authorities to the equivalent of one month.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Reform *(all 2003 Loan)* Development and implementation of public awareness campaigns and a participatory strategy to gain public support for power sector reform.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Development of necessary rules, processes and procedures for implementation of reform, including appointment of senior management and independent directors.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Ensure full funding of employees' terminal benefits for existing pensioners and for those retiring up to FY2009, and payment of terminal benefits for later retirees.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Institutional (*2009 MFF)* Development of new business processes under the TA to support the IA, APGC, and LAEDCL to strengthen the functions of corporate, human resources, and financial management in consultation with relevant stakeholders so that the functions will be fully delegated to the IA, APGC, and LAEDCL within five years from the inception of the TA.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
(2009 MFF) Implementation of the plan to be developed under the TA for expanding the single point power supply (SPPS) franchisee program, so as to at least double the number of consumers under the franchisees from the May 2009 level by December 2014.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
(2009 MFF) Filing of MYT petitions with the AERC by no later than December 2011.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Regulatory *(all relate to conditions for release of the second tranche of the 2003 loan)*	
AERC issuing rules and standards for tariff setting including multi-year principles and	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010

General Measure	Performance
licensing.	
Approved rural electrification policy including mechanisms for improvement of revenue collection efficiencies and connectivity of poor consumers.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Development and approval of state policy in relation to federal power sector legislative.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Finalizing of transfer schemes of assets, liabilities and personnel from ASEB to successor companies, and completion of personnel transfer.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Appointment of MDs and directors to successor companies.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Power purchase agreements between ASEB and APGC and bulk supply agreements between ASEB and DISCOMs filed for AERC approval.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Licensing requests filed with AERC.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Completion implementation of financial restructuring plans including through-provision of state budget provisions for payment of dues.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
All CPSU dues as of 31 March 2003 settled.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Approval of ASEB's plan for transfer of terminal benefit related liabilities to successor companies.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Transmission service agreements filed with AERC.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Revenue requirement and tariff proposals filed for AEGCL and DISCOMs.	Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010
Installation and operationalization of energy audit meters on all 11kV feeders.	Route Survey completed on 28 Feb 2005. Complied as per PCR No. 36318 Loan Number: 2036/2037 dated November 2010