Critical Integrated Evaluation of State Power Entities Performance and Operational Effectiveness

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ABSTRACT

Power sector is considered a key segment for accelerating economic and social growth in India. It has registered significant growth in recent past and has potential to transform the economy. An uninterrupted and quality power supply is the need of the hour. Amongst the three major channels of power sector i.e. generation, transmission and distribution, the distribution sector has direct interface with the end consumers and is accountable for consumer satisfaction and also for flow of revenues in the entire value chain of Power Sector. Thus, distribution Sector plays a vital role in sustenance as well as growth. But in present scenario is plagued by poor financial health, imbalance in demand and supply, heavy transmission & distribution losses, poor billing & collection and operational & cost inefficiencies. Also consumers also faces problems like high frequency of power cuts, low & fluctuating voltage, lack of responsiveness of service providers and inadequate grievance redressal mechanism. Thus the major concern for power sector is the declining efficiency of the distribution sector and therefore a real challenge today lies in efficient management of the distribution entities. In order to bring improvements in power distribution sector, government has initiated several plans. Reforms have been under way in the power sector for making it efficient and more competitive. Formulation of integrated rating methodology is one major step to bring improvements in the performance of distribution utilities and a tool for quality assessment.

INTRODUCTION AND LITERATURE REVIEW

The formulation of integrated rating methodology is one major step towards evaluation of performance and quality enhancement. This will help in assessing the gaps and formation of the required action plans. The aim of this initiative is to rate all utilities in power distribution sector on the basis of their performance and evaluate their ability to sustain. In present study the rating analysis is presented for the financial year 2015-16 for different state distribution utilities in India. The methodology awarded marks based on various parameters. In certain parameters marks have been assigned for both current levels of performance and relative improvement from year to year. In the present paper an evaluation of state power utilities is done to provide a comparative integrated view. Secondary data has been used in this paper to study the rating analysis of state power distribution utilities in India. Data is compiled from the reports of State Electricity Regulatory Commissions, Power Finance Corporation, World Economic Forum, and Annual [R State Discoms Reports and manual of recommendations of distribution reforms committee. The reports of State power entities of Ministry of Power have also been analysed. Further the annual performance reports and e-books published have been considered.

OBJECTIVES OF THE STUDY

• To assess the operational & financial performance
• To study the gaps in power sector
• To have inter-state comparison
• To study the risks associated with lending exposures
• To bring absolute and relative improvements in distribution channel
• To serve as a basis for subsidies and Govt. assistance
• To analyze the growth potential of Indian power sector

INTEGRATED RATING ANALYSIS

The main objective of developing the integrated rating system for state distribution utilities is to devise a mechanism for improving operational and financial health. The objective of the exercise is to rate all utilities in
power distribution sector on the basis of their performance and their ability to sustain. The rating methodology also serves a basis for receiving subsidies and assistance by the power sector through various schemes. The integrated rating methodology facilitates realistic assessment by Banks/FIs of the risks associated with lending exposures to various state distribution utilities and enable funding with appropriate loan covenants for bringing overall improvement in operational, financial and managerial performance. The rating parameters include operational performance parameters such as audited accounts, reform measures as achievement of schemes, external parameters such as government supply & regulatory provisions and financial parameters such as Cost Coverage Ratio, receivables, payables, sustainability etc. The rating methodology focuses on stimulating and improving operational and financial performance of distribution entities. The methodology adopted helped to assess the performance and awarded marks to various performance parameters of these utilities. In few parameters marks have been assigned for current levels as well as relative improvements in the times to come. The Integrated Rating methodology for State Power Distribution Utilities is developed by the Ministry of Power to provide an integrated view.

The methodology was developed keeping in view the poor financial health of State Distribution utilities and the need to base future funding on an objective rating mechanism. The main objective of developing the integrated rating system for the state distribution utilities is to devise a mechanism for improving their operational and financial performance. This rating system is an attempt to facilitate a uniform and harmonized approach to the rating of State Power Distribution Utilities by Banks and financial institutions. Financial performance helps in forecasting the future growth potential of the respective sector and the need of additional funds required.

**SCORING METHODOLOGY**

Scoring methodology plays an important role in rating and credit analysis. Here, a brief discussion of scoring methodology is done including the main contents and mandatory areas 'of finance and operational efficiency for the year 2015-16.

### Integrated Rating Methodology for State Power Distribution Utilities Rating Parameters

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Parameters</th>
<th>Weightage</th>
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<tr>
<td>1</td>
<td>Operational Parameters</td>
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</tr>
<tr>
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<td>(AT&amp;C) Losses</td>
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<td></td>
<td>Power purchase</td>
<td>6</td>
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<tr>
<td></td>
<td>Cost Efficiency</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Public Interface / Quality of Service</td>
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<tr>
<td></td>
<td>Reform related</td>
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</tr>
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<td></td>
<td>Achievement of DDUGJY</td>
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<td>RPO Compliance</td>
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<td>External Parameters</td>
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<td></td>
<td>Regulatory</td>
<td>12.19</td>
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<td></td>
<td>Government Supply</td>
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Operational Parameters
• Billing & collection efficiency
• Power purchase including planning & procurement and cost competitiveness
• Cost efficiency including O&M & Adm. costs (Excl. Employee cost) / revenue (Sale of Power + Revenue subsidy) and employee cost / Revenue
• E-payment facility, Anti-theft measures, establishment of Call Center and IT Cell, release of new connection and Consumer metering
• Achievement of target set under DDUGJY scheme including hours of supply per day in rural area and Village electrification
• RPO Compliance

External Parameters
• Regulatory including tariff filing, auto Pass through FC and Transco
• Government Supply including tariff subsidy support and estimation of subsidy requirement

Financial Parameters
For evaluating the financial performance of the state distribution utilities various accounting terms and ratios have been used. These include-

Revenue realized from sale of power + other income + subsidy received

AT &C loss = Net input energy

Energy realized = net sale of energy * collection efficiency
net revenue from sale of energy * change in debtors * 100

Collection efficiency = net revenue from sale of energy

Billing efficiency = net sale of energy / net input energy

Fixed assets to total debt ratio = net fixed assets / total debt

debtors from sale of power * 365

Receivables (no. of days) = Revenue from sale of power

Cost of purchase of power

Payables (no. of days) = Creditors from purchase of power * 365

CPA T + Depreciation, Amortization + [interest charged to operation]

Interest Coverage Ratio = Interest charged to operation

Total Borrowings

Debt Equity Ratio = Total Net worth

Total Borrowings = Long term debt + Short term Debt

Total Net worth = Equity + Reserves + Accumulated Profits, Losses - Miscellaneous expenses not written, Note- Energy in MKW,
BRIEF DISCUSSION

The financial performance parameters like cost coverage ratio, audited accounts, Sustainability, AT&C losses, financial planning are significant in determining the rating as these directly determine the viability of the utility. The other important factor is sustaining the financial health and could be achieved through an efficient regulatory practice. The parameters include issue of regulatory guidelines, issue of tariff guidelines, timely filing of tariff petition and timely issue of tariff order. Other parameters relating to timely submission of audited accounts, metering, IT & computerization, no default to Banks / Frs, renewable energy purchase obligation compliance etc. It is essential that state governments and power distribution utilities adhere to certain minimum requirements which are mandatory as per law. The methodology adopted therefore proposes to introduce negative marks for non-compliance. In the absence of negative marks such parameters would have led to assigning of some weightage to minimum eligibility criteria at the expense of parameters which can distinguish merits of rated utilities. The parameters assigned negative marks include non-auditing of accounts, SEB unbundling, non-filing of tariff petition, untreated revenue gap, deterioration in AT&C Loss, increase in payables, regulatory Asset, negative net-worth. The negative marks for such parameters give necessary depth and flexibility to rating methodology.

Grading scales for utilities

<table>
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<th>No. of Utilities</th>
<th>Grading description</th>
</tr>
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<tbody>
<tr>
<td>Between 35 and 50</td>
<td>B</td>
<td>10</td>
<td>Below Average Operational and Fin. Performance Capability</td>
</tr>
<tr>
<td>Between 20 and 35</td>
<td>C+</td>
<td>5</td>
<td>Low Operational and financial Performance Capability</td>
</tr>
<tr>
<td>Between 0 and 20</td>
<td>C</td>
<td>7</td>
<td>Very Low Operational and Financial Performance Capability</td>
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Appraisal of Grades Awarded by ICRA/CARE for the year 2015-16

Awarded “A+ Grade”
- Dakshin Gujarat Vij Company Limited
- Madhya Gujarat Vij Company Limited
- Uttar Gujarat Vij Company Limited
- Uttarakhand Power Corporation Limited
- Paschim Gujarat Vij Company, Limited

Awarded “A Grade”
- Maharashtra State Electricity Distribution Company Limited
- Chamundeshwari Electricity Supply Corporation Limited
- Bangalore Electricity Supply Company Limited
- Himachal Pradesh State Electricity Board Limited
- Mangalore Electricity Supply Company Limited
- Eastern Power Distribution Company of AP Limited

Awarded “B+ Grade”
- Punjab State Power Corporation Limited
- Kerala State Electricity Board Limited
- Hubli Electricity Supply Company Limited
- Southern Power Distribution Company of AP Limited
• Southern Power Distribution Company of Telengana Limited
• North Bihar Power Distribution Company Limited
• Madhya Pradesh Pash. Kshetra Vidyut Vitaran Co Ltd
• Northern Power Distribution Company of Telangana Limited

**Awarded “B Grade”**
• Gulbarga Electricity Supply Company Limited
• West Bengal State Electricity Distribution Company Limited
• South Bihar Power Distribution Company Limited
• Dakshin Haryana Bijli Vitran Nigam Limited
• Uttar Haryana Bijli Vitran Nigam Limited
• Tamil Nadu Generation and Distribution Corporation
• Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company Limited
• Jodhpur Vidyut Vitran Nigam Limited
• Chhattisgarh State Power Distribution Company Limited
• Assam Power Distribution Company Limited

**Awarded “C+ Grade”**
• Madhya Pradesh Madhya Kshetra Vidyut Vitran Company Limited
• Paschimanchal Vidyut Vitaran Nigam Limited
• Ajmer Vidyut Vitran Nigam Limited
• Jaipur Vidyut Vitran Nigam Limited
• Kanpur Electricity Supply Company Limited

**Awarded “C Grade”**
• Tripura State Electricity Corporation Limited
• Madhyanchal Vidyut Vitran Nigam Limited
• Purvanchal Vidyut Vitaran Nigam Limited
• Dakshinanchal Vidyut Vitran Nigam Limited
• Jharkhand State Electricity Board
• Meghalaya Power Distribution Corporation Limited
• Manipur State Power Distribution Company Limited

**MAIN FINDINGS IN GRADING UTILITIES**

An analysis of grades awarded to 41 state power distribution utilities in India is presented on the basis of their performance and efficiency. It is based on various important parameters both financial and operational. Cost coverage ratio for most entities (25 out of 41 rated) remained low (~0.90) due to substantial increase in expenses and non-cost reflective tariffs. The median Cost Coverage has however improved marginally to 0.87 during the fifth rating exercise as compared to 0.85 in the fourth rating exercise. Overall 23 power distribution entities (out of a total of 41) have shown improvement in their cost coverage ratios. Out of these, 6 Discoms have shown improvement of more than 10% in their cost coverage ratio. Out of the 14 Discoms reporting decline in cost coverage ratio, 3 have shown decline of more than 10%. For median calculation, cost coverage for TSECL and JBVNL assumed unchanged in FY 2016 as data was not available. Gujarat & Himachal Pradesh were the best performers on cost coverages. Four power distribution entities have shown more than 15% improvement in this parameter and these include Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO), Kanpur Electricity Supply Company Limited (KESCO), Madhyanchal Vidyut Vitran Nigam Limited (MVVNL) and Jodhpur Vidyut Vitran Nigam Limited (JdVVNL).

26 of the rated power distribution entities have shown an improvement in their Aggregate Technical & Commercial (AT&C) loss levels during FY 2016 (over the previous year). 12 utilities have reported AT&C loss levels within 15% during 2016 as compared to 10 utilities during 2015. The median loss level has declined to 22.92% in the current rating exercise from 24.82% in the fourth rating exercise after coming down from 25.08% in the third rating exercise, 26.1% in the second rating exercise and 26.55% in the first rating exercise. Fourteen utilities have been able to achieve more than 10% reduction in this parameter and these include Eastern Power Distribution Company of AP Limited (APEPDCL), Southern Power Distribution Company of AP Limited (APSPDCL), Himachal Pradesh State Electricity Board Limited (HPSEBL), Uttarakhand Power Corporation Limited (UPCL), Mangalore Electricity Supply Company Limited (MESCOM), Chamundeshwari Electricity Supply Corporation Limited (CESCOM), Bangalore Electricity Supply Company Limited (BESCOM), Hubli Electricity Supply Company Limited (HESCOM), Gulbarga Electricity Supply Company Limited (GESCOM), Tamil Nadu Generation and Distribution Limited (TANGEDCO), Kanpur Electricity Supply Company Limited (KESCO), Madhyanchal Vidyut Vitran Nigam Limited (MVVNL) and Jodhpur Vidyut Vitran Nigam Limited (JdVVNL).
Corporation Limited (TANGEDCO), Kanpur Electricity Supply Company Limited (KESCO), Jodhpur Vidyut Vitrans Nigam Limited (JdVVNL), Madhyanchal Vidyut Vitrans Nigam Limited (MVVNL) and Purvanchal Vidyut Vitrans Nigam Limited (PuVVNL).

Six utilities including Uttar Gujarat Vij Company Limited (UGVCL), Southern Power Distribution Company of Telangana Limited (TSSPDCL), Paschimanchal Vidyut Vitrans Nigam Limited (PVVNCL), MP Madhya Kshetra Vidyut Vitrans Company Limited (MPMKVVCL), Meghalaya Power Distribution Corporation Limited (MePDCL) and Dakshinanchal Vidyut Vitrans Nigam Limited (DVVNCL) have shown deterioration of more than 10%. In terms of regulatory environment, Tariff Orders for FY 2017 for 8 utilities have not been issued (including states of Kerala, Rajasthan, Tamil Nadu, Assam, lharkhand and Tripura). During the first rating exercise, tariff orders for all the states for the year FY 2013 had been issued. Regulatory clarity appeared in the state power sector with SERCs in place across all 22 states covered by ICRA and CARE.

RECOMMENDATIONS AND CONCLUSION

Indian Power Sector has emerged as the most dynamic sector in the economy. It has proved its potential of being a transformation agent for the country. Thus this sector will enjoy greater growth opportunities and autonomy in future. The State distribution Utilities play a vital role in effective power supply in the country. But in current scenario the power distribution sector is gripped by financial losses and operational inefficiencies. This issue needs to be resolved on priority. The performance and financial health of power distribution utilities have not improved and strengthened for future requirements. To conclude the operational and financial efficiency of total 41 state power distribution entities is presented in a comparative integrated view. Some entities have shown marked improvement in performance whereas some are still struggling for achieving the same.

FUTURE COURSE OF ACTION

The future research in this area should focus on impact assessment of initiatives and reforms on power distribution sector in terms of reduction in losses and operational inefficiencies. Other relative aspects are to be studied which have not been explored so far. The inter-state rating comparison and efficiency criteria of state distribution utilities can be of immense use for policy and decision making.

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