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Rating of Distribution Utilities in India: Linking the Financial with Operational, with Granularity

Rahul Tongia, Ph.D.

rtongia@brookingsindia.org

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1. Synopsis and Recommendations: Add New Measures to Better Link the Financial with Operational (with Granularity)

The ratings of utilities by ratings agencies are a periodic (annual) affair, and are a transparent attempt to measure utility operations and financial performance. However, the current metrics do not go far enough to link operations with financial performance, nor are they sufficient in terms of granularity (and capturing variance within a utility). In addition to improvements along those dimensions, we suggest a range of additional and proxy metrics to be added for greater insights.

A far more challenging task is to unpack the utility books/finances. While this would take significant effort per utility, a starting point may be to have a parallel audit undertaken on a cash basis instead of accrual basis.

Importantly, this Note does not focus on any specific utility or rating, rather on the methodology for the ratings.

2. Ratings of Utilities

In August 2015, the Ministry of Power released the State Distribution Utilities Third Annual Integrated Ratings (http://www.pfcindia.com/Content/Annual_IR.aspx). These are the 3rd in a series undertaken by particular agencies, but there have been historical utility ratings as well. However, these, being by the same agencies, have a consistency to them.

From the document, "The main objectives of developing the integrated rating methodology for the state distribution utilities are:

• To devise a mechanism for incentivising/dis-incentivising the entities in order to improve their operational & financial performance.

• To facilitate realistic assessment by Banks/FIs of the risks associated with lending exposures to various distribution utilities and enable funding with appropriate loan covenants for bringing improvement in operational, financial and managerial performance.

• May serve as a basis for Govt. assistance to the state power sector through various schemes like R-APDRP, NEF, etc."

3. Suggestions and Discussion

3.1.   Dissemination

While the booklet is online as a PDF, the actual data per state are not public. Not only should these be released, it would be more helpful to have them available in an Excel type of format. Both the raw value (e.g., the AT&C loss figure) and the corresponding score should be disseminated.

3.2.   Standardization of Data Gathering

Most of the data are relatively mechanical without subjective judgments. Thus (and this extends to all data aspects of the utilities, not just for this rating), there should be an online format (like via an XML database) for such data to be continuously reported. The Energy Information Administration (EIA) of the US Department of Energy does this (there are EDGAR formats used for such things).

The exceptionally powerful database which shows real-time data on LED bulbs, measured in the crores, shows how this could easily be done for a few dozen utilities, states, and even a few hundred power plants. Not only would this make such exercises far easier, these would also allow periodic updates. In addition, with standardized reporting formats for the utilities, data on prices, P&L, etc. can be seen in a much easier manner for analysis and comparisons.

3.3. Accounting flaws

While these reports and ratings are based on best available data as per audits and regulatory filings, there is a systematic problem with these. This is not to say that these are wrong per se, but rather an alternative calculation would be of immense value as well. While the norms require accrual accounting, cash accounting is very important as well and not undertaken. Below is an example of how and why this is important such that revolving shell games are not played.

> Year 1: in the tariff filings, assumptions are made as to future sales by sector, irrigation load, cost of power purchases (including fuel prices as well as short-term purchases), subsidies to be received, etc.

> Year 2 (if not later): the actual happenings are documented and eventually audited. Almost always, there is a gap based on perhaps optimistic assumptions. This leads to the subsequent year's tariff proposals requiring a true up.

> Year 3 (True up proposals). The reconciliation is spread out over time, and future incoming cash flows, if deficient, are apportioned in a non-standardized (if not ad-hoc) manner.

> Etc.

Not only are there delays in games played in terms of payments, there are systematic differences between which stakeholder is paid in what order (spanning state versus central, public versus private, different fuels, etc.) These also lead to the creation of the elusive Regulatory Assets, which are nothing but IOUs. In fact, data on Regulatory Assets so created, as well as success rate in paying them down, should be an important metric.

3.4. Finding Cohorts (aka peers)

These rankings compare all the utilities against each other, but there are systematic and inherent differences between utilities which would create differences between expected values. Stated another way, we may need different benchmarks for different utilities based on things like size, consumer mix, rural urban ratio, generator mix, etc.

To help find benchmarks, one should extend these same calculations for private utilities, which would naturally only be an applicable benchmark for urban areas.

This would also help understand the impacts of tailored or targeted policies, e.g., special waivers for so-termed "backward" or hilly regions.

3.5. Managing Variance

While the findings focus on overall utility data, this inherently becomes the average value. Two utilities with, say, 20% AT&C losses, but one with higher standard deviations across zones/sub-divisions (ideally measured

at a feeder level!) is different than one with more homogenous values. This will help identify how/where to take action. Thus, measures of variance, as standard deviations (at the lowest level of granularity available), should be captured.

3.6.   Linking Operations and Finance

While data may not readily exist at a granular level for measuring load-shedding or, in some cases, electrification, these must be captured as soon as feasible, and are part of government priorities. Points 3.6.1 and 3.6.2 are also linked to the issue of finding cohorts or peers -   otherwise data are not comparable.

3.6.1.   Load Shedding

While proper (granular, by geography and time) load-shedding instrumented data for discoms is mostly unavailable (Karnataka and a few urban areas are exceptions), one cannot compare utilities without factoring in load-shedding. Just like the joke for a cure for dandruff is baldness, the more a utility load sheds, the more it can save money. But that's an inappropriate way.

3.6.2.   Access to Electricity (Household Level Connections)

In General, it is most expensive to both connect as well as serve the most remote locations. Thus, the utility with higher if not full household level electrification would be expected to have higher costs.

3.6.3.   Time of Day Pricing

There are two aspects to Time of Day pricing. First is at a supply level, procuring Peaking Power. To what extent does the utility procure peaking power? While a cost, it improves service. Second, Have any consumers been offered ToD pricing, and if so, what is the penetration rate (assuming voluntary or optional).

3.7.   Proxy or Indirect Measures

There are a number of additional measurements that can provide insights into the operations and professional capabilities of utilities. Exactly how these can be internalized into the ranking process can be worked out subsequently.

3.7.1.   Transformer Failure Rate

In addition to a low transformer failure rate, even the presence of a robust monitoring (database) system is a bonus.

3.7.2.   Fraction of Irrigation Pumpsets Metered

While the tariffs for IP sets is a key issue, some of that is not in the hands of the utility (rather, is a combination of policy and regulatory guidance). On the other hand, fraction of pumpsets metered is a very good measure of both accuracy of data (else, assumptions have to be made) as well as political acceptability of professional operating norms. In some ways, fraction of IP sets metered can be a subset of fraction of load metered.

3.7.3.   R-APDRP Success Rate

This could span both timelines as well as loss improvements.   In addition, there should be bonus points for extending R-APDRP functionality across the state (beyond urban areas). Not only does this help operations, it gives accurate data and enables metrics for further improvements.

3.7.4.   Success Rate for Other Initiatives

Other initiatives could be centrally supported (e.g., rural electrification) or other programmes/projects/etc.

3.7.5.   Energy Saving Measures

This includes not only distribution of not just CFLs (now, LEDS) but other initiatives, especially for C&I consumers (commercial and industrial).

3.8.   Changing the Weights of the Scoring

Depending on the objective function or lens one is applying, one would want to weight the different questions differently (a banker, a consumer group, etc.). If the underlying data are available (see point 3.1) it is very easy to have a tool (either online or as a spreadsheet) that can assign different weights to different questions.

This is more subtle than just a mechanical system for changing weights. This is because many of the factors are interrelated. Thus, if I believe that political interference is going to be higher in the coming years, there would be a specific subset of questions or factors where this would be influencing outcomes and hence all of these relevant questions or factors could receive a higher weightage.

3.9.   Other Data Points

There are several other data points worth collecting and disseminating, even if it is not clear a priori how these can be used (if at all) or with what weightage.

3.9.1.   Tenure of Leadership

There are criticisms of non-domain specialists heading utilities, often from the Civil Services, but perhaps the challenge is not their being an Indian or State Administrative Services Officer – the issue is do they have the longevity to learn and implement change, or are they focusing on the short term (which includes not rocking the boat)? Regular transfers of leaders may be a symptom of problems in the utility-political leadership relationship.

3.9.2.   Vacancy Rate

Many utilities have far fewer staff on their rolls than sanctioned. Not only does this impact services and quality, it often requires extra out-sourcing of tasks, which brings with it its own challenges. (Of course, in some cases, it may be efficient to outsource some tasks). Many utilities have challenges more in rural areas, so granular data on vacancies may be important.

3.9.3.   IT Staff Strength and Hierarchical Positioning

While IT Staff strength is not a direct input to a utility's health, and is in many ways part of R-APDRP or other initiatives, having low staff strength can be a proxy for how well a utility is prepared for major change. While one could attempt to see their plans for transformation (e.g., Roadmaps, studies, etc.) these would be subjective and harder to compare across utilities. In addition, keeping such staff at a lower level indicates such officers do not have easy visibility or access to other divisions, an important facet of change management. E.g., nowadays in many enterprises, there are C-level officers for information and even information security (CIO and CISO).

4. Other Discussion

If one looks at the actual ratings from August, 2015, one sees that there are 2 fundamental linkages across the ratings of utilities. One, utilities within a state have some commonalities. This would capture not only regulatory issues at one level (the same Regulator) but also even subtle points of political support (or, conversely, interference). On the other hand, the issue of fundamental differences between DisComs, especially relating to consumer mix, would go a long way in explaining differences such as where Karnataka has 2 of the better utilities in the countries, but also some mid-range ones as well.

Thus, the issue of "explanatory variables" and finding cohorts, along with adding normalized targets differing for different utilities, would be useful for future Utility Ratings.