Power Distribution Sector in India

Snapshot

Distribution and Retail Supply is the most critical link in the electricity market, which interfaces with the end-customers and provides revenue for the entire value chain. Indian electricity distribution caters to nearly 200 million consumers with a connected load of about 400 GW that places the country among the largest electricity consumer bases in the world. The consumers are served by around 73 distribution utilities – 13 electricity departments, 17 private distribution companies, 41 corporatised distribution companies and 2 State Electricity Boards. It owes to the fact of sustenance of other elements in the sector such as generation, transmission, equipment manufacturing; which depends on its operational performance and commercial viability. However, despite of its critical importance, generation segment has always been on the agenda of the government, in light of high energy deficit, necessitating need of huge capacity addition. Not long back, the Government of India had constituted a committee, headed by Mr. Deepak Parekh, erstwhile Chairman of IDFC, to study the electricity sector in India and suggest for improvements. The report, among other suggestions, remarked the following:

“India’s power sector is a leaking bucket; the holes deliberately crafted and the leaks carefully collected as economic rents by various stakeholders that control the system. The logical thing to do would be to fix the bucket rather than to persistently emphasize shortages of power and forever make exaggerated estimates of future demands for power. Most initiatives in the power sector (IPPs and mega power projects) are nothing but ways of pouring more water into the bucket so that the consistency and quantity of leaks are assured…”

Twenty years after reforms were introduced in the Indian electricity sector, the above remark still holds good. The ‘bucket’ in the above remark is the Indian electricity distribution sector, which consumes no matter how much is generated, without adequately compensating the producers of electricity for the same.

Lack of focus has resulted in poor operational and financial performance of the sector, thereby creating greater need of sector transformation, with high calls for private participation in terms of private franchising, public-private-partnership (ppp), equipment suppliers. As a result, tremendous opportunities lie on fore in the sector, for various stakeholders. Thus, this paper establishes the current scenario of power distribution franchisee in urban power distribution network.

Operational & Financial Performance

AT&C Losses

The average AT&C losses in the country are hovering around 27% and these losses are higher on both technical and commercial heads. While higher technical losses are due to old and dilapidated conductors, longer lines serving distant and remote loads, old and inefficient distribution transformers and incorrect configuration leading to load imbalances, higher commercial losses are due to stealing of power, poor billing, low collection efficiency and faulty metering.

In the absence of a proper energy accounting and auditing system in place for most of the utilities, the actual
figures for the AT&C loss could be higher than what gets reported. Arresting the AT&C losses and reducing them year-on-year on a sustained pace will require disciplined approach by the utilities, mostly comprising behavioural changes to the functioning of the field personnel engaged in technical and commercial management of the distribution network and the customers respectively.

**Income, Expenditure and Profitability**

The aggregate turnover (revenue from sale of power and other income but excluding subsidy booked) of the utilities reflected a YoY growth of 10.79% in the year 2009-10 and 19.40% in the year 2010-11. The aggregate expenditure of these utilities registered YoY growth of 13.47% in the year 2009-10 and 13.12% in 2010-11. The recovery of cost is shown in the figure given below:

The aggregate book losses of these utilities increased from Rs.21,562 Crs. in the year 2008-09 to Rs.28,493 Crs. in 2009-10. However, in the year 2010-11, the losses decreased to Rs.26,921 Crs.

**ARR-ACS gap**

The gap (without subsidy) increased from Rs.0.48/kilowatt-hour (kwh) in 2006-07 to Rs.0.77/kwh in 2010-11.

The upward trajectory of gap per unit is explained by the fact that while power procurement cost and wage bills - together both these cost heads account for 82 per cent of the discoms costs - were increasing, lack of political will to revise tariffs resulted in growth rate of ACS outpacing the rate at which ARR increased. Between 2006-07 and 2010-11, the cost of procuring power and wage bills per unit increased by 10 per cent each, resulting in ACS growth of 9 per cent.
On the other hand, tariff hikes have been few and far between and insufficient to meet the revenue gap in most cases; in some states no tariff revision has been implemented for years, as evident from the ARR CAGR of only about 6 per cent between 2006-07 and 2010-11.

Steps taken to Privatization

- During the pre-reform era (1991), Power sector was dominated by the state owned vertically integrated entities called State Electricity Boards (SEBs), responsible for all three functions viz. Generation, Transmission and Distribution of electricity.

- Deteriorating financial health of most of the SEBs and poor quality of supply and service led to reforms in the power sector.

- While Generation segment was the first one to be opened up for private participation, the enactment of the Electricity Act 2003 provided for mandatory unbundling of the state electricity board into separate and independent generation, transmission and distribution companies.

- In the Distribution sector, most of the SEBs have already unbundled (except for Kerala and Jharkhand). The ownership still largely remains state owned. Private Sector Participation is limited to 15 private sector distribution licensees
  - 3 in Delhi (Privatization)
  - 4 in Orissa (Privatization)
  - 2 in Gujarat
  - 4 in Maharashtra
  - 1 in Uttar Pradesh
  - 1 in Jharkhand
  - 1 in Madhya Pradesh
  - 2 in West Bengal

- In addition to the above, new initiatives like introduction of various models of distribution franchisee have also been introduced in the distribution segment, both at the rural and urban level.

Power Distribution Franchisee

Definition

Distribution Franchisee is the latest form of public-private partnership in the distribution sector. The proviso to Section 14 of the Electricity Act 2003 states that:

“...in a case where a distribution licensee proposes to undertake distribution of electricity for a specified area within his area of supply through another person, that person shall not be required to obtain any separate license from the concerned State Commission and such Distribution licensee shall be responsible for distribution of electricity in his area of supply”.

This provision provides a conducive framework in which franchisee can operate in many ways in the distribution business. Electricity distribution franchisee is a classic example of public private participation (PPP) and going by the recent trends its acceptability in the private sector outweighs when compared to the overall privatization of distribution companies. Flexibility provided by the franchisee model is key attraction, for instance, a franchisee arrangement can be limited to catering to small segment of distribution business such as managing a single feeder or distribution transformer, etc or taking care of all the distribution functions for a complete circle.
Types of PPP Models

Major models identified in distribution sector under private sector participation or PPP model are Management Contract Model, Franchise Model and Licensee Model. The allocation of responsibility in the three models is as under:

<table>
<thead>
<tr>
<th>Allocation of Responsibilities</th>
<th>Management Contract Model</th>
<th>Franchise Model</th>
<th>Private Licensee Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation &amp; Maintenance</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td>Capital Investment</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td>Commercial Risk</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td>Asset Ownership</td>
<td>Public</td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td>Duration</td>
<td>3-5 years</td>
<td>10-15 years</td>
<td>Indefinite</td>
</tr>
<tr>
<td>Reform Process</td>
<td>Slowest</td>
<td>Balanced</td>
<td>Fastest</td>
</tr>
<tr>
<td>Political Acceptance</td>
<td>Most</td>
<td>Balanced</td>
<td>Lowest</td>
</tr>
</tbody>
</table>

It is also apparent that distribution franchisee model is a trade-off between privatization benefits and SEB driven reforms which is also politically accepted and yields good result at moderate pace. The franchisee model is thus a right mix of progress, legislature and Acceptability.

Types of Franchisee Models

Pre Reforms
CESC, AECL, BSES, NPC, TPC (existing private players)

1999
Orissa Privatisation – First State

2002
Delhi Privatisation – Distribution Utilities

2007
Distribution Franchisee – Bhiwandi

2010
Distribution Franchisee – Agra (operational)
Kanpur (currently on hold)

2011
Distribution Franchisee – Nagpur, Aurangabad, Jalgaon

Source: PFC
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Win-Win Situation for Utility & Franchisee

<table>
<thead>
<tr>
<th>Benefits to:</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution Utility</td>
<td>■ Reduction in commercial and distribution losses</td>
</tr>
<tr>
<td></td>
<td>■ Better collection efficiency</td>
</tr>
<tr>
<td></td>
<td>■ Improved customer satisfaction</td>
</tr>
<tr>
<td></td>
<td>■ Ability to serve larger area</td>
</tr>
<tr>
<td>Franchisee</td>
<td>■ Possibility to earn high financial returns</td>
</tr>
<tr>
<td></td>
<td>■ Customer lock in period</td>
</tr>
<tr>
<td></td>
<td>■ Develop credentials to help in further bids</td>
</tr>
<tr>
<td>Consumers</td>
<td>■ Improvement in quality of services</td>
</tr>
<tr>
<td></td>
<td>■ Improved power availability</td>
</tr>
</tbody>
</table>

Recent Deals

Several of the recent bidding rounds for Distribution Franchisee have not only witnessed increased participation from the private sector players but also entry of several non-Power players into the sector.

<table>
<thead>
<tr>
<th>Year</th>
<th>Franchise Area</th>
<th>Utility Area</th>
<th>Winning Bidder</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>Agra</td>
<td>Dakshinanchal Vidyut Vitrans Nigam Limited (UP)</td>
<td>Torrent Power</td>
<td>Ongoing (Operations Taken over)</td>
</tr>
<tr>
<td>2009</td>
<td>Kanpur</td>
<td>Kanpur Electricity Supply Company Limited (UP)</td>
<td>Torrent Power</td>
<td>Delayed due to Agitation from KESCO employees</td>
</tr>
<tr>
<td>2010</td>
<td>Nagpur</td>
<td>Maharashtra State Electricity Distribution Company Ltd.</td>
<td>Spanco Group-Essel Group</td>
<td>Spanco started the Operations but Essel joined in by paying the dues worth Rs. 200 Cr for the area to MSEDCL</td>
</tr>
<tr>
<td>2010</td>
<td>Aurangabad</td>
<td>Maharashtra State Electricity Distribution Company Ltd.</td>
<td>GTL</td>
<td>Ongoing (Operations Taken over)</td>
</tr>
<tr>
<td>2010</td>
<td>Jalgaon</td>
<td>Maharashtra State Electricity Distribution Company Ltd.</td>
<td>Crompton Greaves</td>
<td>Ongoing (Operations Taken over)</td>
</tr>
<tr>
<td>2012</td>
<td>Gwalior</td>
<td>Madhya Pradesh Madhya Kshetra Vidyut Vitaran Co. Ltd.</td>
<td>Smart Wireless, Essel Group</td>
<td>Operation to be taken over soon</td>
</tr>
<tr>
<td>2012</td>
<td>Sagar</td>
<td>Madhya Pradesh Poov Kshetra Vidyut Vitaran Co. Ltd.</td>
<td>Smart Wireless, Essel Group</td>
<td>Operation to be taken over soon</td>
</tr>
<tr>
<td>2012</td>
<td>Ujjain</td>
<td>Madhya Pradesh Paschim Kshetra Vidyut Vitaran Co. Ltd.</td>
<td>Smart Wireless, Essel Group</td>
<td>Operation to be taken over soon</td>
</tr>
<tr>
<td>2013</td>
<td>Muzaffarpur</td>
<td>North Bihar Power Distribution Company Limited.</td>
<td>Smart Wireless, Essel Group</td>
<td>Operation to be taken over soon</td>
</tr>
<tr>
<td>2013</td>
<td>Gaya</td>
<td>South Bihar Power Distribution Company Limited</td>
<td>Spanco Group</td>
<td>Operation to be taken over soon</td>
</tr>
<tr>
<td>2013</td>
<td>Bhagalpur</td>
<td>South Bihar Power Distribution Company Limited</td>
<td>SPML Infra</td>
<td>Operation to be taken over soon</td>
</tr>
</tbody>
</table>
Key Issues

<table>
<thead>
<tr>
<th>Sl.</th>
<th>PARAMETERS</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Structuring of Franchisee area</td>
<td>Large enough (Energy input) with defined technical boundary Revenue potential/ sales mix/ Revenue-loss matrix/ LT loss level of the area;</td>
</tr>
<tr>
<td>3.</td>
<td>Contract period</td>
<td>Impact on depreciation/transfer value of assets</td>
</tr>
<tr>
<td>4.</td>
<td>Qualification criteria</td>
<td>Participation of consortium allowed in recent bid process; Optimizing Competence Vs. Competition</td>
</tr>
<tr>
<td>5.</td>
<td>Quality of base-line data</td>
<td>Key success factor for successful bidding process and benefits that shall accrue to the discom/ franchisee</td>
</tr>
<tr>
<td>6.</td>
<td>Reserve price for bidderzzzzzzzz tgg</td>
<td>Higher reserve price makes the proposition non-lucrative, may be left to market driven input rate;</td>
</tr>
<tr>
<td>7.</td>
<td>ABR</td>
<td>Process for periodic joint auditing to be a part of contractual obligations</td>
</tr>
<tr>
<td>8.</td>
<td>Power sourcing option for DF</td>
<td>Regulatory approval for additional Power purchase, FORStudy recommends reliability charge</td>
</tr>
<tr>
<td>9.</td>
<td>Performance Improvement Target</td>
<td>Loss trajectory and related incentive/ penalty may lead to limited participation;</td>
</tr>
<tr>
<td>10.</td>
<td>Treatment of subsidy</td>
<td>Pass through of subsidy should be based on area profile/ viability of the project without subsidy;</td>
</tr>
<tr>
<td>11.</td>
<td>Capital expenditure</td>
<td>DF should have independence of capex decision in the initial years in long term contract;</td>
</tr>
<tr>
<td>12.</td>
<td>Role of regulator</td>
<td>Regulator should recognize DF/ Input rate approval/ Utility ARR and DF revenue;</td>
</tr>
</tbody>
</table>

Way Forward

Distribution Franchisee in present form needs serious corrections
- Especially in provisions related to regulatory oversight, specify guidelines and standard bidding documents for Distribution Franchisees, separately in Urban and Rural areas, supply guarantees by the licensee and asset ownership and transfer

Distribution business model needs a complete rethink
- Unbundling of intrinsic services, viz. “Wires, Supply and Customer Services” would lead to value release
- Would allow for core specialization in all the activities
- Would also allow for Non-discriminatory Open Access to become a reality
- Addressing responsibility for emerging interventions –Smartgrid/ AMI, DSM initiatives
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About Authors

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He is currently pursuing his Power Management from National Power Training Institute (NPTI), Faridabad. He has also worked with Infraline Energy as a Management Intern. There he made a report based on Risk Profiling of Distribution Utilities on the basis of financial and operational data.
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