

The Bhiwandi Electricity Distribution Franchisee Model: A Resolute Step in Distribution Reforms

Initiative in Focus

➤ Electricity Distribution Franchising in Bhiwandi

Infrastructure Development - Turning Points

- CPSUs can reduce supply to defaulting state utilities
- Mobile Number Portability
- KG Basin D6 Gas

Policy Group News & Events

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Efforts to add the much needed generation capacity through private participation are constrained by the poor financial condition of the distribution companies to service such investments. For long now, it is believed that privatization of distribution utilities would solve the problem. However, distribution privatization is still not unanimously accepted, as evidenced in Orissa and Delhi and the aborted efforts in Andhra Pradesh and Karnataka. Distribution franchising thus finds its genesis in the need for realizing the managerial efficiency of the private sector without disinvesting state-owned assets. This note explores the experience of Bhiwandi, the first urban franchising in the country, to assess whether franchising fulfills this aim.

The electricity distribution franchisee (DF) arrangement is based on principles of 'Public Private Partnership' (PPP) wherein specific functions for a demarcated area within the total licensed area of distribution is franchised out by the distribution utility to a private sector entity, while the state retains the ownership of assets.

In the initial years, such an arrangement was restricted to outsourcing of functions such as billing, collection and repair & maintenance (R&M) of transformers. Over time, it evolved into incentive-based arrangements for the private sector to invest in the distribution network and be responsible for all functions after receiving energy from the utility right up to collection of revenues from consumers (see Box 1).

The DF arrangement was given formal recognition through the Electricity Act 2003. The scheme is now being taken up by many states in both rural and urban areas. While the motivation behind it in rural areas is driven by the need to extend access to electricity, in urban areas the reason is purely commercial. However, till recently, input based franchising did not gain much acceptance since states were concerned with the adverse socio-political repercussions in the event of its failure and the private sector was reluctant to take on risks in the absence of a well structured offer.

Maharashtra was the first state to take the bold step of introducing an input-based franchisee arrangement in Bhiwandi, which is now popularly referred to as the Bhiwandi DF Model. The success of this PPP model should be ascribed to the collaborative efforts of the Government of Maharashtra (GoM), Maharashtra State Electricity Distribution

Company (MSEDCL), Maharashtra Electricity Regulatory Commission (MERC) and the private sector franchisee Torrent Power Limited (TPL). With this franchising showing positive results, input based DFs are being attempted in several other places, including other circles in Maharashtra and Uttar Pradesh.

What is the Bhiwandi DF Model?

TPL was appointed as the DF for the Bhiwandi circle in June 2006 and the contract became effective on January 26, 2007. The DF model is structured (see Box 2) such that the DF receives power supply from MSEDCL at designated input points, and pays to MSEDCL an annual rate for this energy input. The DF is also required to achieve a minimum reduction in transmission & distribution (T&D) losses and increase in collection efficiency. The DF is permitted to keep the revenue collected from consumers.

The DF arrangement is structured in a manner such that the entire business risk, after agreeing to the baseline information, is vested with the DF. But the DF is insulated from the regulatory risk of retail tariff revision through a tariff indexation ratio so that its cost recovery is not affected.

How was the Bhiwandi DF rolled out?

Bhiwandi, a textile hub in Maharashtra, was identified as a suitable circle for introducing the DF scheme for two reasons. First, it is an urban area, thus relatively attractive to the private sector, and secondly it was one of the worst performing circles of MSEDCL, with aggregate technical and commercial (AT&C) losses of around 58-60% in 2006. Revenue collection stagnated at around Rs. 240 crores between FY 2001-02 and FY 2006-07 though the sale of

Box 1: Select Distribution Franchisee Models

	Outsourcing	Revenue franchisee	Input based franchisee
Responsibility	Metering, billing, collection	Revenue collection based on a given target	Supply onwards from input points; O&M; metering, billing, collection; release of new connections; capex
Compensation & Bid criteria	Fixed fee	Fixed fee with incentive	DF has right on revenue. Utility receives input rate. DF gets depreciated value of capex at the end of the contract
Benefits	Operational efficiency	Collection efficiency	Operational & collection efficiency, reduced staffing, service improvement, technical efficiency

power grew from 859 MU to 1225 MU during this period. And the subsidy provided by the state government for supply of power to powerloom consumers increased.

MSEDCL started the process for appointment of the DF through competitive bidding in May 2005. Ideally, a utility would like to appoint a DF who offers the highest AT&C loss reduction during the contract period. But, the only information known with some level of certainty from the audited accounts is the energy input into the system and the total revenue realized from the sale of power. Thus, MSEDCL opted for a bid parameter that helped allay concerns of data accuracy for computing AT&C losses.

Bidders were required to quote the annual input rate for power supplied by MSEDCL on the basis of the average revenue realization of the base year. Bidders had to base their financial bids on a minimum reduction of 30% in distribution losses and improvement of 33% in collection efficiency by the end of the contract period. Through this structure, the incentive and penalty mechanism for over and under achieving the specified performance trajectory was perceived to be implicitly in-built.

The levelized values (Present Value) of the yearly input rates quoted by bidders were determined and the contract was awarded to the bidder with the highest levelized value. MSEDCL had set a floor by projecting annual benchmarks for the input rate for the first seven years. The bidding process was concluded with the award of the Letter of Intent to TPL (levelised bid value of Rs. 2.04 per unit).

For measuring performance improvement during the contract period, opening level of data on distribution losses and collection efficiency was jointly finalized by MSEDCL and the DF post award of the DF. Thus, it addressed many concerns of the prospective bidders, particularly that regarding the baseline data of the bidding parameter and the contractual arrangement.

MSEDCL began the handover of operations to TPL in July

2006. There were several hurdles during this process, the main one being determination of the opening level of data. With different departments of MSEDCL handling different sets of data, there were difficulties in co-ordination. Further, the period for available data often differed owing to the different practices of these departments. To illustrate, inconsistencies led to difference in Annual Billing Rate (ABR) determined by MSEDCL and TPL. But since the difference was not very high, the issue was resolved through mutual discussions.

The problem however, was more pronounced in the Nagpur Urban Circle where Crompton Greaves Ltd. (CGL) was appointed as the DF by MSEDCL. The issue is in the process of being sorted out and the fate of the DF remains undecided.

Thus, data acceptable to both MSEDCL and TPL were finally adopted, and independent auditors appointed for validation of data where such settlement was not possible. The two companies verified the opening data, finalized the methodology for computation of losses and collection efficiency, and identified bottlenecks in the transmission network (with the involvement of the state transmission company). Although MSEDCL had set a period of 90 days for this handover, the duration finally got extended to six months.

TPL's strategy for Bhiwandi

TPL adopted a three-pronged strategy for its operations in Bhiwandi - (i) reduction in technical losses (ii) reduction in commercial losses and (iii) improvement in customer satisfaction.

While technical losses were reduced through focused investments for strengthening and augmenting the network, commercial losses were reduced by arresting revenue leakages. This, in turn, was done by extending metering and replacing faulty consumer meters to ensure accurate metering, enhanced vigilance, and most importantly eliminating unauthorized use of electricity by regularizing illegitimate connections under the 'Ujjwal

Box 2: Salient Features of the 'Bhiwandi DF Model'

- **Contract Period:** 10 years, extendable
- **Power supply:** MSEDCL to supply power at specified input points as per MERC regulations & directives (viz. load shedding schedule) and DF to pay agreed input rate. DF allowed to procure power and supply additional power over and above supply received from MSEDCL; but no guidelines given for such power procurement or for recovery of related costs from consumers. DF to pay to MSEDCL wheeling charges specified by MERC for distribution of such power
- **Capital investment:** MSEDCL committed about Rs. 12 crore per annum for five years in the franchisee area. DF allowed to undertake capital expenditure if required for loss reduction and improved quality of supply and bear all costs. MSEDCL to takeover assets created by DF at the end of the contract at depreciated value as per agreed depreciation rates. No methodology given for valuation of capex done by DF.
- **Arrears:** MSEDCL to provide an incentive of 20% and 10% of the pre-takeover arrears collected from permanently disconnected consumers and current live consumers, respectively
- **Employees:** DF allowed to choose from the MSEDCL employees in the franchised area and the employees given option to join the DF on deputation for a period of 3 years, on MSEDCL's employment terms and conditions applicable as a minimum. Employees offered deputation at a fixed allowance in line with the state government. Cost of employees on deputation to be borne by DF, but right to their promotion remains with MSEDCL. DF has right to cancel deputation of an employee by giving a one month notice to MSEDCL. DF is free to hire employees, but with no reemployment obligations of MSEDCL.
- **Subsidy:** MSEDCL to provide credit to DF in weekly power purchase bill towards subsidy for supply of power to subsidized consumer categories.
- **Tariff Indexation:** The annual input rate paid by DF to MSEDCL is indexed to the average tariff or average billing rate using a tariff indexation ratio. The Tariff Indexing Ratio is calculated as ratio of prevailing average tariff as applicable to all consumers in the franchised circle and average tariff as applicable to all consumers in the franchised circle in base year. The base year was defined as the financial year registering the maximum average revenue realization per unit of energy input in the circle between 2001-02 and 2005-06.
- **Rights of DF:** Employees of DF authorized under Electricity Act 2003. DF given "right of use" of existing distribution assets of licensee.
- **Others:** DF to remit to MSEDCL the security deposit for new connections, Electricity Duty and Tax on Sale of Electricity collected from consumers. DF to comply with MERC directives, Standards of Performance and Electricity Supply Code.

Bhiwandi Abhiyan', particularly in the slums. Such regularization and release of new connections was facilitated by minimizing the process time for obtaining connections and simplifying the requirements for the same. This regularization drive was supported by a dedicated communications campaign, targeting, in particular, the womenfolk. The campaign also urged them to pay their electricity bills. Out of the 55,000 new connections released between February 2007 and January 2009, almost 38,000 connections were on account of regularizations.

Customer satisfaction was brought about through provision of better quality of supply and service. Improved supply was a result of investments in new assets and R&M of existing ones. Improved service was an outcome of 24x7 call centre, quick response to customer complaints for fault repair, speedy and easy release of new connections, mobile van for onsite services to customer, and dedicated communication initiatives. These initiatives included letters to consumers along with bills describing TPL's activities and forming an advisory committee comprising prominent citizens of the area. This committee meets every quarter and takes up citizens' concerns. Besides pursuing business interests, TPL made efforts to become a part of the social fabric of the area by taking part in community development activities and local festivals.

The visible effects of improved supply and customer care services enabled TPL to win over the confidence of the earlier discontented consumers and led to greater acceptance of this private operator.

But the challenge of change management was not limited to the consumer end. It involved addressing another key challenge - human resources. TPL had to culturally align its own employees, MSEDCL's employees and new recruits with inherent differences in the working styles of the public and private sector. It also had to overcome the social and vernacular barriers that came with the diverse workforce. TPL management (i) made all efforts to sort out differences, (ii) motivated employees through a performance reward mechanism, and (iii) made MSEDCL employees feel empowered to take operating decisions and execute them without waiting for formal approvals.

Perceptible Outcome

There is no doubt that TPL has been able to bring about discernible improvements in the power situation and the financial health of the Bhiwandi circle in a very short period of time (see Box 3). TPL has lowered AT&C losses by more than 30% and dramatically reduced transformer failure rates. Quality of supply has improved significantly, as evident from the reduction in (i) the frequency as well as duration of system failure (SAIFI and SAIDI) and (ii) average duration of supply interruption experienced by consumers (CAIDI).

Outstanding Issues

The DF scheme in Bhiwandi is undoubtedly a huge success, and it is encouraging to see that such arrangements are being explored in other areas. However, there are some issues that deserve attention to enable better replication and wider acceptance of the arrangement, as well as the sustainability of outcome when the circle reverts back to the utility.

Box 3: Power Scenario in Bhiwandi - Before and After Franchising

	Handover to DF - Dec 2006	At the end of 2008-09
Aggregate Technical & Commercial (AT&C) losses	58%	24%
Transformer failure rate	40%	7.5%
Status of consumer metering	Poor with few accurate meters	95% meters accurate
<i>Indicators for Quality of Supply</i>		
System Average Interruption Frequency Index (SAIFI)	47.63 [#]	13.57 [*]
System Average Interruption Duration Index (SAIDI)	23.56 [#]	3.55 [*]
Consumer Average Interruption Duration Index (CAIDI)	0.49 [#]	0.26 [*]

[#] Feb 2007 ^{*} Jan 2009 Source: MSEDCL, TPL

- The power supply risk to DF still persists to some extent. In February 2007, soon after TPL took charge of operations in Bhiwandi, MSEDCL had to resort to increased load shedding on account of the power shortage facing the state. Interestingly, even the local police blamed TPL.
- Although the DF is allowed to procure power and supply additional power over and above supply received from MSEDCL, no guidelines have been given for such power procurement or for recovery of related costs from consumers.
- There is no minimum capital investment commitment on the DF, and the linkages between investment and performance improvement are not clearly spelt out. Although, the DF may achieve its performance targets, it may do so through operational efficiency and short term investments rather than long term capital investment. Attempts have been made to allay this concern in case of franchisees recently awarded in Agra and Kanpur by (i) providing for penalties on non-performance, (ii) increasing the period of the DFA to 20 years and (iii) mandating a minimum capex of Rs 200 Crores.
- Utilities should maintain interaction with consumers in the franchised area because they are ultimately responsible to the consumers and are bound by the regulations related to power supply in the state as well as standards of performance i.e. quality of supply and service. MSEDCL receives several queries on the DF, a significant number of which are under the Right To Information (RTI) Act.
- The utility and the DF should ensure compatibility of Information Technology (IT) systems and meaningful MIS for effectively evaluating the benefits from the scheme. Although MSEDCL is now able to generate internal MIS reports for Bhiwandi on the basis of data given by TPL, initially they faced difficulty in synchronizing their IT systems with that of TPL.
- Handling the needs of multiple DFs may be time consuming and tedious unless there is a dedicated cell to co-ordinate. Post Bhiwandi, MSEDCL realized the need to have adequate capacity on various contractual, commercial and regulatory aspects related to the DF as well as to monitor the performance of the DF. It has set up a Franchisee Management Cell to undertake all activities on distribution franchising in the state.

Infrastructure Development – Turning Points

CPSUs can reduce supply to defaulting state utilities

The Appellate Tribunal for Electricity (APTEL), in a judgement in May 2009, overruled an order of the Central Electricity Regulatory Commission (CERC) wherein CERC had declined to instruct the Northern Regional Load Despatch Centre to reduce power supply to the state of Jammu and Kashmir (J&K) on account of non-establishment of a Letter of Credit (LC) in favour of NTPC Ltd. Opening and maintaining an LC equivalent to 105% of average monthly billing is mandated under the Tripartite Agreement signed in April 2002 between the Government of India, state governments and the Reserve Bank of India for timely payment of outstanding dues by state utilities to Central Public Sector Undertakings (CPSUs). Failure to do so will attract reduction in power supply equal to 2.5% of the average daily supply for the preceding 90 days.

This judgement sets a precedence in enforcing financial discipline amongst state owned distribution utilities and dissuading them from dishonouring contractual commitments.

Mobile Number Portability

Mobile Number Portability (MNP) provides benefits to mobile telephone users by allowing them to retain their existing numbers when changing from one operator to another. The Department of Telecommunications (DoT) has signed license agreements with Telcordia & Syniverse Technologies on April 21, 2009, to implement MNP.

Each licensee has been assigned 11 telecom circles and is required to set up infrastructure enabling MNP besides functioning as a clearinghouse, independent of the existing telecom players. DoT has mandated the implementation of MNP in eight circles, including the four metros by September 20, 2009. The Telecom Regulatory Authority of India has specified a maximum time of three days for number porting. Internationally, the average time taken for MNP is about eight days.

Introduction of MNP will undoubtedly increase competition and service providers will likely introduce attractive schemes for retaining or gaining customers. On the other hand, the attractiveness of MNP to consumers would depend largely on the cost incurred by them for changing their operator, particularly for the pre-paid consumers who form 93% of mobile users in the country that are highly price-sensitive. With the average revenue per user in this segment being about Rs. 166, charges above Rs. 200 for number porting could dampen the churn rate of MNP. For the new telecom operators, MNP provides a great entry platform to lure high revenue generating post-paid subscribers onto their networks. Ultimately, though, the success of MNP will depend on the

extent to which the competition leads to better service quality, including improved network connectivity.

KG Basin D6 Gas

During FY 2008-09, gas based power generation fell short of target by 12% and the commissioning of several gas based plants (such as 4 IPPs in Andhra Pradesh aggregating about 1600 MW) was delayed due to the shortage of gas. The Plant Load Factor for gas based plants was a poor 58%. In this scenario, the production of gas from the KG Basin D6 block of Reliance Industries Ltd (RIL) from April 2009 has come as a relief to the power sector. The gas allocated to power sector could generate about 25,000 million units of electricity annually.

Though the prevailing government policy provides the producer the freedom to sell gas and at a market price, the government constituted an Empowered Group of Ministers (EGoM) to approve the price and utilization of gas. In June 2008, the EGoM, for the initial 40 million metric standard cubic metre per day (mmscmd) of gas, approved a price of \$4.2 per Million British Thermal Unit (mmbtu) and specified the following priority for supply: existing gas based urea plants, LPG plants, existing power plants and city gas distribution.

In June 2009, the Bombay High Court (HC), upholding the MoU signed in 2005 between RIL and Reliance Natural Resources Ltd (RNRL), has ruled in favour of RNRL assuring it 28 mmscmd of gas for 17 years at \$2.34/mmbtu from RIL. RIL had claimed that it should be allowed to sell gas at the EGoM approved price. The MoU also provides that for all future gas produced by RIL (besides the 28 mmscmd already allocated to RNRL), Anil Ambani Group (R-ADAG) is given the option to split the quantity of gas in the ratio of 60:40 with 60% to RIL and 40% to R-ADAG. However, R-ADAG is not allowed to trade this gas and its proposed gas based power plants are yet to get off the ground.

The developments in the gas sector so far underscore the shortcomings in the prevailing policies. The key concerns in the sector include:

- Government not adhering to policies and keeping price determination out of the purview of the Petroleum and Natural Gas Regulatory Board
- Validity of gas utilization policy and EGoM notified price
- Future gas availability for fertilizer and power plants not belonging to R-ADAG
- Status of gas allocated to R-ADAG but cannot be utilized
- Outcome of the case between RIL and NTPC on the price for supply of 12 mmscmd gas at RIL bid price of \$2.34 per mmbtu. NTPC however has reasons to be hopeful of a favourable judgment after the RIL-RNRL verdict.

Policy Group – News & Events

- **Panel Discussions on Land Acquisition & Public Purpose, and Compensation for Land Acquisition:** As part of the activities shaping the India Infrastructure Report 2009 (titled *Land – A Critical Resource for Infrastructure*), we jointly organized with the Bombay Chamber of Commerce and Industry a panel discussion on March 3, 2009. Issues discussed included ways to prevent misuse of the government's eminent domain powers for land acquisition, compensation, livelihood security, and the resettlement and rehabilitation for people displaced. The debate was subsequently televised on UTVi.
- **Workshop on Generating and Implementing Visionary Railway Strategies:** We were invited by the Planning Commission, the Indian Railways (IR) and the World Bank to contribute to the development of a vision strategy up to 2025 for IR.

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