

# **A Critical Review of the Performance of Delhi's Privatized Distribution Companies and the Regulatory Process**

**Summary of Key Findings, Observations and Lessons**



आरोग्य, ऊर्जा, शिक्षण आणि पालकत्व  
या विषयांतील विशेष प्रयत्न

**Prayas (Energy Group), Pune**

May 2006

## **Prayas Occasional Report – 1/2006**

### **A Critical Review of the Performance of Delhi's Privatized Distribution Companies and the Regulatory Process**

#### **Summary of Key Findings, Observations and Lessons**

A report by:  
Daljit Singh, Shantanu Dixit, and Girish Sant

**Prayas (Energy Group),**  
Athawale Corner, Near Sambhaji Bridge,  
Karve Road, Deccan Gymkhana Corner,  
Pune - 411004. INDIA  
Tel: + (91) 20 - 2542 0720, 5620 5726, Fax: 2542 0337  
Web-site: [www.prayaspune.org](http://www.prayaspune.org)

# **A Critical Review of the Performance of Delhi's Privatized Distribution Companies and the Regulatory Process**

## **Summary of Key Findings, Observations and Lessons**

The power sector in India is facing a severe financial crisis and many state electricity boards have become almost bankrupt. Over the last decade many efforts have been made to improve the financial situation of the power sector, with privatization of electricity distribution projected by many as one of the more important options. In 1999 distribution in Orissa was privatized, but since then many lacunae in the Orissa model of restructuring have come to light. Around the time of the privatization in Orissa, the Delhi government also initiated a process to reform its power sector and decided to privatize electricity distribution. The Delhi model of restructuring is said to be an improvement over the Orissa model in a number of aspects.

Starting last year, Delhi's experience with electricity supply has attracted considerable attention. After the tariff increases passed by the Delhi Electricity Regulatory Commission (DERC) in August 2005, there were widespread protests against the tariff increase, fast-reading meters and faulty billing. The protests with political overtones even resulted in calls for the Chief Minister to resign. This year after the filing of the ARR petitions, concerns have been raised about the revenue deficit due to increased power costs and about possible ways to cover the deficit.

Given the importance of Delhi's experiment with power sector restructuring in the evolution of India's power sector, we decided to analyze the performance of Delhi's power sector, specially the distribution sector after privatization. This study is based mainly on publicly available data from various regulatory proceedings. We focused our attention on the few critical issues that have a direct bearing on consumers: (1) setting of efficiency improvement targets and the actual efficiency improvements achieved by the discoms; (2) capital investments by discoms; (3) billing and revenue collection by discoms; and (4) quality of service for consumers. In the restructured sector, regulatory commissions play a crucial role and have great responsibility to protect and promote consumer interests as well as to ensure financial viability of the utilities. Hence, the study also looks at the role of DERC in the context of the above issues. The report is largely based on an analysis of data pertaining to the first three years of the transition period, i.e. FY 02-03 to FY 04-05. We have also provided a brief overview of the trends projected by the discoms for FY 05-06 and FY 06-07.<sup>1</sup>

Delhi's power sector restructuring scheme, including its process, design, implementation and outcomes certainly needs to be studied and compared with alternate approaches but such a study is beyond the scope of this particular report. This report focuses mainly on the performance of the distribution sector post restructuring and the associated regulatory process.

We first provide background information to enable a better understanding of the analysis presented in subsequent sections related to the performance of the distribution

---

<sup>1</sup> Data for FY 05-06 and projections for FY 06-07 have not been considered for detailed analysis as they are yet to be approved by the Commission and will probably change after the Commission's review.

sector. Then, we provide our observations and analyses about the critical issues identified above. Finally, we list our conclusions and the lessons learnt from the experience with restructuring in Delhi so far.

## **1. Summary of Delhi's Restructuring Process**

Starting with a strategy paper in 1999, the then new Delhi Government moved quickly to restructure the electricity industry in the territory and privatize the distribution business. In a little over three years, in July 2002, the distribution business was handed over to private parties.

The process adopted by GNCTD was different than the process used to privatize distribution in Orissa. First, a new measure for efficiency of a discom was introduced – AT&C losses which covered not only the technical losses but also the non-technical losses and the collection losses. Reductions in AT&C losses were to be the bidding parameter. Business valuation was used to set the value of the distribution assets, whereby the assets were valued at a level at which the company would be able to earn a suitable return based on assumptions of (1) reasonable tariff increases, (2) the bid schedule of loss reductions and (3) gradually declining Government support provided over a five year transition period.

Of the six entities that qualified to receive the RFP, only two (Tata Power and BSES) submitted bids. The bids were in the range 13-14% cumulative AT&C loss reductions and were well below the minimum amount of about 20% stipulated by the Government in the RFP. The Government decided to negotiate with the two bidders. As a result, loss reduction targets of about 17% over five years were agreed upon, about mid-way between the Government stipulated minimum and the initial bids. The bidders agreed that the benefits of any loss reductions beyond the target but below the initial Government minimum would go to consumers entirely. Only the benefits of reductions beyond the Government minimum would be shared equally between the consumers and the discom. Any revenue loss due to underachievement in loss reduction would be borne by the discom.

Out of the three distribution companies created pursuant to the restructuring scheme, two companies, now named BSES Rajdhani Power Ltd. (BRPL), BSES Yamuna Power Ltd (BYPL) were taken over by Reliance Group whereas the third company now named North Delhi Power Ltd. (NDPL) was taken over by the Tata Group.

GNCTD decided to provide a clean balance sheet and therefore, assumed most of the liabilities from the DVB era which amounted to Rs. 19,000 crores. Recognizing that loss reductions would take some time and that therefore the newly privatized discoms would not be financially self-sufficient for some time, GNCTD agreed to provide Rs. 3450 crores of support over a five-year transition period.

## **2. Aggregate Technical and Commercial Losses**

With the presence of just two bidders, there was not much competition in the sale of the distribution assets and the loss reduction targets of 17% over five years agreed upon by the parties were not particularly ambitious. Perhaps, the uncertainty in the amount losses could be reduced led to a perception of greater risk for the bidders with the result that the loss reduction targets were not very ambitious.

Analysis of discom performance in the first three years of the transition period regarding AT&C loss reduction reveals that all three discoms have been successful in reducing AT&C losses. Except for BYPL in 02-03, the companies have been meeting or exceeding the loss reduction targets. For the first two years, the reductions were very close to the target levels. However, in 04-05, NDPL beat the loss reduction target by seven percentage points. Furthermore, it claims to have beaten its target in 05-06 by seven percentage points again. The loss reductions for the three discoms together in the three years since privatization has resulted in savings of about Rs. 880 Cr. for the citizens of Delhi assuming that otherwise DVB's loss levels would have remained at 50.7% (the opening loss level established by DERC).

### 3. Capital Investments by Discoms

The magnitude and appropriateness of capital investments by distribution licensees is an important parameter to evaluate the performance of the discoms. On one hand substantial investments in new equipment may be required to upgrade the system and improve the quality of service for consumers and to improve efficiency. On the other hand, very large capital investments are likely to result in significant increases in retail tariffs. Therefore, it is important to ensure that appropriate and essential capital investment is carried out while unnecessary capital expenditure is avoided so that increases in tariffs are moderated.

Table S-1 shows the capital investments projected by SBI Caps, Delhi government's consultants for the restructuring scheme as well, and the capital investment proposed by the three discoms.

**Table S-1 Five Year Capital Expenditure – SBI Caps and Discom Projections**

		From
	SBI Caps	05-06 Order
BRPL	353	2511
BYPL	358	1759
NDPL	310	1461
<b>Total for 3 Discoms</b>	<b>1021</b>	<b>5731</b>

The level of capital investments requested by companies, specially BRPL and BYPL, are very large based on three measures: (1) in comparison with the projections made by SBI Caps; (2) in comparison with level of investments in another aggressively reforming state, Andhra Pradesh (AP); and (3) in comparison with the net fixed assets of the companies at the beginning of privatization. In order to estimate the impact of this additional expenditure on tariffs, we assumed that SBI Caps estimates were wrong by 100% and that the required expenditure would have been twice the amount given in the SBI Caps report. The expenditure beyond this threshold, if allowed, would raise the distribution costs by about 45 paisa/kWh (realized), an increase of about 50% in distribution costs. In terms of overall tariffs, the additional capital investment costs would raise tariffs by about 10%.

During the regulatory process, DERC substantially reduced the levels proposed by the companies (specially BRPL and BYPL) for capital expenditure. The Commission carried out physical verification through site visits and required the filing of quarterly reports so that the progress of capital expenditure schemes could be monitored. These efforts by the Commission has prevented large increases in the ARR and hence consumer tariff. It is a welcome step that DERC has been pointing out problematic

issues such as last minute advances by the companies. But even with these efforts, the amounts allowed by DERC are large. Special attention needs to be paid by consumers and DERC to the level of capital investments, due to its long-term impact on tariff.

In addition to the level of investment, the appropriateness of the capital investments also needs to be scrutinized. Drawing DERC's attention to the large investments being made by the discoms in IT and communications, automatic meter reading, distribution automation, land, buildings, establishment of new corporate offices, Delhi Transco asked whether consumers should bear the upfront costs of such hi-tech projects before the discoms became financially viable. And it suggested that it would be more appropriate to incur essential expenditure to reduce AT&C losses and improve the quality of supply.

We concur with Delhi Transco in its concerns over the appropriateness of capital expenditure. When cost recovery is the most important consideration, then essential investment for maintaining service quality and reducing the cost of power should be given preference. Automation and system operation convenience should be much lower in priority. These can be taken up when cost recovery is not such a major problem. Even in such cases, the benefits of the investment must exceed the costs.

#### **4. Tariff Revisions in the Post-Privatization Era**

Before delving into costs, billing, and revenue collected by the discoms, we provide an overview of how tariffs are set during the transition period after privatization in Delhi. The tariff determination process during the transition period is different from the conventional process because of two requirements in the policy directions issued by GNCTD: (1) retail tariffs are to be the same for all three discoms until the end of the transition period, March 31, 2007; (2) tariffs are to be set so that the discoms earn a 16% return on equity provided they meet their loss reduction target. Because of these two requirements, tariff-setting for the three discoms is inter-linked and the tariffs have to be set for all three discoms together. Furthermore, the costs of one discom affect the tariffs for the other discoms also.

In order to set tariffs, first, the ARR (excluding power purchase costs) of a discom is calculated so as to recover all its prudently incurred expenses and provide a 16% return on the equity invested in the discom. This amount is subtracted from the projected retail revenues and the residual is the capacity of the discom to pay the Transco for power purchases. The bulk supply tariff (BST) for a particular discom is equal to the residual from the retail revenues divided by the units purchased from Transco. In this way, the BST for each discom is different because it represents the paying capacity of the discom and not the cost of the power purchased. The BSTs for the discoms do not cover the actual cost of the purchased power. Hence, the Government has agreed to provide support to the Transco to cover the deficit during the transition period. As mentioned earlier in the report, it estimated that this required support would be Rs. 3450 crores over the five year transition period.

Using this process, DERC gave average tariff increases of 0%, 5%, 10%, and 6.66% in the four years since privatization. These annual increases result in a cumulative increase in tariffs of about 23% over the four year period since privatization (FY02-03 to FY05-06), which works out to an average increase of about 5.3% per year. These tariff increases are comparable to tariff increases given in the pre-privatization era.

## 5. Power Purchase costs and Discom Costs

Having looked at how tariffs are set, let us now turn our attention to how the costs of the Delhi power system have changed. We look at power purchase and distribution costs using two measures of costs for a discom. The first is the cost per input kWh which excludes the effect of losses and is a measure of the “costliness” of the discom, with input kWh being used to normalize for the size of the company. The second measure of costs is on a per realized kWh basis. This measure includes the effect of the level of losses, and thus is a measure of the overall financial and operational efficiency of the company.

### 5.1 Total cost trend (all three discoms taken together)

Delhi has been fortunate in that the cost of power purchase has not changed dramatically. It started off at Rs 2.31 per kWh in 02-03, increased to 2.45 in 03-04 and then dropped back to Rs 2.23 per kWh in 04-05. The average distribution cost has hovered around Rs 0.50 per kWh. Thus the total cost per kWh of input has not changed in Delhi and is at the level of Rs 2.80 in 04-05, the same level that it was at in 02-03. In contrast, the total costs per realized kWh has decreased significantly, (from Rs. 5.51 per kWh in 02-03 to Rs. 4.63 per kWh in 04-05) largely due to a reduction in power purchase cost and reduction in T&D losses.

### 5.2 Discom-Specific Cost Trend – Input kWh Basis

Let us now look at the costs on a discom-specific basis. The cost per input kWh for the discoms mirror the overall system costs and while the level increased in 03-04 due to an increase in power costs, it declined in 04-05 to the same level it was at in 02-03. Although, the pattern of costs per input kWh mirror the system costs, there are some significant differences between the discoms. First, BRPL is the only discom whose distribution costs decreased over the three year period, albeit by a very small amount. BYPL’s distribution costs started out at a low level of Rs 0.40 per kWh but increased to Rs 0.48 per kWh in 04-05. NDPL’s distribution costs not only started out at the highest level among the three discoms at Rs 0.59 per kWh, they increased to Rs 0.69 per kWh in 04-05. This makes NDPL the costliest among the three discoms on the basis of cost per input kWh.

### 5.3 Discom-Specific Cost Trend – Realized kWh Basis

On the basis of costs per realized kWh, all three discoms show a reduction in costs. On a Rs. per realized kWh basis, BRPL’s costs went from 5.34 in 02-03 to 4.59 in 04-05; BYPL from 7.12 to 5.44; NDPL from 5.54 to 4.41. It can be seen that on this measure, NDPL’s costs are the lowest among the three discoms, because even though it has the highest distribution costs, it has the lowest losses. Because of its high loss levels, BYPL has the highest cost per realized kWh.

These results highlight the importance of rapid loss reductions in bringing benefits to consumers in reduced cost per realized kWh. They also point to the requirement for regulatory scrutiny to ensure that gains in loss reductions are not overshadowed by increases in distribution costs.

## 5.4 Revenue Deficit

Having looked at how the costs of the discoms and Transco have changed over the three years since privatization, we now look at what effect this has had on the revenue deficit of the discoms. By revenue deficit we mean the difference in revenue earned by the sector from consumers and the revenue required to make the sector financially self-sufficient. We arrived at the revenue deficit per kWh by subtracting the average realization rate per kWh from the cost per realized kWh.

All three discoms have shown considerable improvement in reducing the revenue deficit; some of this has occurred because of the tariff increases and some of it because of the loss reduction efforts of the discoms. BYPL has made the largest reductions but still has a way to go with a revenue deficit of Rs. 1.71 per kWh in 04-05. NDPL is very close to being financially self-sufficient with a revenue deficit of Rs. 0.35 per kWh only. BRPL has a bit larger deficit of Rs. 0.73 per kWh.

## **6. Revenues and Consumption Patterns of the Companies**

Having reviewed the costs of the Delhi power system, we now review the revenues collected by the discoms since July 2002. Our review of the overall revenues of the Delhi power sector shows that it is moving towards financial self-sufficiency. Loss reduction with load growth is steadily replacing government support. While the tariff increase in 04-05 also provided additional revenue, we found that in 03-04 in spite of a tariff increase, the average billing rate (ABR) actually declined. This anomaly led us to a more detailed analysis of the revenues, consumption, and ABRs of the companies.

Comparing the ABRs of the three discoms, we found that NDPL's ABR behaved as expected and increased from year to year, but BRPL's and BYPL's showed a dip in 03-04. This led us to analyze the revenue and consumption on a category-wise and sub-category-wise level. Our analysis revealed that in several places the trend of ABRs and consumption deviated significantly from expectations. Furthermore, we found that these deviations were more widespread and larger for BYPL and BRPL.

For BRPL and BYPL, we also found that there were anomalies in the way in which consumption in the various categories changed from year to year. For domestic consumers of the two companies, the slab-wise data on consumption and number of consumers were not consistent with expectations. These anomalies indicated a possible over-statement of consumption in the lower slabs and a possibility of a corresponding under-statement in the higher slabs. Because, the large tariff difference between these slabs, these errors could have serious financial implications.

We also found problems with the pattern of Commercial and Industrial (C & I) consumption reported by the companies. We found that for BRPL and BYPL, the combined C&I consumption declined in 03-04 by 10% and 17% respectively. In contrast, for NDPL the combined C&I consumption showed a steady increase in both years 03-04 and 04-05. On further investigation we found that for BRPL and BYPL, the consumption for the three major sub-categories (retail industrial, retail commercial less than 10 kW, and retail commercial greater than 10kw) all declined in 03-04.

In an attempt to understand the deviations in ABR and revenues from expectations, we carried out a calculation of the expected revenue for a sub-category from both the



commercial and industrial category based on the consumption and other data provided by the discoms, and compared the results with the revenues reported by the companies for those sub-categories. Our results showed that the revenue reported by BRPL for the two sub-categories together was less than the calculated revenue by Rs. 32 crores, and this error amounts to 6% of the total revenue of the company in 04-05. For BYPL the revenue reported for these two sub-categories was Rs 36 crores less than the calculated revenue, and this error amounts to 9% of the company's total revenue. For NDPL the difference was just Rs 1 crore which is only 0.14% of the company's revenues. We found that such discrepancies existed with other sub-categories of consumers also and that the total of these discrepancies for each of BRPL and BYPL could be large.

The unexpected behavior of ABRs and consumption that we have discussed here all have significant effect on the revenues and tariffs, and are also linked to the validity of the AT&C loss reduction calculations. Yet these issues were not investigated by DERC. In fact, they were not even mentioned by DERC in its orders. This lack of attention on the part of DERC occurred in spite of Delhi Transco drawing the Commission's attention to them.

While commenting on the draft version of this report, BRPL and BYPL, gave several possible reasons related to errors in the data, limitations of the billing software, shifts between consumer categories, and the long time it would take for them to provide further data which may help explain some of the unexpected results. While the reasons given by the companies could partially explain some of the anomalies, this certainly points to serious deficiencies in the way in which critical data that relates to company revenues and loss reduction are maintained and reported.

We find it difficult to understand why the Commission did not address these issues and direct the companies to improve their systems so that the Commission had accurate data for its decision-making. Wrong or doubtful data would result in wrong or doubtful decisions by DERC.

## **7. Quality of Service**

Improving the quality of service (QoS) for consumers was one of the promises of privatization of the Delhi distribution system. Furthermore, QoS is important because many consumers may be willing to pay higher tariffs for electricity as long as it is matched by improvements in QoS. However, so far, QoS has received scant attention in DERC's tariff orders; in fact, QoS is not even mentioned.

As part of their ARR petitions, the discoms are required to file data on load shedding, feeder trippings, transformer failures, and the status of metering. The companies have been filing these data as part of their ARR petitions. However, because the petitions are filed in the middle of the financial year, the data cover only about half the year. Unlike data on expenses and revenues, the data on QoS are not updated through supplementary filings, and therefore remain incomplete. So far, there has been no action or comment from DERC on the completeness or validity of the data. In fact, DERC's orders do not even mention QoS.

There were a large number of complaints by consumers regarding metering and billing by the discoms. Prodded by the volume of complaints, DERC initiated a suo-moto proceeding and issued a show-cause notice to the discoms. In its order on this issue, the Commission emphasized the importance of correcting metering and billing problems,

and noted that the problems were mostly managerial and therefore the top management of the companies should make the necessary effort to improve the situation. The Commission further pointed out that metering and billing problems were more acute in the case of the BSES companies.

In this context, we note that DERC initiated two reviews of the billing systems of the companies. The first study to be carried out by ICRA was to study the process of measurement and reporting of AT&C losses and was started in November 2004. The study was to be finished in six weeks but had not been completed when we met DERC in February 2006. For the second study, DERC engaged STQC IT Services of the Ministry of Communications and Information Technology, GoI as an independent third party testing authority to carry out the following three tasks of the billing systems of the discoms: (1) functional testing; (2) process audit; and (3) information security system audit. During our meeting DERC told us that both these studies were expected to be completed by the end of March 06. Unfortunately, till the finalization of the report, there is no information about the outcome of these studies on the website of DERC.

Last year, DERC released Draft Supply Code and Performance Standards Regulation and invited comments. These draft regulations which are required by the EAct of 2003 are an attempt to address QoS. DERC has laid out standard procedures and practices to be followed by licensees for a variety of issues such as new connections, changes to connections, handling of metering and billing complaints, disconnection, theft and unauthorized use of energy, and complaint handling. In addition, DERC has established Guaranteed Performance Standards regarding restoration of power supply, quality of power supply, meter complaints, billing complaints. Consumers are entitled to compensation for each violation of these guaranteed standards. In addition, DERC has proposed Overall Standards of Performance for restoration of power supply, reliability indices (standards yet to be laid down), and billing and metering mistakes.

The development of these regulations is a welcome step, however, in order to ensure that consumers benefit from improved QoS, regulatory oversight will be necessary. Furthermore, there is no penalty imposed on the licensee for failing to meet the overall standards. The Commission must devise means to ensure adherence to the Overall Performance standards.

DERC approved complaint handling procedures on June 3, 2003 and they became effective from July 1, 2003. The procedures have many of the features that are now included in the Supply Code and Performance Standards Regulation. The companies are required to file with DERC on a quarterly basis MIS reports giving the category-wise number of metering complaints received, number of meters tested, and number of meters found to be defective. However, these quarterly reports are not mentioned by DERC anywhere and so we do not know if they are filed and what action has been taken by DERC.

Similarly, per section 43(iv) of the Performance Standards – Metering and Billing Regulation, 2002, the companies were also required to submit MIS reports on billing, metering, and theft/DAE cases. While DERC gave us MIS reports on other issues it did not give us any related to metering and billing issues. Further, it would not confirm or deny that reports related to metering and billing issues were being filed.

These MIS reports would provide the composition of complaints by category filed with companies. This would give an idea of the issues regarding quality of service that are of

concern to consumers. We do have some information from reports from the GRFs but these complaints are a small fraction of the complaints received by the companies. We do not know if DERC has sought this information. The discoms' complaint handling processes should be modified to ensure mandatory and regular reporting of this information to DERC on a periodic basis. Currently, there is simply no publicly available data on the number of complaints filed by consumers in the last two years that are related to billing and metering!

As part of their comments on our draft report, the discoms claimed that they had undertaken several initiatives to improve the quality of service customers received. We commend the companies for these initiatives but wonder why they were not mentioned at all by DERC in its orders.

To ensure transparency and to provide consumers data on quality of service, we recommend that the following data should be available on the companies' and DERC's web-sites: (1) data on load shedding, feeder trippings, status of metering, and transformer failures etc. as filed in the format of Forms 5.1 through 5.14 submitted by the discoms with their ARR petitions; (2) quarterly reports summarizing the number of complaints of each category and how many were not corrected within the stipulated time; (3) summary reports from the Consumer Grievance Redressal Forums and the Ombudsman.

It is unfortunate that data on the number and category of complaints received and the average time for redressal has not been monitored or made public. Companies are using remote-reading meters even for the some medium-sized consumers but not all 11kV feeder trippings are monitored electronically. In fact, it would cost a fraction of the capital expenditure allowed each year to install an automated system of monitoring one or two critical parameters on each DT. In order to improve things rapidly, the Commission should ensure appropriate use of IT to make companies accountable for QoS and make sure that benefits reach consumers.

## **8. Unresolved Post-Transition Issues**

The five year post-privatization transition period will end on March 31, 2007. For the subsequent period following four crucial issues need to be addressed comprehensively and immediately to avoid uncertainty and any possible degradation in the performance of the sector.

1. Tariff-Setting in the Post-Transition Period. How will the State move from uniform Retail Supply Tariffs to company-specific Retail Supply Tariffs? Will it be a sudden change or a gradual transition? If the change is sudden, how will tariff shock be dealt with? Another undecided issue is the tariff regime that will be adopted – MYT or cost of service. In case it is decided to move to a MYT framework, details need to be worked out and considerable ground work needs to be done. Irrespective of the tariff regime, DERC will need to specify the level of loss-reduction expected post-transition.
2. Repayment of Loan The debt portion of the opening balance sheets for the three discoms is covered by loans that they took from the HoldCo, but there is a moratorium on principal and interest until June 30, 2006. Now, that the companies will have to start making payments, there could be a noticeable effect on the tariff. Assuming that the companies refinance these loans, as NDPL proposes to do, the interest payments would add about 3% to the overall costs

for BRPL and NDPL. For BYPL, the impact is expected to be smaller, and the increase in overall costs will be around 1%.

3. Recovery of Government Support of Rs. 3450 crore The support of Rs. 3450 crores provided by GNCTD over the transition period was a "...loan to be repaid by the Transmission Company to the Government in a manner agreed to between the Transmission Company and the Government." If the loan is to be paid back, then some thought needs to be given to how that will be carried out, and this too could have an effect on the tariffs.
4. Purchase of Power by the Discoms During the transition period, the Transco bought power for all the consumers of Delhi and this was sold at the different BSTs to the three discoms. How will the discoms source the power they require. Because Transco is the SLDC, it will not be able to trade in electricity and it seems that the discoms will have to procure their own power. This raises the question of what will happen to the various PPAs that are held by Transco and are used to procure power for Delhi. This question becomes particularly important because of the very large power shortage in the Northern Region which limits the availability of power.

## 9. Salient Observations

Having provided a summary of our analyses of the critical issues in the performance of the Delhi discoms after privatization, we now give our salient observations and the lessons we think are to be learned from the experience with restructuring in Delhi.

### 1. No real competition in privatization of Delhi Discoms

In the case of Delhi, although half a dozen companies showed an initial interest in the process, at the final stage only two bidders submitted bids. Furthermore, these two parties' bids for loss reduction were lower than the Government stipulated minimum (about 20% in five years). Moreover, the loss reduction trajectory projected by these two bidders were quite similar. All these factors indicate that there was no real competition in the privatization of the Delhi's discoms.

Both the lack of interest in the distribution assets in Delhi and the less-than-ambitious loss reduction targets may be a reflection of the level of risk that is perceived by potential bidders. The difficulties in Orissa of reducing losses may have made the private players more cautious. Further, the bids may have been low because of the financial risk to the discoms of under-achievement in loss reduction. In the case of Delhi, a discom has to bear the entire cost of under-achievement in loss reduction which amounts to 20 to 30 crores for each percentage point that the discom misses its target.

However, with the experience in Delhi, particularly with NDPL exceeding its target loss reduction and in AP where T&D losses are being reduced significantly, the perception among potential bidders may change to some extent, and help in raising the benchmark of what can reasonably be expected from a well-managed loss reduction program.

### 2. Significant Reduction in Losses

Loss reduction has been a particularly recalcitrant problem for the Indian power sector. So it is a significant achievement that the privatised discoms have succeeded in reducing AT&C losses. Though the loss reductions in the first two years were limited, the performance of NDPL in the third year indicates that by the end of transition period

the discoms are likely to achieve loss reductions beyond their respective targets. In fact, the loss reductions that have already been made over the three years since privatization have resulted in savings of about Rs. 880 crores for Delhi consumers.

### 3. Financial Turnaround – On the Right Path but Big Challenge Ahead

One of the critical features of the power sector restructuring in Delhi has been the large financial support provided by GNCTD. Through the transfer / restructuring scheme the GNCTD provided clean balance sheets to successor companies. In this massive financial reengineering process, nearly all past liabilities (around Rs. 19,000 Cr.) were taken over by GNCTD (i.e. essentially written off). Additionally, the government provided Rs. 3450 Cr. as transition support (over a 5 year period) and also contributed Rs. 886 Cr. towards employees pension trust.

As a result of this financial reengineering and significant AT & C loss reduction, the discoms have made considerable progress in terms of achieving financial self-sufficiency and ability to pay full costs.

But in the coming years aggressive AT & C loss reduction will still be required to meet the goal of discom's financial self-sufficiency. This is because, unlike the first three years of the transition period, in coming years, the cost of power purchase is likely to increase. This coupled with start of repayment of the HoldCo loan by discoms and a progressive increase in discom costs is likely to necessitate continued tariff increases. Future tariff increased could be moderated only if there is significant reduction in losses or if GNCTD decides to provide a further subsidy or loan . But in that case, one of the basic goals of restructuring and privatization – financial self-sufficiency -- will not have been achieved.

In short, the promised turn around of the Delhi's power sector is likely to take more time and resources compared to the estimates made at the time of restructuring.

### 4. Shortcomings in regulatory oversight

The analysis presented in this report clearly brings out the shortcomings in the regulatory oversight of the Delhi power sector. For example, the serious and large scale discrepancies in the consumption patterns as well as billing rates presented in chapter 7 of this report should have been noticed during the regulatory process and timely remedial action should have been initiated. Another example of a regulatory shortcoming is the lack of adequate and timely attention to quality of service issues. In the case of capital expenditure too, though the commission initiated some highly desirable measures (e.g. site visits), there is no mention in tariff orders of either why DERC felt the need to initiate site visits or what was the outcome of such site visits. Also in spite of Delhi Transco pointing out that the capital cost claims of some discoms appear high compared to market rates, the tariff order is silent about commission's action on this issue.

## **10. Lessons from the Post-Privatization Performance of the Delhi Discoms**

### 1. The use of AT&C losses as a measure of efficiency is not fool-proof

It is tempting to think that the use of AT&C losses as an efficiency measure reduces the need for regulatory oversight on the assumption that only input energy and collected

revenue need to be checked. However, incorrect billing data can result in an incorrect estimate of AT&C losses even if the input energy and collected revenue are correct (See Box I of Chapter 7 of the main report). Thus the use of AT&C losses does not obviate the need for regulatory vigilance with respect to several items such as revenues, consumption, and ABRs. The analysis and discussion in chapter 7 of this report amply demonstrates the need for such improved scrutiny and the consequences of delayed or lax scrutiny.

Other measures of efficiency improvement have been suggested such as the use of revenue per unit input. Even these require regulatory vigilance. If the revenue per unit input is used, then the SERC must ensure that the discom is not favoring its high-paying consumers at the cost of lower-paying consumers or that the discom is not compromising on quality of service or overcharging! Similarly, even in the case of other suggested approaches such as distribution margin, the need for effective regulatory oversight remains.

Another difficulty that the AT&C approach introduces is artificial merging of two very different and unconnected parameters of T & D losses and collection efficiency. Improvements in these two parameters entail quite different approaches. While quick improvements in collection efficiency may be feasible through better managerial processes, reduction in T & D losses over a long term may require sustained actions and investments.

In this context the provisions of National Tariff Policy asking SERC's to undertake third party data validation merits particular attention.

## 2. Need for validation of metering, billing, and collection systems

Metering, billing, and collections systems are the backbone of the distribution business and are crucial to meet the information requirements of the regulatory process. It is essential that the software and processes used for these purposes are error-free and reliable. In order to ensure this, measures such as periodic third party audit and certification, software design and quality standards need to be implemented.

## 3. Need to ensure that efficiency gains are not eroded by increasing costs

The analysis presented in this report demonstrates that distribution costs have decreased when considered in terms of Rs./ realized kWh (i.e. after considering effect of loss reduction), but in absolute terms distribution costs have shown an increasing trend. The discoms' capital expenditure plans have a significant bearing on distribution costs. Hence, it is essential for the regulatory process to ensure that, in the medium to long term (i.e. when easier efficiency improvements are being made) efficiency gains are not eroded or overshadowed by an increase in distribution costs.

## 4. Need for stringent monitoring of capital expenditure and quality of service

The magnitude and appropriateness of capital investments by distribution licensees are important parameters to evaluate the performance of discoms. On one hand substantive investments in new equipment may be required to upgrade the system and improve the quality of service for consumers and to improve efficiency. On the other hand, very large capital investments are likely to result in significant increases in retail tariffs. Therefore, it is important to ensure that appropriate and essential capital investment is

carried out while unnecessary capital expenditure is avoided so that increases in tariffs are moderated.

With this perspective SERCs need to pay particular attention to the appropriateness and level of capital expenditure proposed by discoms. It is important that the annual capital expenditures by companies be consistent with a long term plan, vetted through a public process in order to ensure that the capital expenditures are necessary and least cost. Furthermore, there is an urgent need to develop benchmarks and database of capital costs of different equipment to ensure that costs are not inflated. The Forum of Indian Regulators or Ministry of Power or CEA need to take the initiative in this matter at the central level to enhance quality and effectiveness of such benchmarks and databases. SERCs also need to develop sound data management systems to track different capital expenditure schemes by discoms, and most importantly, all this information and database should be made public through Internet. Such an approach, would increase the scrutiny of this crucial cost component of regulated companies, and would foster greater transparency and hence public confidence in the regulatory process.

Without this level of regulatory scrutiny on capital expenditure, increases in discom costs may erode the benefits of loss reduction.

Similar to capital expenditure, quality of service issues also need more detailed scrutiny. Like many other SERCs and as required by the E. Act 2003, DERC has also put in place a QoS framework in terms of supply code, standards of performance and grievance redressal forums. But as discussed in chapter 8, there exist significant gaps in terms of DERC's effective monitoring of QoS. Also DERC has not made much effort to make public the status of various QoS parameters laid out in DERC regulations. There is an urgent need for DERC to institute an effective mechanism to monitor QoS and discom's compliance with DERC regulations. Effective use of information technology will be very critical to ensure this and to take public into confidence on QoS.

##### 5. Need to strengthen regulatory process to meet the challenges of restructured sector

The analysis presented in this report clearly demonstrates the need for significant improvement in the regulatory process, specially in the context of privatized discoms and adoption of multi-year tariff frameworks. For example, regulatory capacity to monitor issues such as, metering, billing and revenue collections, capital investments and quality of service, needs to be enhanced.

This study again highlights the need for more capable and vigilant consumer intervention in the regulatory process. It would have been far more effective and useful, if many of the issues brought out in this report (e.g. discrepancies in sales and billing rates, lack of QoS monitoring) were studied earlier and appropriate regulatory interventions initiated.

Information management is another area that requires urgent attention. During the course of this study we interacted with DERC on several occasions to seek information and documents submitted by discoms in earlier ARR processes. Many times we found that the commission staff had difficulties locating documents and at times had to rely on the discoms to update DERC records. With the number of licensees increasing, SERCs will typically have to process three or more ARRs at a time. In that scenario unless sound information management systems are put in place, it will be difficult for the SERCs to cope with deluge of information in the ARR process, leading to high chances

of weak regulatory oversight. The recent initiative of establishing Regulatory Information Management Systems (RIMS) is a welcome step in this direction. To make this more effective it is essential to involve consumer groups at the design stage itself and to ensure that the entire system is designed to make all information available to public.

In many cases, the regulatory processes of DERC have not been transparent (See Box III in Chapter 7 of main report). At times even simple actions such as putting the publication date on the order are not carried out. DERC also does not make public the spread-sheets that underlie its calculations. This is a major limitation of some commissions in the country. This allows mistakes / errors of the commission to go unnoticed and makes it difficult to analyze commission orders. Further, the observations and conclusions of the site visits to verify the capital works have not been made publicly available.

Another critical area that needs urgent attention is the ‘institutionalization’ of regulatory processes within the Commission. DERC has seen a large turnover of key technical staff and has been depending on consultants extensively. It appears that in this process the institutional memory as well as information management have suffered seriously. DERC’s inability to provide comments on our draft report highlights this. We had circulated a draft version of this report to DERC (amongst others) for comments. Though the report raises serious questions about consumption and average billing rate patterns, unfortunately DERC could not explain why it failed to scrutinize these issues during the ARR process. Such instances clearly highlight the need to ensure that SERCs adopt sound human resource development policies with the aim of long term institution building rather than just looking at a 5 year tenure of commission members. Related to this is the issue of ensuring that vacancies in the Commission (Chairperson and Members) are filled in a timely manner so that there is a continuity in the decision making and institutional memory is strengthened.

- - - X - - -