

Reforms, Restructuring, and Infrastructure Sector: A Study of Initiatives in Orissa Power Sector

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In 1994, the Government of Orissa initiated power sector reforms and restructuring. The reform programme resulted in vertical unbundling of the state-owned integrated electric utility, corporatization of the resultant entities, and constitution of an autonomous regulatory commission for power sector regulation in the state. One of the key features of the reform programme was the privatization of distribution activity. To make the process successful and obtain more revenues, there was a need for the distribution entities to change the existing culture and approach to management. The Government of Orissa undertook a process of organizational strengthening to develop appropriate organizational structure, systems, and business processes suitable to the new environment. This study describes the various strengthening measures implemented by Grid Corporation of Orissa to make it commercially viable and function effectively in the new environment following power sector reform.

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Following the economic liberalization in the early 1990s by the Government of India, several infrastructure sectors, which were earlier restricted only to the public sector or the government, were liberalized to facilitate private sector participation. In keeping with the policies of economic reform, many states took measures to reform and restructure their power sector to attract private investment and improve the financial performance of the State Electricity Boards (SEBs). Orissa was the first state in India to implement a power sector reform programme.

The Government of Orissa initiated power sector reforms and restructuring in 1994. As an outcome of the restructuring process, separate entities were created for generation, transmission, and distribution activities. Starting from 1996, several institutional strengthening measures were introduced in the new entities to make them commercially viable and function effectively in the new environment following power sector reform. These measures were a prelude to the subsequent successful privatization of the new entities.

Orissa Power Sector

State of Orissa

Orissa has a total area of approximately 152,200 sq. km. According to the 1991 census, it had a population of approximately 32 million. It is a region rich in minerals, has 18.4 per cent of India's total mineral reserves, and contributed 8.7 per cent of total national mineral production in 1995-96. Only a small proportion of these mineral resources had been exploited. Orissa also has large hydro resources. The state has four large rivers which covered most part of the

state, with a total catchment area greater than 20,000 sq. km.

Agriculture is the largest sector of the economy of Orissa, though it accounts for only a relatively small proportion of electricity consumption. Agriculture contributes 50 per cent of the Net State Domestic Product and employs nearly 70 per cent of the main work force. The overall growth of the Net State Domestic Product in real terms since 1981 was 3.2 per cent per annum. The most rapid growth was in the secondary (industry, construction, electricity) and tertiary (transport, communication, trade, storage) sectors, which averaged over 8 per cent per annum.

Orissa had a total generation capacity of about 3,800 MW under various hydel and thermal power stations, out of which 38 per cent was from hydro power stations, 23 per cent from thermal power stations, and the remaining from captive power plants and purchases from other states. In 1996-97, the transmission system consisted of 8300 circuit km of transmission lines of various capacities. The distribution system composed of 111,000 circuit km of distribution lines of various capacities.

Table 1 gives the various categories of consumers and their power consumption for the year 1995-96. Table 2 gives details of the electricity billings in volume terms broken down by consumer category.

Table 1: Particulars of Consumers and their Consumption for the Year 1995-96*

<i>Consumer Category</i>	<i>No of Consumers</i>	<i>Consumption in MU</i>
Domestic	1010568	1046.926
Commercial	164695	273.157
Industrial	27953	2792.053
Public Lighting Irrigation and Agriculture Public Water Works	3777	52.079
	57013	174.875
	1340	91.257
Railway Traction	10160	130.754
Bulk Supply	8328	544.496
Public Institution		73.297

*OSEB Annual Administration Report, 1995-96.

Table 2: Consumer-wise Billing for the Year 1999*

<i>Consumer Category</i>	<i>Billing (%)</i>
Domestic	12.6
Commercial	6.3
Industrial	71.0
Railway Traction	5.1
Public Undertakings	3.2
Agriculture	0.9
Domestic Bulk Supply	0.9

*Background Information — Privatization of Electricity Distribution in Orissa, p 19.

Institutional Arrangements Before Reform

Before the reforms, the responsibility for power sector management and development in Orissa rested with the following: (1) Department of Energy, Government of Orissa; (2) Orissa Power Generation Corporation (OPGC); and (3) Orissa State Electricity Board (OSEB).

The Department of Energy, Government of Orissa was responsible for policy and planning for the power sector. It also owned some of the hydro power generating stations, and supplied power to OSEB.

OPGC was created by the Government of Orissa in 1984. It operated two thermal plants with a capacity of 420 MW at Ib Valley in Orissa. It sold the power generated to OSEB for distribution to consumers.

Orissa State Electricity Board (OSEB)

Established in 1961, OSEB was the main body responsible for power sector development in the state. OSEB was vested with the responsibility of public power supply in the entire state as well as for related state level regulation. OSEB obtained the required power for distribution either from its own generating stations or by purchasing from other generating utilities. By using its transmission and distribution network, it supplied power to the end consumers.

OSEB was owned by the Government of Orissa and was governed by the provisions of

the Electricity (Supply) Act, 1948. The 1948 Act explicitly required the SEBs to operate and adjust their tariffs to achieve a minimum return after interest of 3 per cent on net fixed assets in operation. According to the provisions of Electricity (Supply) Act, 1948, state governments were required to provide subsidies to help the SEBs meet their minimum return requirements by compensating for the low tariffs charged for residential and agriculture consumers.

Performance of OSES

The performance of OSEB in terms of plant load factor and transmission and distribution losses had been quite poor vis-a-vis other SEBs during the period 1991-94. During this period, Orissa also had a considerable power deficit which was estimated to be in excess of 10 per cent, higher than the all-India average of 8 per cent.

The transmission and distribution losses though stated to be around 24 per cent by OSEB were reported to be much higher. This was also confirmed by one of the senior executives:

The losses in Orissa are as high as 50 per cent. Out of every 2 units of electricity that is purchased or generated, revenue comes from only one unit.

A clear indication of the large transmission and distribution losses was made in the *Annual Administration Report* of the Grid Corporation of Orissa (GRIDCO) which listed such losses as 49.47 per cent.¹

In 1993-94, the ratio of customers served to the employees of OSEB was 29, whereas the all India average was around 80.² The billing and collection of OSEB had been poor because a large portion of the billing was not done on the basis of metre reading but on average consumption or on load factors, which resulted in lower collection revenues. Figures available for 1996-97 indicated that only 12.19 per cent of the total bills were based on metre reading.

¹ GRIDCO *Annual Administration Report*, 1996-97, p 55.

² Source: Comparison of Performance of Electricity Boards and Electricity Payments, Planning Commission, Government of India, 1994.

Lack of appropriate controls and poor accounting of sales revenues had affected revenue collection. Figures available for 1998 indicated that in some of the revenue divisions, the percentage of billings collected was as low as 17 per cent. Unmetered supply to a large number of consumers and theft of power resulted in non-technical losses³ being as high as 20-25 per cent.

The financial performance of OSEB in the years preceding 1994 is given in Table 3. In spite of an annual average growth of about 19 per cent in sales revenue, OSEB had not been able to earn the statutory rate of return of 3 per cent on net fixed assets without subsidy from the Government of Orissa because of its very low level of tariffs. In spite of the sales revenue not being able to meet the operating costs, there was no tariff increase from 1990 to 1992.

Table 3: OSEB's Financial Performance (1990-94)*

	1990	1991	1992	1993	1994
Sales (Rs Million)	3805	4175	5489	6186	9597
Average Tariff (p/kWh)	66	68	65	77	95
Average Cost of Supply (p/kWh)	74	71	83	99	147
Receivables (Days)	161	186	167	160	93
Payables (Days)	402	333	305	257	333
Provision for Bad and Doubtful Debts (Rs Million)	18	2	343	172	1189
Subsidy Due (Rs Million)	260	121	849	1110	2260
Subsidy Paid (Rs Million)	0	260	0	452	538
Subsidy Due/Revenue(%)	9.0	3.6	23.3	26.5	39.4
Rate of Return (ES Act)	3.5	3.4	2.9	2.9	2.9

*Source: *OSEB Annual Reports and Staff Appraisal Report*, World Bank.

³ There are two types of power losses during transmission and distribution: technical and non-technical losses. Technical loss is the energy lost in the wires and equipment in a distribution system for technical reasons like resistance. Non-technical loss or commercial loss occurs due to theft, non-metering or defective metering of consumers, and inefficient billing and revenue collection systems.

Orissa Power Sector Reform

In 1993, the Government of Orissa had discussions with the World Bank to improve the operational and financial performance of OSEB and to attract private investment for power sector development in Orissa. These discussions resulted in an agreement between the Government of Orissa and the World Bank to implement a power sector reform programme in order to secure funding for the sector.

The Orissa power sector reform programme comprised the following components:⁴

- *Restructuring of OSEB by Corporatization and Commercialization:* This involved unbundling and structural separation of generation, transmission, and distribution into separate services to be provided by separate companies.
- *Privatization:* This meant private sector participation in hydro generation and grid corporation, and privatization of thermal generation and distribution.
- *Competition:* This involved procurement of new generation through competitive bidding.
- *Separate Regulation:* This involved development of an autonomous power sector regulatory commission.
- *Tariff Reform:* This meant reforming electricity tariffs at the bulk power, transmission, and retail levels.

A chronology of important events in the reform programme is given in Exhibit 1.

Grid Corporation of Orissa

The power sector in Orissa changed significantly after reform. A comparison of the structure of Orissa power sector before and after implementation of reform is given in Exhibit 2. A principal feature of the restructuring process is the vertical

⁴ Taken from the note by Principal Secretary, Department of Energy dated April 4, 1996 on "Orissa Power Sector Restructuring Project: Power Sector Development Policy of the Government of Orissa," to the Director, South Asia Country Department, World Bank.

unbundling of OSEB into distinct entities for generation, transmission, and distribution. The power generation assets of OSEB were vested in a separate entity which was incorporated as Orissa Hydro Power Corporation (OHPC).

The transmission and distribution assets were vested in a separate entity, which was incorporated as Grid Corporation of Orissa (GRIDCO). GRIDCO, initially owned by the Government of Orissa, was incorporated on April 20, 1995. It was responsible for transmission, coordination of system planning and operations, and initially, for distribution and bulk power procurement also. It started functioning from April 1, 1996 after the transfer of assets of OSEB to GRIDCO. GRIDCO signed a corporatization agreement with the Government of Orissa which gave full autonomy to GRIDCO to operate in an efficient, economic, and commercial manner.

One of the key features of the power sector reform programme was the privatization of distribution activity. Distribution was the first activity that was to be privatized. The distribution set-up of the Orissa power sector is shown in Exhibit 3. The entire state was divided into ten distribution circles. A Chief Engineer was in charge of 3-4 circles. A Superintending Engineer was in charge of each distribution circle. Each circle was usually made up of 3-4 electricity divisions, with the division being manned by the Executive Engineer. Each division had 3-4 sub-divisions, each under an Assistant Executive Engineer, and 3-4 sections made up a sub-division, each under an Assistant Engineer.

To facilitate private participation in the distribution activity, Orissa was divided into four geographical distribution zones each consisting of 3-4 distribution circles. Each distribution zone was initially incorporated as a subsidiary of GRIDCO.

Distribution Operations Agreement

As a first step towards privatizing distribution, GRIDCO entered into a management contract

called the Distribution Operations Agreement with Bombay Suburban Electricity Supply company, a private sector company, to take over the power distribution in the Central Zone, which comprised Bhubaneswar (the capital of Orissa), Cuttack (the previous capital and currently a major commercial centre), and Dhenkanal distribution circles with effect from October 1, 1996. According to this arrangement, the private utility was responsible for distribution of energy, maintenance of the distribution system, and collection of electricity dues in the Central Zone. Though the initial distribution agreement was for a period of three years from October 1996, GRIDCO cancelled the agreement in April 1997 as it claimed that the private utility had shown a negative incentive of Rs 28 crore over the 6-month period between October 96 and March 97.

It was later felt that the main reason for such development was because of the drawbacks in certain contractual provisions in the distribution operations agreement. First, the private utility had to manage the distribution business with over 8000 employees and engineers over whom it had no administrative control. Second, the distribution operation agreement cast no contractually enforceable obligation on the private utility while GRIDCO was required to make payments on a regular basis.

After the failure of the Distribution Operation Agreement method for introducing private sector participation in distribution, the Government of Orissa decided to privatize distribution forming the four zones as separate distribution companies. The four companies were incorporated as subsidiaries of GRIDCO in November 1997 and four new Managing Directors were appointed for these four companies during March 1998.⁵

Privatization was to be introduced in distribution by offering 51 per cent of the equity in these companies to private investors. The investors were to be selected through international competitive bidding on the basis of their financial and technical capability, track record,

"The GRIDCO Newsletter, March 1998.

and commitment to the improvement of the electricity distribution system. Though the investors were to be given full managerial autonomy, they were required to honour the terms and conditions of employment of employees of the distribution companies. After privatization, GRIDCO would hold 39 per cent of the equity in the distribution companies, while 10 per cent of the shares was for the employees.

Commercialization and Preparing for Privatization

In order to make the process successful and increase the revenue collections, there was a need for the successor organizations to change the existing culture and approach to management. The newly formed utilities, being the offsprings of the erstwhile Department of Energy and OSEB, were large bureaucratic organizations. But, in the new environment, GRIDCO needed to be a customer-oriented viable entity. Therefore, the Government of Orissa undertook a process of organizational strengthening of GRIDCO to develop appropriate organizational structure, systems, and business processes suitable to the new environment. These strengthening measures were implemented in the interim period between corporatization and privatization. This section details the various strengthening measures adopted by GRIDCO.

Making GRIDCO a More Commercial Organization

OSEB was traditionally considered as an engineering organization. The engineers of OSEB were primarily concerned with maintaining the network and supplying power to the consumers. The top management felt that the employees did not concentrate on the commercial aspects of running a business. One of the main steps taken in this direction was the increased focus on revenue generation.

Several measures were taken to reduce the revenue losses that occurred due to non-technical losses. Numerous drives were conducted to check theft of electricity. A study conducted

on commercial losses in Rourkela, Balasore, Jeypore, and Bhubaneswar circles showed that in large industries alone, losses due to defective or tampered metres ranged between 5 per cent and 19 per cent. In medium industries, the figure was between 13 per cent and 55 per cent, and in the commercial sector, the losses were between 32 per cent and 60 per cent. In an attempt to curtail such practices, GRID CO called for a crackdown on non-paying consumers and recovered their dues. About Rs 117 million was recovered in one circle alone in one of the revenue recovery exercises. A metering programme was also undertaken to improve revenue collection, which included repairing or replacing defective metres.

To underscore the importance of revenue, a bi-monthly revenue review meeting was held at which divisional managers made presentations and discussed their revenue performance with the Chairman. These revenue review meetings were attended by the Chairman and Managing Director, Divisional Managers, Circle Managers, Zonal General Managers, and Consultants. Targets for revenues were fixed during these revenue review meetings. Before restructuring, the targets for revenue and profit performance were broadly based on a simple percentage improvement over the previous year. This practice changed after the corporatization of GRID CO. The targets were fixed as a percentage of input units that had to be billed and the percentage of billings that had to be collected. The targets also became division-specific, as the targets were defined in relation to the mix of consumers in the division. As one of the consultants remarked:

A lot of attention was given to the revenue meetings as about two weeks were spent on these meetings every two months.

Previously, there was not much attention given to the revenue collection process like the quantum of billing being done, the amount billed, and the payment of revenues. But, after the revenue reporting system, the process of revenue collection was done in a much more systematic manner.

To improve accountability, the practice of profit centre accounting was introduced. The initial idea was to identify the profits and losses of each division and to make each division responsible for the profit. This was entirely new to GRID CO engineers, as they previously did not know the amount of power that was consumed by each division. But, after corporatization, energy metres were installed for each division, which measured the power flow for each division. Identification of power flow ensured that billing was done accordingly, thereby improving accountability.

GRIDCO also improved the computerized billing system and rationalized the billing agency structure, as a part of the revenue improvement measures. It installed a new computerized billing system, which included the use of more advanced techniques than those in use previously. Computerized billing agents were appointed in each circle to undertake the billing activities. The role of these agents was to take the metre reading, generate the electricity bill, and distribute the bill to the consumers.

To enhance revenue collection, there was a bifurcation of engineering and commercial functions at the divisional, sub-divisional, and section levels. Separate lines of responsibility were set up for commercial and engineering activities. A consultant described the need for creating two separate lines as follows:

The commercial function was split from the engineering function mainly to reduce the opportunity for fraud. Previously there was a huge amount of fraud going on in the organization. Some engineers used to obtain illicit payments from the consumers without appropriate billing. When they had both the functions together, they concentrated only on those functions which they enjoyed doing or in what they were good at. This is a natural tendency of humans. Being engineers, they tended to ignore other functions. So we split the functions, so that each gets the benefits of specialisation.

Creation of New Departments

The OSEB consisted of a full time chairman and three members for each of the following areas: generation, transmission and distribution, and finance and there was a member secretary who looked after the administration. Traditional departments that should have been a part of any organization were absent in OSEB.

Following restructuring, efforts were taken to fulfil that gap. Many new departments were created and the existing departments were split up for greater attention. New departments were set up for Human Resources, Corporate Planning, Management Information Systems and Information Technology, which were considered necessary for efficient functioning in the new set up. Simultaneously, to provide more attention, some of the earlier jobs were split into two to increase the efficiency of the corporation. The Transmission and Distribution Department was split into two, with separate directors for transmission and distribution.

Decentralization

An important activity undertaken to aid privatization was to design systems and procedures that enabled these distribution subsidiaries to function as stand alone companies, which could later be sold. One of the main routes to make them stand alone companies was to devolve decision-making in the four distribution companies.

A consultant remarked about the decision-making style at OSEB as follows:

Previously, all the major decisions were taken in the corporate office. There was practically no decision-making at the zonal levels. The decisions were always referred upwards. They were reluctant to take decisions at lower levels. They always looked for collective responsibility and many people were required to put their signatures before the decision was made. This kind of practice resulted in most of the decisions being taken in the corporate office.

Efforts were made by GRID CO to delegate decision-making to lower levels. To facilitate the distribution zones functioning as stand alone companies, powers that were earlier reserved for the OSEB board were delegated to the Managing Directors of distribution zones. Also, within zones, there was a delegation of authority from the top downwards in areas like hiring of transport vehicles, placement of contracts, and purchase of materials. This was expected to lead to faster decision-making and reduce the response time of the organization.

Management Information System

A comprehensive management information system package was developed and implemented by GRIDCO. It contained the following components:

- Corporate financial management information.
- Corporate operational management information.
- Monthly revenue and collection reports.

The corporate financial management information broadly provided information on the monthly operating results of each distribution zone, revenue collection, and consumption trend of various consumer categories. The operational management information broadly provided information on technical aspects like load curve and peak demand, monthly generation, system failures, loss of load due to interruption and upgradation, and addition of new facilities.

The revenue and collection reports were sent every month by each of the 43 revenue earning electricity divisions to the corporate office. These monthly reports provided for each division the profit and loss account, trend in consumption and revenues for different consumer categories, actual billing and details regarding aged debtors, number of defective metres replaced, repairs undertaken, and the disconnections effected.

Previously, during the OSEB period, there was very little management information that was

generated. The audited accounts that came one or two years after the end of the financial year provided only basic financial information about the company. No information was available about the organization till the final consolidation of accounts. There was *ad-hoc* production of reports from time to time depending on the needs of the top management. But, there was no systematic way of generating information like whether the customers were being billed, what was the billed amount, and the amount of revenue collected.

The management information reports which were produced at regular intervals by GRID CO provided up-to-date information about the organization to the management. These helped the management to take various decisions. Immediate action was possible without waiting for the annual accounts. In the words of one of the employees:

This has facilitated the management to think about the organization.

The management information system reports also reduced the scope for data manipulation. As the Chairman of GRID CO said:

"Earlier, there were 60 different formats for revenue reporting. Many formats were *ad-hoc*. For example, formats prescribed in connection with an assembly question. But they were not formally withdrawn. The system was clumsy and it was not possible to detect fudging easily. For example, when I ask how many new connections have been given, the person would say 1000. But when I ask for the list of consumers then that 1000 would not be there in the list. It was very difficult to check the information. But, in the new revenue reporting system, though fudging is possible, it requires a lot of ingenuity. The data are much more closely connected and any discrepancies could be easily checked. Earlier, if it took me 8 hours to check a division's revenue reports, now I can do it in, say, two hours time."

Because the data were closely linked, it was possible to quickly check for any variation in

power consumption. For example, if there was a problem with high-tension category (which included industrial consumers), any change was easily checked by contacting the industry. As the Chairman of GRID CO remarked:

Initially, when I told the Chief Engineers that OSEB was making losses, there was a strong sense of disbelief. But, after the implementation of management information system, I could see it reducing. The implementation of management information system has made them aware of the weakness of the system and helped them identify possibilities of remedial action.

The management information reports had been standardized across the state. This led to an advantage, as a respondent put it, "*where each one now knows what the other is talking about since everybody talked the same language.*" Further, by the revenue reporting system, it was possible to compare the performance of two divisions. That became a very powerful comparison which made the people think as to how one division was making profit while the other was losing. The Chairman of GRIDCO remarked:

I would say that the management information system was an awareness creating measure. It was also a big improvement on the system which was there earlier in terms of accuracy, speed and regularity.

Computerization

Extensive measures were taken to introduce the use of computers and to computerize various activities to improve the work practices in GRIDCO. A new department for information technology was created. Though even OSEB had an Information Technology Department, it was not able to function effectively, as it was headed by an Executive Engineer, who had no specialization in information technology. But the newly created Information Technology Department was headed by a Senior General Manager, an information technology specialist, who was of the rank of Chief Engineer. A senior specialist heading the Department had greater powers to

implement things. The new Information Technology Department was also staffed with information technology professionals which was not the case before.

Creating a separate Information Technology Department also facilitated widespread use of computers in the organization. A member of the Information Technology Department observed:

The computer branch previously was mostly doing data processing work. Whoever wanted to get their data processed gave it to the computer centre which it processed and gave back. There was no user concept. But, today, we are trying to develop a user system, where the user processes data himself depending on his needs.

Several other departments had also participated in increasing the use of computers in the organization. A top management official from the Human Resources Department observed:

Today we are trying to train what we may call the total literate cross-section of the employees with computer awareness.

Ensuring Support from the Employees

An important activity that was undertaken during this phase was to obtain the support of the employees of the organization for restructuring. Restructuring programmes involving large retrenchment of employees would not be successful in the Indian context. As the Chairman of GRID CO observed:

If one is talking about retrenchment, then we can forget about reforms. The workers have a strong union here. May be all the workers would starve to death, but reforms would not happen.

Several rapid measures were taken to obtain the trust of the employees and their support for the reform programme. The Chairman of the corporation publicly issued statements that there would be no job losses following reform. There were broadly two categories of employees in GRID CO — the officers and the non-officers (labour). Different measures were taken to ensure the support of both categories.

Efforts to Ensure the Support of Non-officers

As a first step, about 4766 temporary workers were regularized to send a message to the employees that there would be no retrenchment following reform. Similarly, though the promotion and appointment of the non-executive employees of OSEB were banned since 1992, in order to facilitate development and growth within the organization and to cater to the aspirations of people, the units were allowed to fill up 50 per cent of the existing vacancies caused due to death, retirement, etc. by promotion.

Further, the process of wage negotiations with the unions was finished within 22 days. As explained by the Chief General Manager of Human Resources:

In the 30 years span of OSEB, any wage revision used to take at least 3-4 years, which would be preceded by 2-3 strikes. The employees were disgusted with the state of affairs. For example, there was a pay revision which was due from April 95, but no discussion had taken place on the wage revision till April 97. But, we were able to do the wage revision within 22 days after the negotiation started.

These measures enlisted the support of the non-officers.

Efforts to Ensure the Support of Officers

Getting the support of the officers proved to be more difficult as most of the employees of OSEB were government employees who were deputed to OSEB. As government employees they enjoyed several benefits.⁶ The main concern of the officers was that with privatization

" The terms and conditions of employment of managerial and supervisory grade employees are set out in the Orissa service code, the classification control rules, and the government servants conduct rules. Under the above, employees cannot be compulsorily retrenched. They may not even be dismissed for good cause (except in very serious cases, such as fraud) until they have reached the age of 50. Managerial and supervisory grade employees can, therefore, only be dismissed if they agree to the terms for voluntary retrenchment.

of distribution, they may ultimately be transferred to private companies and that will lead to losing their status as civil servants, affecting their service conditions adversely. Therefore, it was ensured that the new service terms and conditions applicable to them after their transfer were not less favourable or inferior to those applicable to them before their transfer and that they would get full benefits of their previous service for all purposes including terminal benefits.

The government and the top management tried to convince the employees that they were joining a better organization with better job opportunities and career growth. As a motivation measure, a fitment exercise was done which benefited about 80 per cent of the people, where they were promoted to the next higher scale.

In OSEB, engineers who joined as assistant engineers got their promotions after perhaps ten years or more, and there were Executive Engineers who had served for 25 years or more. There was substantial disenchantment among the SEE staff in this regard. To increase the career advancement opportunities in GRIDCO, the number of levels in the organization was increased. As the Director of Human Resources said:

In the government scale, there were 5 levels. Now if we say that an engineer starts working at the age of 23 and works for about 35 years till the age of 58 then on an average, he spends about 8 years at each level. It is difficult to remain motivated for such a long period in a government organization. Therefore, we increased the levels to 10 so that an employee spends only about 3.5 years at a single level. This will provide an incentive for the employee to perform.

Recruitment

There was no freedom for recruitment of technical and executive staff during OSEB period according to the needs of the organization. Following restructuring, the Board of Directors

of GRIDCO had the power to recruit and create new posts according to the requirements of the organization. The heads of newly created departments like Human Resources, Finance, and Information Technology were all appointed through external recruitment.

GRIDCO was largely considered to be an engineering organization. There were about 2500 engineers and only 200 officers with other backgrounds. Even non-engineering functions like Human Resources and Finance were performed by engineers. But, these are separate skilled functions where engineering skills may not be of much help. Following restructuring, people with appropriate skills were recruited to these departments.

Traditionally, promotions in OSEB were mostly seniority-based. The majority of postings at the Chief Engineer level and many of those at the Superintending Engineer level were for very short duration, often at the end of the individuals' careers. Following restructuring, this system of seniority-based recruitment was changed to fixed-term appointments for the senior-most positions. The appointment for the posts of Chief General Manager and above was by selection, which gave due credit to both merit and seniority. The Board of Directors of GRIDCO prescribed the eligibility and conditions to be satisfied for appointment to such grades and the appointments were made initially for a period of three years, which could be further renewed till the officer attained superannuation. These provisions ensured continuity in top management.

New appointments were made in management positions to increase the attention on these functions. For instance, new directors were appointed for Corporate Planning, Transmission, Management Information System, and Distribution. Top management appointments had also been made in departments like Human Resources Development and Information Technology, which were previously headed by middle management personnel with no specialization.

Thus, appointment of top specialists had given these departments more importance.

Designating Engineers as Managers

After corporatization, the engineers of GRIDCO starting from Chief Engineers to Assistant Engineers were designated as Managers. The purpose of redesignation was to introduce a cultural change in the functioning of the organization and to basically inculcate in them a feeling that they had to start functioning as managers rather than only as engineers. This was summed up by the Chairman of GRIDCO as follows:

The main purpose of changing the designation from engineers to managers is that the work expected from them is much broader than engineering or technical functions. For example, a Chief Engineer manages about 2000 to 5000 people. Hardly 20 per cent of the time is spent on technical matters. He has to attend to financial and collection matters, consumer-related issues, and the like. So, one is expected to play a larger role than a pure engineer.

It also served to indirectly break the culture that it was an engineers' organization. It is a purely commercial organization. Though the product that it deals with may be unique, it is still a business organization. So the thrust is to make them feel is that it is not only an engineering job, but is wider in scope.

Training and Development

There was no emphasis given to training activity during the days of OSEB. Practically no in-house training was provided for staff on non-technical subject areas, except for a small project to improve information technology skills. The training carried out by the staff within the officer grades was also very limited. Only the staff at the Chief Engineer and Superintendent Engineer levels underwent formal training in general management skills and these had all been "one-off" events. The largest training (of the limited

amount of training) was directed at the level of Executive Engineer, most of whom underwent training on general management. Nearly 600 Assistant Engineers and almost all Trainee Engineers did not undergo any training in ten years.

Also, there was a lack of formal planning of training requirements and inconsistency in the use of training. But, after restructuring, an annual training need identification programme up to the helper level was done. An annual training calendar was prepared based on the annual training need identification. Training programmes were conducted in four areas, namely, functional and technical, behavioural and developmental, safety and statutory, and quality management

Apart from the above training programmes, management training and functional training programmes were designed specifically to help and support GRIDCO staff throughout the change process. The training activity was considered important, because, there was no retrenchment following restructuring. Therefore, people in the organization had to be prepared, trained, and developed to function in the new environment. As a consultant said:

The training programmes had to create a whole mind set change and culture change.

Looking Forward

Following restructuring, corporatization, and subsequent planned privatization, GRIDCO was required to operate as a commercial enterprise. To achieve this objective, several institutional strengthening measures were implemented. The Chairman of GRIDCO remarked:

Previously, OSEB was an inward looking organization. Today, with all these changes, GRIDCO has become a more outward looking organization.

By the end of 1998, several changes were visible to the consumers of power in Orissa following the implementation of the reform

programme. More attention was given towards better consumer service. The Orissa Electricity Regulatory Commission had been in operation for over two years. Consumers were given an opportunity to participate in the tariff setting process through public hearing sessions conducted by the regulatory commission. The benefits of the reform programme to the final consumer will become clearer with the passage of time.

Lessons from the Orissa Initiatives

Implementation of privatization and reforms results in a new external environment which is characterized by changes in the markets (capital and product markets according to their relevance), introduction of new threats (competition and regulation), and reduction in politically imposed constraints. To maintain congruency with these changes in the external environment, appropriate changes are required in the internal mechanisms of the organization (Parker, 1993). Some of the recent articles on privatization (Wright *et al.*, 1998; Grosse and Yanes, 1998) have highlighted the various changes within the organization following privatization. The performance improvements that occur after privatization can be traced to these various changes in the organization following privatization. Newbery and Pollitt (1997) note that the productivity increases that occurred following the privatization of the British electricity sector are not just derived from plant closures, reduction in employees, and fuel switches, but also is a response to a different management style. Therefore, successful implementation of the changes within the organization in tune with the changes in the external environment becomes important to obtain the benefits out of a privatization or reform exercise.

It has been noted from the experience of privatization that prior to the sale of the public enterprise to the private sector, many governments make a drive to improve the performance of the enterprise. Jackson and Price (1994) call this process as "fattening the calf before taking it to market." Broadly, this process of organi-

zational strengthening has broadly come to be known as institutional strengthening. Studies done on institutional strengthening (Buyck, 1991) had noted that institutional strengthening activity aimed at improving and strengthening:

Organization structure and processes.

Management Information Systems.

Financial management and planning.

Personnel management, staff development, and training.

If the state-owned vertically integrated utility is poorly managed, then the unbundled entities would inherit the poor internal systems and processes of the vertically integrated utility. Such organizations would be very difficult to privatize, as the private sector may not be interested in investing in poorly managed companies. Even if the government succeeds in getting the companies privatized, the revenues it would receive from the process could be much less than what it may receive, if the utilities had been privatized as well managed companies. Therefore, organizational strengthening of new entities is needed not only for their successful privatization, but also for obtaining more revenues from the privatization process.

Organizational strengthening also becomes necessary when there is a significant time gap between corporatization and privatization of the vertically unbundled entities. During the intermediate period, managing the organization as it was in the past would further result in deterioration of its performance. Organizational strengthening is an effort to improve the performance of the organization. Though such strengthening measures could have been undertaken by the state-owned utilities themselves, the necessity for undertaking this exercise is more after restructuring because the utilities do not enjoy the unlimited support of the government as before. They are expected to become financially viable organizations, making it necessary for the utilities to improve their performance.

This study also highlights the need to take into consideration the contextual constraints during reform implementation. The constraints

under which the utilities operate in India are very much different from the developed countries. For example, utilities undergoing restructuring in India do not have the freedom to reduce the manpower as in developed countries. For instance, when Tasmania Electricity under-

took restructuring, it reduced its staff from over 5000 to about 1600 (Nelson and Bowling, 1998). Reduction of manpower following reform may not be politically acceptable in a country like India, unlike other developed countries where such practices are quite common.

Exhibit 1: Chronology of Important Events in the Reform Programme

<i>Period</i>	<i>Event</i>
1992	Government of Orissa, OSEB, and the World Bank discuss the issues and a variety of possible solutions to Orissa's fundamental power problems
November 1993	The Government of Orissa and OSEB agree upon a power sector reform programme which involves substantial privatization and complete separation of the power sector from direct government control
January 1994	Government of Orissa creates a well-structured organization to launch its power sector reform programme
April 1994	Orissa's Council of Ministers formally approve the reform programme Chief Engineer (Power Projects Planning and Development) who was looking after the reform project is given exclusive charge of the work associated with reform and restructuring programme
August 1994	Phase I of the reform programme begins
October 1994	Appointment of MY Rao as the new Chairman of OSEB
February 1995	Completion of Phase I of the reform programme
March 1995	Change in government after the elections and the new government endorses the reform programme
October 1995	Phase II of the reform programme starts, signalling the commencement of implementation phase Bombay Suburban Electricity Supply Company selected to manage the distribution in the Central Zone and further negotiations are being conducted
November 1995	The State Assembly passes the Orissa Electricity Reform Act, 1995
January 1996	President of India assents to the Orissa Electricity Reform Bill
March 1996	Signing of the corporatization agreements by the Government of Orissa with the two new utilities — GRID CO and OHPC Secondment of Assistant Director of Finance, from the institutional strengthening consultants to GRIDCO
April 1996	The Orissa Electricity Reform Act becomes effective
June 1996	Establishment of OERC and Appointment of the members of the OERC
August 1996	Orissa Electricity Regulatory Commission starts functioning

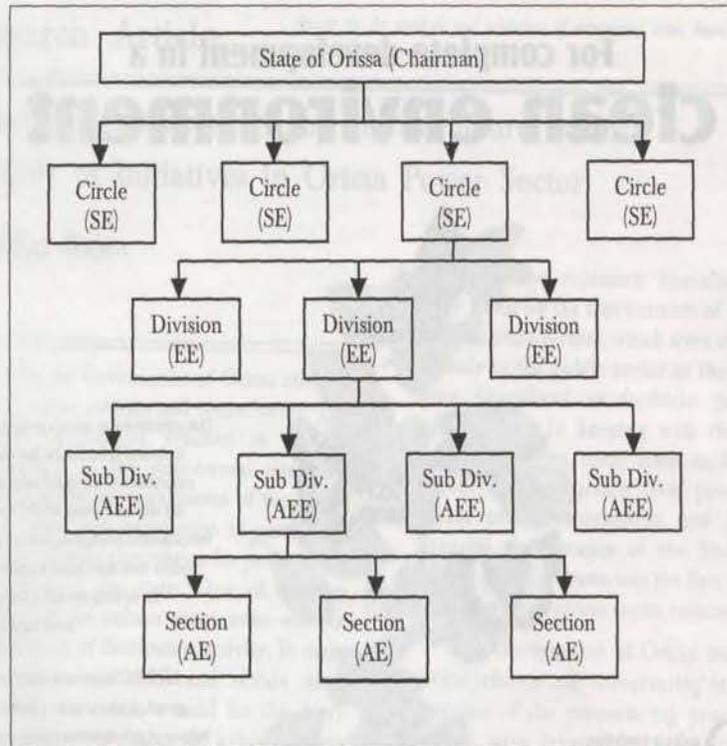
Exhibit 1 Contd.

September 1996	Transfer of power distribution in Central Zone to Bombay Suburban Electricity Supply Company under a Distribution Operations Agreement Appointment of professionally qualified staff through external recruitment for Finance and Information Technology Departments begins
February 1997	Completion of Phase II of the reform programme
March 1997	Phase III of the reform programme begins
April 1997	Termination of the Distribution Operations Agreement for Central Zone with Bombay Suburban Electricity Supply Company Four distribution zones set up as separate distribution subsidiaries of GRIDCO
October 1997	MY Rao retires as Chairman and Managing Director of GRIDCO and is retained in the role of Head of GRIDCO privatization cell and also as a non-executive director
April 1999	Revised schedule for privatization of distribution subsidiaries of GRIDCO

Exhibit 2: A Comparative Chart of Orissa Power Sector

<i>Activity</i>	<i>Before Reform</i>	<i>After Reform</i>
Policy making	Government of Orissa	Government of Orissa
Responsibility for Power Sector Operation	OSEB	Independent Companies were Created for Generation, Transmission and Distribution
Regulation	Government of Orissa and OSEB	Regulated by the Orissa Electricity Regulatory Commission, an Autonomous Body
Distribution	OSEB	State was Divided into Four Geographical Distribution Zones, with Each Zone under a Different Distribution Company
Tariff Structure	Agriculture and Domestic Consumers Subsidized by Industry and Commercial Consumers	Gradual Elimination of Cross Subsidies with Tariffs Reflecting the Cost of Power Supplied
Investment in Power Sector	Mainly by the Government	Most of the Investment in the Power Sector is Expected to Come from Private Sector
Sector Operation	Public Welfare Objectives with Thrust on Rural Electrification	Commercial Principles with Emphasis on Loss Reduction and Revenue Recovery
Cost Recovery	Passed on to the Consumers	Regulatory Authority Ensured that Costs cannot be Automatically Passed on to Consumers

Exhibit 3: Electricity Distribution Set up in Orissa



Legend:

SE - Superintending Engineer
 EE - Executive Engineer

AEE - Assistant Executive Engineer
 AE - Assistant Engineer

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