India Power Reforms Update Issue VIII – May 2004

(Updates in the period: January 2004 to May 2004)

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INTRODUCTION

This edition of India Power Reforms Update is a Prayas initiative under the TNI-Energy project.

Prayas (<u>www.prayaspune.org</u>) is an Indian NGO working in the area of Power sector policy research and advocacy for the past 12 years.

Founded in 1974, the Transnational Institute (TNI, <u>www.tni.org</u>) is an international network of activist-scholars, based in the Netherlands. The TNI Energy Project is a network of NGOs from Africa, Asia, Central and Eastern Europe and Latin America. The project focuses on sustainable development, changing the energy sector policies of Multilateral Development Banks (MDBs), and on alternatives to fossil fuel based energy projects.

India Power Reforms Update (IPRU) is an idea initiated by Prayas along with Public Services Research Unit (PSIRU, <u>www.psiru.org</u>) in 2001. As part of the one year collaborative work between Prayas and PSIRU, four issues of IPRU were prepared in October 2001, January 2002, May 2002 and September 2002. These issues reported key reform updates on an all India basis and covered three focus states (namely Orissa, Andhra Pradesh and Uttar Pradesh) in detail. Though the formal collaboration ended after one year, Prayas continued to bring out IPRU issues and three more issues were brought out in February 2003, September 2003 and December 2003. (All the 7 Issues are available at Prayas website: www.prayaspune.org). These reports have

received extensive coverage and are looked up by many public interest groups as a key reference material. In the year 2004, Prayas proposes to continue this activity under the TNI-Energy Project.

The background and motivation for this initiative was stated in IPRU Issue I:

"Since 1990s, several countries have embarked on fundamental restructuring of the power sector. This restructuring typically involves moving from integrated, monopoly utility structure to competitive industry structure and shift from government / public owned utilities to private utilities. Several groups such as NGO's, Environmental Groups and utility workers' unions have pointed out severe and fundamental flaws and dangers in these restructuring efforts. Often one can find striking similarities in the restructuring path adopted by different countries, critique of the same by various groups as well as the implications of the same.

Further, the mainstream institutions such as multilateral institutions (the World Bank and other Bretton Woods Institutions), financial institutions and multinational companies have been able to learn from these developments across the globe and to evolve effective responses to these developments. Unfortunately, the civil society groups, which are highly critical of these reform processes, have little resources to keep track of developments around the globe and to learn from the same. India Power Sector Reforms Updates is an attempt to fill this gap."

Today, the situation is not very different. Collapse of Enron and the controversies with many other IPP projects have exposed the flaws in the IPP process. Mounting problems in Orissa and the report of the official review committee has faulted the 'Orissa model' of reform. Power sector of many more states have been unbundled and distribution privatised in Delhi in July 2002. As part of consolidation of the market oriented reform, a major policy initiative has been launched by the Central government in the form of the 'Electricity Act 2003' in June 2003. All key policies like Electricity policy, Tariff policy, Open Access etc are being revised. Thus, the onslaught of rapid fundamental changes which have severe long lasting impact on the sector continue. It has become all the more important for public interest groups to stay abreast of the developments and intelligently participate in the policy debates.

In the last two years, IPRU reports have reached many key players in the Indian power sector – mainstream and non-mainstream as well as international observers.

This is a continuation of the 7 issues Prayas has released in the past 2 years and hence this edition is India Power Reform Update Issue VIII. In the previous issues, in addition to covering the major national updates, focus was on the states of **Orissa, Andhra Pradesh and Uttar Pradesh**. From this issue onwards, in addition to these states, **Maharashtra** state will also be covered. Section I of this Issue is on India. Sections II to IV cover the four focus states. In all cases, a brief overview of the sector is given, which is followed by the reform updates. We plan to bring out these issues once in 4 months. Subsequent issues will have reform updates for those 4-month periods.

All issues of the India Power Reform Update are available at the Prayas website. Please send your comments to <u>prayasenergy@vsnl.net</u>.

I INDIA

SECTOR OVERVIEW

Indian power sector has grown significantly since independence in 1947. Table below captures some major parameters of growth. In addition to these quantitative parameters, there has been qualitative growth in terms of engineering expertise and quality of supply.

Growth of the Indian Power Sector			
Parameter	2004 Status	Growth since independence (times)	
Installed Capacity (MW)	11205842	82	
No. of Consumers (Millions)	114	76	
Agricultural Connections (Millions)	13	605	
T & D Network ('000 Circuit km.)	552	188	
Electrified Villages ('000)	508	338	
Per Capita Annual Consumption (kWh)	355	24	

Source: MoP and Planning Commission. Numbers are indicative

This growth was possible due to the conscious plan of the central government with support from the state governments. Except few pockets, the sector was owned and managed by the government all over the country. This growth is no doubt commendable, though there have also been problems in terms of energy and peak shortage, low per capita consumption, low rural access, high T&D loss and low investments in T&D.

Power is a concurrent subject with State governments managing the Electricity Boards and central government looking after bulk generating stations, inter-state transmission and policy matters. The SEB's were performing well till the mid 1980's both in technical and financial aspects. From then, most of the SEB's started showing losses and had no resources to add capacity. Power sector slipped into a crisis with deteriorating performance, high losses and low credibility.

With the beginning of economic liberalisation in 1990s, solutions were sought to the crisis in the power sector. World Bank and other international financial institutions played a major role in the diagnostics and reform plans in the sector. Reform plans intended to introduce private players into the sector beginning with generation. SEB's were unbundled and plans made to privatise distribution. Orissa was the first to do this, as reported elsewhere in this update. Independent Regulatory Commissions were set up. Table below gives the major milestones in the reform process.

Reforms – Major milestones		
Year	Milestone	
1991	IPP Process	
1996	Orissa Reform Act	
1998	Central Electricity Regulatory Commissions Act	
1999	RCs in many States, Distribution Privatisation in Orissa	
2003	Electricity Act	

With these changes, generation capacity by private companies has increased, RC's set up in majority of the states, few SEB's unbundled and distribution privatised in Orissa and Delhi. Table below captures these changes.

Status of Power Reforms in India			
Private Generation	11,000 MW	10% of Total. Only	
Capacity		about 5% by IPPs	
Regulatory	AP, Assam, Chattisgarh, Delhi, Gujarat, Haryana, HP,	18 out of 28 States	
Commission	Karnataka, Kerala, MP, Maharashtra, Orissa, Punjab,		
	Rajasthan, TN, UP, Uttaranchal, WB, Central		
SEB Unbundling	AP, Delhi, Haryana, Karnataka, Orissa, Rajasthan, UP	7 States	
Distribution	Delhi, Orissa		
Privatisation			

Electricity Act 2003, enacted in June 2003 replaces all previous legislations in the sector. E-Act is intended to introduce competition in the sector. Policies in the area of tariff, open access, trading, rural electrification etc are to undergo major overhaul subsequent to E-Act. This process, which was in full swing when the BJP government was in power, has slowed down after elections were announced. The new Congress led government is expected to take a fresh look at these policies.

REFORM UPDATES

<u>Change of Government:</u> The most important update is the general elections held in April-May and the subsequent change in government. The BJP led National Democratic Alliance (NDA) lost the elections and the Congress led United Progressive Alliance (UPA) assumed power in May 2004. The support of the left parties is quite crucial for the survival of the UPA government and hence it is expected that there would be a review of many NDA initiated policies. The Common Minimum Programme (CMP) of the new government released on May 29th, includes this paragraph: "*The review of the Electricity Act, 2003 will be undertaken in view of the concern expressed by a number of states. The mandatory date of June 10, 2004 for unbundling and replacing the state electricity boards will be extended. The UPA government also reiterates its commitment to an increased role for private generation of power and more importantly power distribution".*

Scope of review of the E-Act is still not very clear. The Left parties have demanded changes in the E-Act. They have emphasised the need for differential prices for different sections and opposed the principle of cost-based tariff. Mr. PM Sayeed is the new minister for power and has said that there is no need to review the E-Act. His top priorities are rural electrification and power reforms. As per the E-Act, SEB's were to unbundle by June 9. However, a fresh timetable for unbundling of electricity boards and corporatising the new entities has been announced by the ministry of power for seven states. Himachal, Meghalaya and West Bengal have been granted one-year extension each while Maharashtra, Punjab and Chhattisgarh have been given additional six months each to restructure their SEBs. Assam has been given two more months to complete the unbundling of its SEB.

<u>Task Force report on power reforms and investments:</u> The N K Singh-led task force on the power sector investments and reforms which submitted its report on Feb 3, has given many recommendations in generation, transmission and distribution. The 370 pages long Volume I of

the report with analysis and recommendations is available on the MoP website. Volume II on dispute resolution and Vol III consisting of stake holder presentations are not yet available to the public. Task Force (TF) report makes important recommendations in the banking, finance and fiscal regime. It has given drafts of two important policy documents as annexures: The National Tariff Policy (NTP) and the National Electricity Policy (NEP).

TF report makes key recommendations in the following areas: Fiscal regime, Banking & Finance, Transition Financing, Generation Tariff, Repair & Maintenance, Captive power, Transmission, Distribution, Tariff and Market development. It suggests ideas for raising the money for the capacity addition planned towards 'power for all by 2012'. This includes treating power sector bonds as part of Statutory Liquidity Reserve, raising the RBI limits of exposure of banks/institutions, reduction of customs duty, income tax exemptions etc. TF also recommends break up of NTPC into four regional companies. (This has been rejected by the union cabinet subsequently). Generation tariff is to be fixed through competitive bidding and the rate of return has been fixed as 14% (for generation & transmission and 16% fir distribution, as opposed to the current norm of 16%). TF suggests encouragement of captive generation to overcome supply shortage. Open access is to be introduced for consumers having more than 1 MW load within 5 years, to increase competition. Multi-Year Tariffs are to be introduced for retail tariffs by 2005. Tariff policy is elaborated in the National Tariff Policy. The reports lacks any substantial discussion on rural electrification, which was one of the important items in its terms of reference and also a much talked about government priority.

With the change in government, the recommendations of the TF are put on hold. Many comments have been given on the report and the policies (NTP and NEP). Prayas comments are available at the website (http://www.prayaspune.org/energy/EAct2003_13Prayas_on_TF_3June04.pdf)

<u>Rural Electrification:</u> In February, the union cabinet has approved a Rs 60 billion programme to electrify 1 lakh villages, covering 10 million households, within the next two years. This will be done by merging the three existing power schemes- accelerated rural electrification programme, Kutir Jyoti Yojana and rural electrification component of Prime Minister Grameen Yojana. A village would be considered electrified only if a minimum of 10 households had power connection.

<u>Ranking of States</u>: Like last year, this year too, MoP/PFC had commissioned a study of all the states on reform related aspects. This study was done by ICRA and CRISIL and the report released in February. Each of the 28 states has been given marks out of 100 based on the following parameters: external (state government and RC), internal (business risk analysis and financial risk analysis), progress on attaining commercial viability and others (status of information systems etc). Table below captures scores of the top few states. Score of 2004 and 2003 studies are given. Brackets beside 2003 the score give the rank in that year. It can be seen that Delhi tops the list with 57 points, followed by AP and Goa. Points of Maharashtra and Orissa states are also included since this report covers those states.

2004 Rank	State	2004 Points	2003 Points (Rank)
1	Delhi	57.00	52.50 (6)
2	Andhra Pradesh	56.75	71.50(1)
3	Goa	52.20	41.68 (12)
4	Karnataka	51.25	68.00 (2)
5	Gujarat	50.99	51.43 (7)
6	Haryana	49.63	64.00(3)
7	Punjab	46.00	45.00 (10)
8	Himachal Pradesh	44.16	49.38 (8)
9	Uttar Pradesh	41.85	42.83 (11)
10	Rajasthan	41.83	64.00 (4)
13	Maharashtra	37.75	60.00 (5)
19	Orissa	20.31	33.00 (14)

As per the report, 18 of the 28 states have Electricity Regulatory Commissions, States which do not have RC's are: Bihar, Chattisgarh, Jammu & Kashmir, Sikkim, Tripura, Meghalaya, Manipur, Mizoram, Nagaland and Arunachal Pradesh.

<u>Power Exchange</u>: It is reported in April that NTPC and PTC are working on the idea of a national power exchange. The CERC has also announced that it will consider forming a power exchange. The Task Force had suggested that the MoP should form the Power Exchange after considering views of all stake holders. The REL trading license application to CERC has a mention of its interest in creating the exchange. Now REL has offered help to government agencies in setting up the exchange. So interestingly there is a debate on who should create the exchange, and this is unlikely to be easily resolved.

<u>Impact of Interim Budget</u> : Interim budget of the union government presented in February has many significant recommendations for the power sector. This includes Reduction of customs duty from 25 % to 10%, Abolition of the 4% Special Additional Duty, Reduction of customs duty on electricity meters from 25% to 15%, Reduction in customs duty on imported coal from 25% to 15% etc. These measures shall bring down the cost of projects and would benefit the companies who source equipment from abroad, typically the Indian arm of multinationals. Production cost for coastal power plants based on imported coal is likely to decline by Rs 0.15 per kWh.

CERC

<u>Power Trading</u>: In February, CERC has issued its final order on inter-state power trading wherein it has prescribed minimum capitalisation norms and has barred takeovers or mergers of licensees without prior approval. Six categories of licensees based on the volume of electricity proposed to be traded have been suggested. The regulations further permit trading on a bilateral basis between the generating company and electricity trader and between the trader and distribution licensee. Licenses are valid for 25 years with the application fee set at Rs 1 lakh. CERC has prescribed a minimum net worth criteria for the various license categories ranging from Rs 15 million to Rs 200 million based on the amount of electricity proposed to be traded. It has also permitted licensees to move from one category to other automatically, subject to condition that the licensee adjusts his net worth and pays the differential amount. The license requires trader to file information on several issues such as point of power purchase, cost and the sale price and the point of sale. In January, the application of Tata Power for power trading license was rejected since Tata Power had not set up a separate entity for trading. Subsequently, Tata Power Trading Company Private Limited (TPTCPL), a subsidiary has been incorporated with a paid up capital of around Rs 20 million for inter-state trading. TPTCPL made a fresh application to CERC in March and in May, CERC has granted the power trading license.

The list of prospective inter-state traders include Tatas, construction major DLF, steel producer Ispat Ltd, GMR Infrastructure Ltd, (a major player in the roads sector and having exposure in power generation), Adani Exports, PTC, Reliance Energy Trading, NTPC's trading subsidiary, Essar Group, Koyela Energy Resources Pvt Ltd, Amalgamated Transpower Ltd and Global Energy Ltd.

<u>Inter-state transmission open access</u>: In February, CERC has issued orders for open access in inter-State transmission, prohibiting discrimination by the SEBs. The Commission divided open access customers into two categories - long term and short term. CERC categorised long term customers as those intending to access inter-state transmission links for a minimum period of 25 years treating existing beneficiaries of regional transmission system as long term ones. All others have been designated as short term customers whose access shall not exceed one year at a time. The short term customers would receive lower priority in case of constraints. The transmission capacity allocation to this category would be based on tariff bidding –starting tariff being a quarter of that paid by long term customers. Hence, this is expected to encourage trading.

<u>Tariff norms:</u> In March, CERC's has announced the new tariff norms. CERC has fixed 14% return on equity on all power projects and said that all future projects in generation and transmission would be structured through a tariff-based competitive bidding process. Depreciation shall be allowed over the "fair life of the assets" at the rate notified by the commission. The normative debt-equity ratio has been kept at 70:30. This one factor is expected to substantially reduce the tariff of large generators like NTPC. Additionally, the performance benchmark for thermal generating station has been raised from a PLF of 77% to 80% and rate of incentive has been increased to 25 paise per unit from the existing 21.5 paise per unit. Performance benchmark of availability in terms of capacity index has been raised to 90% from 85% for purely run of the river hydro power stations.

Tariff and revenues of central sector stations of NTPC and NHPC are expected to drop after this order. In April, it is reported that NTPC is filing a review petition with the CERC.

<u>Competition policy:</u> In April, CERC has engaged NCAER to advise the Government on introducing competition in power generation and transmission. Report is expected to be submitted in June.

Major updates from States

<u>KSEB- first open access</u>: In the first case of open access, Indal (a Aditya Birla group company), approached the Kerala Regulatory Commission in February and was awarded permission for drawing power from elsewhere. Four more companies - Binani Zinc, Carborandum Universal, Indsil Electro Smelts Ltd and Western Indian Plywoods have also apprached the RC. KSEB has projected a loss of Rs 2.4 billion annually in case such mass exodus take place.

<u>Maheswar project:</u> In February, the Comptroller and Auditor General (CAG) has pulled up the PFC for disbursing nearly Rs 1 billion to S Kumar promoted Shree Maheshwar Hydel Power

Corporation between February 1999 and July 2000 for financing the construction of a hydel power station under consortium financing without ensuring the promoter's compliance with stipulations in the loan agreement. The irregular disbursement by PFC can result in a loss of the entire principal amount of Rs 1 billion as well as the interest amounting to nearly Rs 400 million. It may be recalled that there has been consistent opposition to this project by organisations like NBA and the implementation of the project has been held up since February 2001 due to many reasons. (Promoters' inability to bring in further equity, backing out of the foreign collaborators, allegation of diversion of money for other purposes and non-release of further disbursements of loans by other financial institutions owing to default by the promoters).

<u>Indian Railways</u>: To answer the problem of high SEB tariff, the Indian Railways has entered into power generation with the railway minister Nitish Kumar and power minister Anant Geete laying the foundation stone of a 1,000MW (4x250) thermal power plant at Nabinagar in Bihar in February. The Rs 50 billion plant will be set up along with NTPC through a JV company called Bharatiya Rail Bijlee Company. The project will have a debt-equity ratio of 70:30 with the Railways holding 51 per cent.

<u>Distribution franchise</u>: The Reliance Group has bid for 12 of the 13 distribution circles offered by Gujarat government on franchisee model in February. Under the franchisee model, the state government will offer distribution circles only on management contract. As opposed to the existing models of privatisation implemented in Delhi, assets of distribution circles will remain with the state utility and will not be transferred to the private operator. The private company winning the bid for the circle will be required to put in the capital for the modernisation of the system. The rate of return has been pegged at 16% net of taxes for distribution companies under the new tariff order of CERC.

<u>Madhya Pradesh SEB to be split</u>: It is reported in May that the Madhya Pradesh government has decided to split the state power board into five companies on June 1. Of the five companies, three will be electricity distribution firms, one power generation and the fifth a transmission utility company. It has sought a loan of Rs. 11 billion (approx \$ 225 million) for ADB for power reforms. It may be recalled that ADB has already sanctioned a loan of \$350 m to MPSEB.

<u>Post Election Tariff changes:</u> After the elections in May, there have been some major changes in power tariff. As reported in the Andhra Pradesh section of this report, the first action of the newly elected state government in AP was to announce free power to farmers. The Tamil Nadu and Maharashtra governments (there were no state level elections in these states) also have announced substantial reduction of tariffs to farmers and poor house-holds. In all cases the state government is expected to compensate the power utility for the subsidy through budgetary subventions. This step marks a major change in the ongoing direction of 'tariff rationalisation' as part of the reform process. It has been called a short sighted decision and has invited criticism from many.

II ORISSA

SECTOR OVERVIEW

1. STATE OVERVIEW

Orissa is one of the poorest states in India. It is rich in natural resources, but nearly half its population lives below the poverty line. Orissa has the misfortune to be ravaged by natural calamities – drought during summer and floods during the rainy season. Orissa is the pioneer state in power sector reforms in India. Reforms were initiated in 1993 and consolidated when the Congress party was in power. Subsequently, the Biju Janata Dal took over, but the reform process has gone full steam ahead. With nearly 10 years of reform experience, Orissa continues to be one of the most keenly observed power sectors.

Some of the key indicators of the Orissa power sector are given in the table below.

Power Infrastructure Summary 2004		
Total Installed Capacity (MW)	4407	
Energy handled (MU -2002)	12345	
Consumers (Million)	1.7	
Agricultural Consumers	75000	
Villages Electrified	37347 (79%)	
Rural households electrified	17.45%	
Per capita consumption (kWh/year)	354.6	
Employees (approximately)	35000	

Notes:

- 1. Installed capacity and Energy include imported power also
- 2. Employees are spread over GRIDCO (5000), Distribution Companies (24000), OHPC (6000) and OPGC (700). It is reported that number of employees reduced to 26,000 after the reform. Numbers are approximate.
- 3. Source: Website of MoP, OERC

There are a few special characteristics of Orissa state and, specifically, its power sector:

- a) The power sector in Orissa is relatively small with many big bulk consumers
- b) Power consumption by agricultural users is quite small 6% compared to the 30% all-India average in the year 1995. Therefore the level of subsidy to agriculture is quite low compared to other states.
- c) There was a tariff hike amounting to 67% in the period before reforms- 1992 to 1995. When reforms started in 1995, the tariff revenue was sufficient to meet the OSEB operational cost.
- d) Orissa has low levels of political mobilisation and a minor national profile.

All these reasons may have contributed to the coming together of the World Bank, Government of Orissa and Government of India to choose Orissa as the state to launch the reform model.

2. REFORM

Orissa Reforms: Milestones			
Time	Milestone	Remarks	
Nov 1993	Government of Orissa and World Bank agree on the reform plan		
Mar 1995	OSEB Unbundled	Generation (Hydro, Thermal) and T&D	
Apr 1996	Orissa Reform Act		
Aug 1996	World Bank loan agreement	Total amount of US\$ 997 million, (350m from World Bank) over a 5 year period 1997-2002	
Aug 1996	OERC constituted	Many regulations, Tariff orders in Mar 97, Nov 98, Dec 99, Jan 01, Apr 02, Jun 03	
Oct 96-Apr 97	Management contract for Distribution	Central zone given to BSES on Management contract	
Nov 1998	Unbundling of the sector	Two generation companies, one GRIDCO and 4 DISCOMs	
Jan 1999	Privatisation of Generation	Thermal generation to AES	
Sept 1999	Privatisation of Distribution	4 companies privatised: 3 with BSES and one with AES	
Aug 2001	Setback to Distribution privatisation	AES quits and Orissa government takes over Central distribution company	
Oct 2001	Kanungo Committee report	State appointed review committee	

Table below gives the major milestones in the Orissa reform process.

After a few years of the reforms, it became clear that the performance of the sector had not improved as predicted by the architects of the programme. Losses by the state-owned transmission company GRIDCO, piled up, Private distribution companies could not improve the distribution system and the tariff kept rising. In October 2001, the state government appointed a committee headed by S. Kanungo to review the reform programme.

The Kanungo committee report severely criticised the Orissa reform process. Some of its major observations are:

- a) Distribution companies did not bring capital or expertise to Orissa. The T&D loss figures did not reduce to 21% as was planned, but remained at 45%. The collection efficiency also did not improve.
- b) Generation assets were upvalued and this caused a steep rise in generation cost.
- c) The financial health of GRIDCO, the state owned transmission utility, suffered due to many reasons. The private distribution companies did not pay GRIDCO in time, the cost of generation went up and GRIDCO's debt burden went up.
- d) AES, which took over distribution of the Central Zone behaved in a high-handed fashion and ultimately left in August 2001.
- e) Local expertise was neglected and very high amount of Rs 306 crores spent on foreign consultants This figure is comparable to the annual loss of GRIDCO or all the 4 DISCOMs. GRIDCO loss in 1999 was Rs 583 Cr and total loss of 4 DISCOMs in 2000 was 383 Cr.

f) Capital-intensive projects were planned but none completed for a variety of reasons. Investment to the tune of Rs 3000 crores in the next five years may be needed to bring the sector back to health

The state and central governments are now exploring ways to salvage the Orissa power sector. It has been acknowledged by all that the reform model followed in Orissa had many flaws and it cannot be blindly used elsewhere. This lesson has been learned at a huge expense of Rs.4000 crores and six years.

3. PRIVATE GENERATION

As a part of the privatisation of generation, 49% stake in the state owned Orissa Power Generation Corporation (OPGC) was sold to AES in January 1999. OPGC owns and operates thermal power plants in Ib valley.

IPPs were planned in Orissa in 1990's, but none have become operational so far. The only active one is the 3960 MW Hirma project. Its progress has been reported in the previous Issues of updates. As of now, Reliance has shown interest to revive the project.

4. PRIVATE DISTRIBUTION

Four distribution companies were formed in November 1998, as a first step to privatise distribution. Before this, in order to test out privatisation model, it was decided to try out a Distribution Operation Agreement (DOA) model. DOA is like a management contract where a company carries out the O&M activities, while the assets and employees remain with the utility. In October 1996, BSES was awarded a 3 year DOA for the Central Zone of Orissa. Performance of this arrangement was to be reviewed every 6 months. Since there was no improvement in performance, the DOA was terminated after 6 months, in April 1997.

Subsequently 4 distribution companies were formed – CESCO, NESCO, SOUTHCO and WESCO. Assets and employees were transferred to them. In 1998, GoO initiated steps to privatise these 4 distribution companies. Response to the international competitive bidding process was poor. In April 99, 3 companies – NESCO, SOUTHCO and WESCO were handed over to BSES. In September 99, CESCO was handed over to AES. In all these companies, the private company holds the controlling 51% stakes, GoO and employee trusts the remaining 49%.

Performance of all private DISCOMs have been below the set benchmarks. CESCO under the management of AES was the worst. Finally AES left the scene and in August 2001 and OERC issued an order appointing an administrator for CESCO. This arrangement has been continuing ever since.

REFORM UPDATES

1. STATE OVERVIEW

<u>State Elections:</u> Elections to the Orissa State assembly was held along with the Loksabha elections in May. The Biju Janata Dal – BJP coalition led by the Chief Minister, Naveen Patnaik was voted back to power, with slightly less majority than last time. This trend has been unique to Orissa since the BJP led coalition lost the national elections and ruling parties in many other States (AP, Tamil Nadu etc) lost the elections. Thus no major policy shifts are expected in Orissa.

Extension of World Bank Loan: The World Bank loan period was to end in December 2003. Power utilities in Orissa are happy with the World Bank decision to extend the time for the utilisation of the Power Sector Reform Program (PSRP) loan by another six months till the end of June 2004. The World Bank had sanctioned a loan worth \$350 million in 1995 for the Power Sector Reforms Program to be spent over a period of 7 years. According to the loan agreement, Gridco and the four distribution companies were scheduled to complete the reform program by December 2002. However, as the utility companies failed to utilise the amount, the World Bank slashed the loan amount to \$240 million in 2001 and extended the time limit for the utilisation of the loan amount till December 31, 2003. It is reported that about \$10 million was yet to be utilised by December 31 2003.

<u>GRIDCO Loan programme</u>: It is reported in February that Housing and Urban Development Corporation (HUDCO) has agreed "in principle" to subscribe to a the first phase term loan programme of Rs 6 billion of GRIDCO. Gridco proposes to raise Rs 6 billion in the first phase by way of a term loan at lower rate of interest to repay its existing high cost borrowings, namely redemption of the Gridco power bonds, PFC and REC loans. The payment of interest would be quarterly and the contribution towards redemption of the principal amounts will be made through an escrow account, from the revenues to be generated on account of supply of power by Gridco to industrial, commercial and institutional consumers.

<u>Talcher Unit of NTPC</u>: The fifth 500-MW unit of the Talcher Super Thermal Power Project of NTPC has been synchronised on May 13, 2004, about 12 months ahead of schedule. With this, the installed capacity of the Talcher plant has risen to 2,500 MW As per the schedule, this unit was to be synchronised in the month of May 2005. The fourth 500 MW unit was synchronised in the month of October 2003. The ultimate approved capacity of the plant is 3,000 MW coming from 6 units in two stages - stage-I has 2x500 MW and the stage-II comprises of 4x500 MW. As of now, 5 units are operational and the last unit of 500 MW is expected to be synchronised by March 2005.

2. REGULATORY INTERVENTION

2.1 Tariff process

In December 2003, utilities had filed their tariff proposals for 2004-5 with RC. There has been a round of clarifications and supplementary submissions in the past 5 months. It is expected that the public hearing process would be initiated in June 2004 and tariff orders issued by July.

In January, OERC has stayed the operation of its June 28, 2003 order for hike in bulk supply and retail supply tariffs. Though the stay has come as a relief to lakhs of domestic electricity consumers in the state, it raises questions about the tariff process. The commission has decided that the review petition filed by the state government will be taken up for hearing along with the revenue requirement applications of the utilities for the next financial year.

2.2 Post E-Act developments

<u>Ombudsman:</u> As per the provisions of E-Act, OERC has prepared draft regulations for Grievances Redressal Forums (GRF) and Ombudsman. A draft of the regulation dated January 2004 available at OERC site has the following features:

- All Distribution licensees to set up, one Grievance Redressal Forum (GRF) each in each electricity circle (can also be combined for 2 or more circles, if necessary)

- GRF to have 3 members with 3 year tenure
- President to be electrical engineer retired with a rank of SE. 20 years total experience with 10 years in distribution
- One member to be a retired judge with 15 years experience in law
- One member to be a public figure with 10 years experience in accounting, finance, economics, industry, management, consumer affairs or civil service.
- GRF to handle consumer complaints and hold consumer gatherings
- Ombudsman will be appointed by the RC one for each distribution licensee or one for 2 or more licensees.
- Ombudsman will have a 3 year term and will have expertise in engineering, finance, commerce, economics, management, administration or consumer affairs.
- Ombudsman will oversee functioning of the GRF and handle consumer appeals against GRF decisions

Other Regulations

As per section. 181 of The Electricity Act, 2003 and all powers enabling it in that behalf, the Orissa Electricity Regulatory Commission has prepared draft Regulations on the following matters in April 2004. These are available at the RC website and time of 30 days has been given for comments on these.

- a) OERC Distribution (Conditions of Supply) Code, 2004.
- b) OERC (Procedure for filing appeal before the Appellate Authority) Regulations, 2004. This deals with the procedure for filing appeal against an RC order on un-authorised use of electricity.
- c) OERC (State Advisory Committee) Regulations, 2004.
- d) OERC (Licensees' Standard of Performance) Regulations, 2004 (see below).
- e) OERC (Conduct of Business) Regulations, 2004. This is a detailed 170 odd page draft with 70 page of regulations related to RC functions, general rules, license conditions etc. The 100 page long appendices have many forms, license rules (for generation, transmission, distribution and trading), fuel supply adjustment etc.

Draft regulation on Licensee standards of performance is a 16 page document giving the benchmarks, performance targets and compensation details. These are given for power interruptions, power quality, meter complaints, new connections and bills. Table below captures a sample.

Item	Benchmark	Performance Target	Compensation
Power Intern	ruption		
Consumer	Receipt of complaint + 4 hours in	99%	Rs 100, automatic
Fuse failure	urban, 12 in rural		
Line	12 hours urban, 24 rural	95%	Rs 100/consumer, to be
breakdown			claimed
DT failure	24 hours urban, 48 rural	95%	Rs 200/consumer, to be
			claimed
Quality			
Voltage	After complaint within 15 days if	LT (+/- 6%), HT (+6, -	Rs 200/default if no
	no upgradation, 120 days if	9%), EHT (+10, -	upgradation. Rs
	upgradation. Inform the consumer	12.5%), Imbalance	500/default if upgradation
	within 7 days, if not possible.	within 3%	
Frequency	Not mentioned	+ - 3%. Hourly	Not mentioned
		measurement to be done	

The document also details standards for harmonic content, meter complaints, new connection applications and billing complaints. It also mentions sophisticated reliability indices like SAIFI, SAIDI and MAIFI to be computed by the licensee.

3. PRIVATE SECTOR GENERATION

In January, BSES Ltd, the power sector arm of the Reliance group, has written a letter to power ministry expressing their interest in reviving the \$4-billion 3960-MW Hirma mega thermal power project. As we have reported in the previous issues, this project has been dormant for the last two years. According to them, the new EA 2003 has thrown up opportunities to secure credible consumers. Prior to the new Act, Reliance had entered into an arrangement with an intermediary organisation, PTC, to secure power purchase contracts with five States.

In March, it is reported that, AES Corporation has dropped its plan to quit India. This could be due to the E-Act, which allows power sale directly to the customers. Even though AES never officially announced its plan to leave India, it was widely known that the company was on the look out for sale of its 49 per cent stake in Orissa Power Generation Corporation (OPGC). AES is present in India through its arm AES Transpower, which holds 49 per cent stake in OPGC and 51 per cent stake in CESCO, which distributes power to central Orissa.

4. PRIVATE SECTOR DISTRIBUTION

In February, it is reported that Reliance Energy owned BSES Ltd which controls three distribution companies - Nesco, Wesco and Southco - have achieved breakeven in their operations. BSES has been able to pay the bulk power bills in full after meeting the overhead cost and servicing some of the debt liabilities. The 3 DISTCOs had realised a revenue of Rs 1.05 billion in January, out of which it spent about Rs 130 million towards employees salary and other expenditure. It also paid Rs 17.3 million to NTPC towards the interest on the Rs 4 billion bonds issued in its favour.

It is also reported that CESCO's financial performance has also improved, due to the use of Information Technology. CESCO, an AES company currently managed by OERC caters to 8.7 lakh consumers in the politically sensitive eight districts of coastal and central Orissa, achieved break-even in December 2003. Revenues of CESCO, Rs 50.97 crore in December 2003 as against its bulk power bill of Rs 41 crore and overhead cost of Rs 10 crore. CESCO implemented the automatic meter reading (AMR) technology, using the GSM network in a pilot project. It handed over 500 HT consumers to four companies - Udaipur-based Secure Meters Ltd, Nanokernel Ltd of Bangalore, Analogic Techno-matics and Bhubaneswar-based ELMARCH Ltd for monitoring the meters. The four companies, using the software and equipment supplied by Secure Meters Ltd, operated in Cuttack, Bhubaneswar, Puri, Angul, Dhenkanal, Khurda, Paradip, Khurda and Balugoan distribution areas for the whole of December 2003.CESCOhas also firmed up arrangements with Power One Data Inc through Nano Kernel Ltd to provide Power Line Carrier (PLC) technology based AMR solution for online meter reading along with analysis of demand and consumption patterns on a daily basis. Under this, CESCO has already finalised a comprehensive pilot project covering 597 consumers in the Jagatpur circle of Cuttack and also 100 PLC AMR for industrial consumers. The work would be carried out under BOT (build-owntransfer) basis with seven-year deferred payments.

III ANDHRA PRADESH

SECTOR OVERVIEW

1. STATE OVERVIEW

Andhra Pradesh (AP) state took up the AP economic restructuring program from mid 90's with active assistance from World Bank and other international lending agencies. This program covers infrastructure sectors namely power, irrigation, road transport, ports, education and health. With this program, there is a marked shift in the development perspective with increased emphasis on market economy (as opposed to the earlier welfare economy) and the state starting to reduce its role in these sectors. In industry & World Bank circles, AP is described as a 'leading reform state' in India and the Chief Minister Mr. Chandra Babu Naidu who initiated it was described as the 'most dynamic and visionary' Chief Minister. As reported in this update, in the recent election, Naidu has lost and Dr. Y Rajasekhara Reddy, the Congress Chief Minister has assumed office. He has said that reforms would continue with a human face.

In place of the vertically integrated AP State Electricity Board (APSEB), now there are 6 state owned utilities in the power sector. They are APGENCO, APTRANSCO and 4 DISCOMs. Table below gives a overview of the key power parameters of the state.

Power Infrastructure Summary 2004			
Total Installed Capacity MW	9767		
Energy handled MU	45806		
Consumers Million	15		
Agricultural Consumers Million	2.2		
Villages Electrified	26289(100%, from 1990)		
Rural Households electrified	37.5%		
Annual Per capita consumption kWh	391		
Employees	75000		

Notes:

1. Installed capacity is State (6629), Central share (2001) and Private (1137)

2. Number of employees as per old estimate

3. Source: Website of MoP and APERC

2. REFORM

Table below gives the major milestones of power reforms in AP. Reforms were initiated in 1996 with World Bank funding and support. The reform plan prepared by the World Bank envisaged privatisation of the sector to start by 2003. But there has been a slow down in the reform process due to many reasons (see our previous updates). Today, all the unbundled utilities are owned by the state. Private generation has been increasing over the years.

AP Power Sector – Major Reform Milestones		
S. No	Policy Milestone	Time Frame
1	National Policy Shifts	Mid 1990s
2	Private Sector Generation	1990s
3	High Level Committee	1995
4	World Bank Economic Reform Report	1997 (January)
5	Power Policy Statement	1997 (June)
6	Reform Act	1998 (April)
7	World Bank Reform Project Report	1999 (January)
8	APSEB Unbundled	1999 (February)
9	APERC constituted	1999 (March)
10	Distribution Companies formed	2000 (April)
11	Tariff Orders by RC	2000-2004

3. STATE UTILITIES

APGENCO is the generation utility, APTRANSCO the transmission utility and there are 4 distribution companies in the state. These are Central Power Distribution Company Limited (CPDCL), Eastern Power Distribution Company Limited (EPDCL), Northern Power Distribution Company Limited (NPDCL) and Southern Power Distribution Company Limited (SPDCL). In addition, there are 9 Rural Electrci Supply Cooperative Societies (RESCO) in AP. These are Anakapalli, Chipurupalli, Kadri-East, Kadri-West, Sanjay, Sircilla, Atmakur, Kuppam and Rayachoti. RESCOs cater mainly to LT domestic and agricultural consumers. DISCOMs sell energy at subsidised rates to RESCOs. The energy charge for 2004-5 varies from 40-85 paise/unit for the RESCOs and the total projected energy sale is 1121 MU (Total DISCOMs sale for 2004-5 is 34235 MU).

Technical performance of APGENCO has been exemplary over the years. But it has been slowly sliding into a financial crisis due to discriminatory polices of the government. (see this issue reform update section).

Four distribution companies have improved performance in terms of revenues, reduction of commercial loss and quality of service in urban centres. Many feel that the de-centralisation brought in by unbundling has helped in this.

4. PRIVATE GENERATION

A Gas based project under joint sector (private and state owned companies) was planned in AP in 1990's. 5 gas based units were set up by AP Gas Power Corporation Limited (APGPCL) at Vijjeswaram. They add up to a capacity of 273 MW. APGPCL is like a group captive supplying power to its shareholders in proportion to their share holding.

There are 4 major IPPs in the state. GVK, Spectrum, LANCO and BSES totaling to a capacity of 999 MW. Many more gas based projects are on the pipeline. In addition to these IPPs, there are many Mini-Power Plants and Non conventional energy projects in the state.

With the increase in the share of private power plants in the state, the cost of power purchase has been increasing. This has been due to the conditions in the first round of PPAs with the IPPs, the

mini power plants and the non conventional projects. As reported in this issue, efforts are on to correct this aberration.

REFORM UPDATES

1. STATE OVERVIEW

<u>Elections</u>: Elections to the State assembly and Loksabha seats were held in the month of April. In a stunning reversal, the ruling TDP party lost the elections to the Congress party. What surprised every one was the fact that the Congress party and allies won more than 70% of the seats in the State assembly. Chandra Babu Naidu, two-time Chief Minister, projected as the foremost face of reform and privatisation in the Indian and International media, bowed out after 9 years of power. The Congress government, led by Dr. Y Rajasekhara Reddy (YSR) took office in May 2004. The first file YSR signed after taking oath, right at the swearing-in stage itself, was the one giving free power to agriculture.

This election result has indeed been a demonstration of the bottled-up anger and frustration of the vast majority of people in the State against the policies of the TDP government. Whether it is agriculture, education, health, transport, industry or power, the TDP government was pursuing a path of withdrawal of the state and privatisation. The impact of these – in terms of agrarian failure (symptom being the spate of suicides by farmers), disproportionate development of urban centres, growth of costly private hospitals and educational institutions, hike in power tariffs etc have played a major role in this change of government.

However, it is not to be expected that Congress government would go back on all the reform related initiatives in Power sector. The declared plan of the new government is to have 'reform with a human face'. YSR has said that the 'reforms would be continued while safeguarding the interests of the common man'. On the power front, it has announced free power and waiver of power dues to all farmers. It plans to give free power to single bulb households. It plans to review the PPAs with IPPs with a view to reduce power purchase costs.

<u>Free Power:</u> It is reported that supplying free power to all farmers would cost the government Rs. 436 Crores. While power would be free, a consumer service charge of Rs.20/month would be collected from all farmers. One-time waiver of power tariff arrears would cost the State Exchequer Rs 1192 Crores. The plan to supply free power to single bulb poor households is expected to cost around Rs. 65 Crores/year. This scheme may take some time to get implemented.

There have been strong reactions to the AP decision on free power supply. Tamil Nadu has also followed suit and Maharashtra has substantially reduced agricultural tariff. Industry circles are disappointed with this 'populist' measure. But a large majority argue that in the AP context, this measure is a much-needed healing touch for the agriculture sector, which has 70% of the workforce in the state. It continues to be in a crisis with 3 continuous drought years, failure of the rural credit system and problems with the agriculture support systems (pesticide, fertiliser, cropping pattern, support prices, markets etc). Many feel that the impact of free power may not be primarily economic since the loss of few hundreds of crores could be made up by efficiency measures. They feel that the impact would be ecological since free power may lead to indiscriminate exploitation of the already scarce ground water. Discussions are going on about improving subsidy targeting, implementing water usage efficiency schemes and reducing the misuse of the facility. YSR has said that steps are being taken to reduce misuse. One of the initiatives in this direction is the segregation of agriculture and domestic feeders. It is also

proposed to set up `transformer committees' at village and mandal levels for successful implementation of the scheme.

2. REGULATORY INTERVENTION

The founder chairman of APERC Mr. GP Rao retired in March. Till date, the new chairman has not been appointed. Delay could be due to the change of government. The other RC members are Mr. K Sreerama Murthy and Mr. Surinder Pal.

As a follow up of E-Act, in January, APERC has lifted the need to obtain any consent from the government for installing captive power plants or generators of any capacity. This, along with the facility of open access without participation in cross subsidy, is expected go give a boost to captive power generation.

Tariff order:

It was reported in Issue 7, that the utilities had submitted their tariff proposals for public hearing in December 2003. No major hike was proposed. Subsequently, public hearings were held in February at Hyderabad (2 days, for APTRANSCO and 3 DISCOMs) and Tirupathi (2 days for Southern DISCOM). Tariff order for 2004-5 was issued in March. Some of the major issues covered in the public hearings and the order are:

- A total of 424 objections were filed out of which 119 had requested to make presentations
- Many presenters expressed concern about the impact of E-Act, especially related to cross subsidy elimination, captive, group captive and open access.
- High IPP power cost has been a concern of the previous tariff process and APTRANSCO had been asked by the RC to re-negotiate the PPAs. APTRANSCO reported that the progress on re-negotiating PPAs with IPPs has been NIL. There has been some reduction of incentive payments to IPPs.
- The crisis in APGENCO was a major issue of discussion. RC has addressed this in a separate order (see later)
- Cost of power from Non Conventional sources is high (this is also covered later)
- Many objectors demanded free power supply to agriculture
- Agriculture power consumption data estimated using meter readings at sample agriculture DTs analysed by Indian Statistical Institute (ISI) and validated. This validation could be from a 'statistical' angle.
- DISCOMs asked to file 'shadow filings' as per Long Term Tariff Principles (LTTP) formats for 2004-5 and the next tariff filings (for 2005-6) should be as per LTTP format
- EHT loss was estimated by CPRI study as 6.5% when APTRANSCO had projected 8%. RC asks APTRANSCO to study if there is commercial loss in EHT and fixes EHT loss at 7%
- EHT loss target for 2005 is 6.25%, Distribution loss 18.5% and the total T&D loss target 23.6%
- As per E-Act after June, APTRANSCO is not to be engaged in power trading. Considering this, the transmission charge for APTRANSCO is fixed at Rs 84.65/kW/month and energy loss in kind at 6.25%
- After June, PPAs are to be assigned to DISCOMs. APTRANSCO has been asked to make all PPA's available to public in a data room for perusal and photocopying at reasonable charges.
- Pending the transfer of PPAs to DISCOMs, the average bulk supply tariff (BST) at which APTRANSCO sells power to DISCOM is fixed at 1.986/kWh. In order to make the retail tariffs same for all DISCOMs, the practice of differentiated BST is adopted where by the BST varies from 1.663 (Northern DISCOM) to 2.23 (for Eastern)

- Wheeling charges are suggested as 51p/unit plus energy loss in kind (depending on the voltage level and DISCOM). But this is subject to the Supreme Court judgement on the case pending there.
- Total ARR (DISCOMs and TRANSCO) is 9654 Cr. With DISCOMs given an efficiency improvement target of 300 cr, net ARR is 9354 cr. Tariff revenue is 8051 Cr and the shortfall is Rs.1300 crores, expected to be met by government subsidy.
- No change in retail tariff for most categories and reduction of tariff for the subsidising categories.
- No change in tariff for Domestic, Agriculture (flat rate), Cottage Industries, Local Bodies (Street Lighting and Public Waterworks Schemes), General Purpose, LT & HT Temporary, HT Private Lift Irrigation Schemes.
- Marginal reduction in energy charges (1-5%) for Industry, Railway Traction and Commercial. Agriculture metered tariff reduced from 100p/unit to 50p/unit.

Non Conventional Energy tariff:

APERC held public hearings in December 2003 and March 2004 after circulating a discussion paper, proposals of TRANSCO and NEDCAP. It has issued tariff orders for the non-conventional energy projects that will be effective from April 1, 2004. Contrary to the uniform tariff policy followed for all renewable energy projects, the commission this year has adopted a cost-plus approach to determine the tariff and enabled a reduction in power purchase costs of APTransco by Rs 120 crore annually. Due to different types of projects, the commission has announced separate tariffs for each category of the projects. There are about 95 NCE projects in the state covering mini hydel (16), wind (8), biomass (49), bagasse cogeneration (15) and waste to energy (7). The total capacity is about 450 MW. Most of them sell to APTRANSCO while some are captive and some group captive. According to APTransco's ARR filing, the power purchases from non-conventional projects during 2004-5 are expected to be 1,850 million units, up from the current year's purchases of 1,200 million units. APTransco's purchase of 1,850 million units will cost Rs 520 crore. APTRANSCO had suggested a reduction of the tariff from 3.48/unit to 2.30/unit. It also suggested a single part tariff for NCEs.

APERC has said that a two-part tariff system is being introduced for NCE projects, where the fixed-cost coverage is upto threshold levels of plant load factor for co-generation, biomass and mini-hydel projects. The fixed-cost tariffs are based on the year of commissioning. The developers will be entitled to variable cost only, with an incentive, beyond the threshold level. APERC has also asked APTransco not to enter into any fresh power purchase agreements (PPAs) with newly proposed projects unless the issue of fuel availability is settled. However, PPAs already signed would continue as per the existing government of India policy.

In 1999, the APERC had fixed a uniform tariff of Rs 2.25 per unit with an annual escalation of 5% with 1994-95 as the base year for the renewable energy projects. Based on the formula, the price during 2003-04 stood at Rs 3.48 per unit as purchase price of APTransco from all categories of renewable sources. With the current order, tariff would be about 2.80/unit for 3 year old plants and 2.88/unit for new plants.

Non Conventional Energy producers are upset with the order and it is reported that the Biomass Energy Developers Association (BEDA) is considering filing a review petition with the APERC.

APGENCO PPA:

APERC has turned down most of the proposals made by APGENCO its appeal to "rescue" the company and prevent it from heading to bankruptcy. The commission in its order dated March 15,2004 (before the tariff order) pointed that the "commission expects APGENCO to exercise proper control over its expenditure instead of claiming the actual expenditure as pass-through." Commission hearing was held in December 2003. APGENCO in its review petition of its PPA with APTRANSCO had indicated that instead of making profits in the region of Rs 300 crores, the present pricing policy adopted by the state government would result in the company incurring losses of over Rs 2000 crores by 2006. The issues here pertained to the treatment of pension liabilities, vidyut bonds, operation & maintenance expenses, depreciation provisions and payment of fixed charges for the Srisailam left bank power house.

Other updates

In March, the APERC chairman has advised the state government to appoint a committee to study all the issues involved in changing the cropping pattern. The government wants to change the cropping patterns of water intensive crops like paddy to irrigated dry crops. Speaking in the RC advisory board, he said that government subsidy to power sector should be minmised as the money can be used for other important sectors. He also talked about the importance of conservation measures- energy and ground water.

In April, APERC has released a discussion paper on phasing of open access in the state. It gives a 3 phase time table based on MW connected load and voltage level of consumers to introduce open access. The plan is to cover all consumers with greater than 1 MW load by April 2008, that is within 5 years, as suggested by the E-Act amendment. APERC has also released a draft on cross subsidy surcharge in which it suggests the difference between the tariff and cost to serve as the surcharge amount.

The other orders/regulations/review drafts issued by APERC are on the Power Purchase Agreement to be entered with M/s. Krishna Godavari Power Utilities Ltd. (By APTRANSCO, dated 05.02.2004), Constitution of state advisory committee and its functioning regulation, 2004. (regulation no. 2 of 2004), Establishment of forum and Vidyut Ombudsman for redressal of grievances of consumers (regulation no. 1 of 2004), Draft regulations inviting suggestions / comments - licensee's standards of performance, Draft regulations inviting suggestions / comments - licensee's duty for supply of electricity on request ,Draft regulations inviting suggestions / comments - licensee's power to recover expenditure incurred in providing supply, Draft regulations inviting suggestions / comments - appointment of electricity ombudsman and service terms and conditions of the ombudsman and his staff, Draft Regulation on Electricity Supply Code Under Section 50 of The Electricity Act (Supply Code Regulation), Draft regulations inviting suggestions / comments - constitution of state advisory committee, Draft regulations inviting suggestions / comments - security deposits to paid by consumers to the distribution licensees for the energy supplied and for providing of electric line/ electric plant/electric meter and Draft regulations inviting suggestions / comments - procedure for filing appeal before the appellate authority.

Code on standards of performance mandates the licensees to specified norms and they have to pay compensation to the affected parties in case of default. In individual cases of default, the draft regulations say, licensee is required to pay the compensation automatically without waiting for any claim from the affected party. In cases where a group of consumers are affected, compensation is payable only on a claim from the affected parties. The levels of compensation payable to affected consumer for default as per the draft regulations are: Rs 100 in the case of normal fuse-off leading to a breakdown in power supply for a period of up to 4 hours in cities and towns and up to 12 hours in rural areas. Rs 100 to each affected consumer in the case of line breakdowns up to 6 hours in urban areas and up to 24 hours in rural areas. Rs 200 to each affected consumer for failure of distribution transformer up to 24 hours in urban areas and up to 48 hours in rural areas. Rs 200 to each affected consumer if the period of scheduled outages exceeded 12 hours and power was not restored by 6 p.m. on any day. Rs 200 in each case of default if the licensee did not rectify voltage variations within 10 days even when no enhancement of network is involved.

3. STATE AND CENTRAL UTILITIES

APGENCO

In March, it is reported that the APGenco has stood first among other power plants in the entire country in achieving the highest PLF of 86 per cent for the year 2003-04. Top three positions in PLF achievement have also been cornered by the three Genco stations in the state. While Rayalaseema Thermal Power Station (RTPP) occupied first position with 92 per cent PLF, Kothagudem Power Station (KTPS) stage-5 stood second with 91.9 per cent and Vijayawada Thermal Power Station (VTPS) came third with 91.9 per cent PLF. The Genco management has also felicitated the heads of gas-based units of Gas power corporation Limited among others for the overall performance of those units.

It is reported in January that the APGenco would undertake work on three major power projects this year to generate 1320 MW and contribute 8,000 MU. The projects are 660 MW Vijayawada Thermal Power Station (VTPS) Stage IV, 2 x 210 MW Rayalaseema Thermal Power Project (RTPP) Stage II and 6 x 39 MW Jurala Hydro Electric Scheme (JHES). Rs 16 billion RTPP stage II works were awarded to BHEL. The two units are scheduled for synchronisation by June and September 2006. Similarly, the EPC contract for the Rs 27 billion. For RTPP Stage II, PFC had agreed to give a loan of Rs 12 billion. Meanwhile, APGenco would give an advance of Rs 2 billion to BHEL. VTPS Stage IV, based on super critical technology, is likely to be awarded by May 2004. The unit was programmed for synchronisation by March 2007.

As an update on the VTPS project, it is reported in April that the ministry of finance has expressed its reservations on the 281 million euro loan offered by the German financial institution, Kreditanstalt Fur Wiederaufbau (KfW) for the 660 MW Vijaywada-IV super critical thermal power project. This is an offer of a large portion of commercial loan (73 per cent) combined with a small portion of soft loan (27 per cent). The rate on the commercial portion is even higher the prevailing ceiling as per government's guidelines for ECBs i.e LIBOR plus 350 basis points with average maturity period of more than five years. Further discussions are likely to take place with a KfW delegation, which is expected to visit India on May 5 and during the annual Indo-German consultations.

As we go to the press in June, it is reported that the founder CMD of APGENCO, Mr. Parthasarathy has resigned. He was also the Chairman of the undivided APSEB when unbundling took place. Mr. Deepak Kr Panwar, IAS, Principal Secretary- Energy has taken additional charge as the CMD of APGENCO.

<u>NTPC</u>

The 1,000-MW Simhadri thermal station of the NTPC at Parawada near Visakhapatnam generated 7,699 million units during the current financial year, the second year of its operation, against a target of 7,500 million units, achieving the PLF of 87.89 per cent, and the target for 2004-2005 has been set at 7,600 million units. During the first year of its operation, 2002-2003, the plant had generated 4,972 million units and there were a few problems last summer, which have since been corrected.

DISCOMs

The four distribution companies continue to be with the State government. Attempts at micro privatisation reported in our last Issue (by giving O&M contracts of substations) have not succeeded. With the change of government, it can be expected that these steps may not be revived for sometime. Financial performance of DISCOMs continue to improve.

4. PRIVATE SECTOR GENERATION

It is reported in February that, nearly a decade after securing a licence to start a 1,040 mw power plant near Visakhapatnam , the Hindujas are now making a comeback bid. The Hindujas are said to have been talking to the state government to revive their power PPA and allow them to start construction of the plant. The PPA allows the Hindujas to incur a fixed construction cost of Rs 57 million per MW. The Hindujas are said to have asked the Union power ministry to persuade the AP energy department officials to agree to their proposals, but the latter reportedly insisted on a fresh PPA with the proviso that the company reduces the fixed cost to level achieved by the NTPC's Simhadri power plant, which was built at a cost of Rs 41.9 million per MW.

In January, it was reported that over the next eight weeks, 18 generation projects, totaling a capacity of 7,587 MW and an investment of around Rs 30,000 crore, would be cleared. The projects will absorb debt totaling Rs 20,000 crore. The four projects totaling 1097.8 MW comprise three power projects in AP and one in Tamil Nadu. The projects in AP include Ispat Power's 370 MW Vemagiri gas-based project, GVK Industries' expansion project of 230 MW at Jegurupadu and Konaseema Gas project of 445 MW.

In February, it is reported that Alstom has received an order valued at around Rs. 5 billion to build the 228 MW combined-cycle power plant for GVK Industries Ltd. at Jegurupadu in Andhra Pradesh. The project is an expansion to the 235 MW Combined Cycle Power Plant built in the mid 1990s. The construction of the plant has already been initiated and is scheduled to enter into commercial operation in November 2005. Alstom Projects India Limited (APIL), an Indian company of the Alstom group, has a share in this project of around Rs. 2.4 billion. Alstom 's scope of supply includes one of its well-known GT13E2 gas turbine along with the heat recovery steam generator, steam turbine, generators, water steam cycle equipment and electro-mechanical auxiliaries.

Spectrum

In January, APTransco has issued a legal notice to Spectrum Power Generation Ltd (SPGL), an independent power project, to show cause why it "should not reduce" the capital cost of Rs 748.43 crore of the project by Rs 97.71 crore.

In March, the Spectrum Technologies USA (STUSA) has offered to IDBI-led lenders to relinquish their rights in the project and sell their debt and equity for the total outstanding principal of all loan dues of over Rs 6 billion during fiscal 2002-03. STUSA also envisages restructuring and settlement with lenders and a subsequent expansion of the Spectrum project (208 mw). STUSA, which holds 17 per cent equity (Rs 291.9 million) in Spectrum Power Generation Ltd (SPGL), has proposed a one-time settlement and obtain management control of SPGL.

It is also reported that the financial institutions (FIs), which hold the controlling stake in the IPP, are reportedly looking out for a buyer who will bail out the company. The offer by the FIs, according to well-placed sources, appears to have triggered some sort of a corporate war in the power sector with many big business houses engaged in power generation such as Tata, Reliance and GMR evincing interest to take over SPGL for strategic reasons. "Some of them have also visited the plant in Kakinada to evaluate the value," the sources said.

IV UTTAR PRADESH

SECTOR OVERVIEW

1. STATE OVERVIEW

Uttar Pradesh (UP) is the most populous state in India accounting for 16.4% of the country's population. The density of population is 473 persons per square kilometer as against national average of 274. It was the second state in India to initiate the reform process in power sector. The average PLF at that time (1998-99) was about 49% and T&D losses were about 50%. However, it has not kept up with the pace and the second phase of reforms took place only in mid-2003 when the T&D Corporation was split into separate transmission and distribution companies. The frequently changing political scene of UP has led to continuous turns and about-turns in the reform process.

Some of the key indicators of th	e UP power sector are	given in the table below:
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Power Infrastructure Summary 2004	
Total Installed Capacity	6500 MW
Available Operating capacity	3543 MW
Energy handled (including import, mu)	40241
Energy lost (T&D losses)	36%
Total no. of agriculture consumers-million	0.65
No. of villages electrified (as per CEA definition)	68%
Rural Households electrified	11
Total no. of Consumers- million	8.0
Per capita power consumption -kWh	199

Data source: websites of MoP, UPERC, UPPCL and FICCI

There are a few special characteristics of state of Uttar Pradesh and, specifically, its power sector:

- 1. The pace of urbanisation has been slow in this state and the main occupation is agriculture (73% of the total workforce). Agriculture consumers account for 12.8% of the electricity consumption in the state. 75% of this set of consumers have pump sets of less than 5 HP and are said to contribute 58% of the total electricity revenue.
- 2. It is reported that there are about 60 units in the HT category of industrial consumers.
- 3. As per GoUP data of 2000, 34% of the state's population is below poverty line.

All these reasons make the reform process complex. As the biggest vote bank for political parties in UP is the large set of agriculture consumers and moreover the poverty levels are high, government may not want to privatise electric utilities in the state soon. Privatisation will remove their control on power supply and may also lead to increase in future tariffs, which will affect their vote bank.

2. REFORM

Time	Milestone	Remarks
Jan1999	GoUP announces new power reforms policy statement	-
July 1999	UP Electricity Reforms Act 1999 notified	-
July 1999	UPERC established	-
November 1999	First public hearing organized by UPERC, on electricity tariff	-
14 Jan 2000	UPSEB unbundled and UP Electricity Reforms Act 1999 comes into force	UPSEB separated into three corporations, i.e., hydel generation, thermal generation and T&D. Beginning of 11 day employee strike.
15 Jan 2000	Formation of KESCO as separate company	Transfer of KESA assets to KESCO
Aug 2000	1 st tariff order	-
Oct 2000	Trust formed to protect employees' terminal benefits	First of its kind in the reform structure.
Oct 2000	Formation of Special Electricity Courts in all districts and a State level court.	The courts are not functioning as the State Judiciary has expressed its inability to provide judges for these Courts.
Dec 2001	UPPCL decides to establish 'Office of Dist Manager' for each district, in line with the concept of District Magistrate (DM)	-
April 2002	Reforms Steering Committee decides on transfer of KESCO to NTPC	An MOU was signed between NTPC and GoUP in 2002, which has been recently scrapped.
July 2002	UP Electricity Supply Code-2002 (Distribution Code) implemented	-
Sept 2002	Decision taken by cabinet to form four distribution companies except LESA and NOIDA area	-
June 2003	Formation of four distribution companies, other than LESA and KESCO	-
Dec 2003	A new Power Policy 2003 announced, in line with the Electricity Act 2003	-

The Table below gives the major milestones in the UP reform process

Four years after unbundling UPSEB for subsequent privatisation, government control on the sector remains strong with most Directorship positions in the Generation, Transmission and Distribution Companies being occupied by government nominees. Further, progress in the area of efficiency improvement has been handicapped by the non participative approach of the top management in handling the reforms, which has added on to the communication gap between the lower and middle/top management making any change within the organisations a difficult task. UPPCL in its presentation to MoP, in Sept 2003, cites large size of the sector in UP, high average employee age and employee demotivation as some of the main reasons for the slow pace of reforms.

3. GENERATION

By 2002, the generation corporation had actively undertaken R&M and capacity addition plans under the Accelerated Power Development Programme of Govt. of India, at the cost of about Rs.100 Crore. The planned activities were:

- Refurbishment work on 5x50 MW units and 5x200 MW units of Obra TPS. These are about 15 years old (stalled now).
- Capacity addition of 2x210 MW Parichha Thermal Extension Project (work on). These units are expected to be commissioned by April and October, 2005.
- Capacity addition of 2x500 MW Anpara 'C' Thermal project (stalled now)
- Installation of 210/250 MW units at Harduaganj (not under consideration).

4. PRIVATE GENERATION AND DISTRIBUTION

Encouraging private generation had not been on the agenda of previous governments. However the present government is showing interest in encouraging private generation. It recently announced a new power policy which actively seeks to encourage private generation in the state. As of now Tatas, Reliance and some others have shown interest in reviving old projects and building new ones.

Some of the potential generation projects being revived by the present government are:

- 1. Birla group financed 567 MW coal based Roza project sanctioned by the State government in 1993 (being revived)
- 2. Canadian firm financed coal based 800 MW Jawaharpur project (in the process of being revived)
- 3. ISN, a US based company, financed 2000 MW thermal project in Partapur, near Allahabad (stalled)
- 4. Hydro electricity Tehri power project (near completion)
- 5. Tata Group financed 1000 MW gas based power plant (in the initial stages of discussion)
- 6. Tata Group financed 330 MW Vishnuprayag hydro electrical project (being revived)

The MoP initiated CRISIL/ICRA study gives 41.85 marks to the power sector in UP (based on data till September 2003). Some of the salient features of this report are:

- Score on SERC related parameters is 10.5 on 13 and State Government related parameter is 9.5 on 17. However, rating on progress on attaining commercial viability is 1.25 on 15 and financial risk analysis gets 9.75 on 23
- It expresses satisfaction on functioning of UPERC and reduction in cash losses since 2001-2002.
- The report shows concern about low efficiency improvement, including high T&D losses (reports it as about 50% still), poor status of billing and metering and low PLF.

The functioning of UPERC has been a positive aspect of an otherwise slow process. There has been no significant change in the generation parameters and T&D losses since reforms started. However, there has been an improvement in revenue realisation. Five years into the reform process, it is largely believed that efforts at privatisation of either generation or distribution will still take time to be accepted and implemented.

REFORM UPDATES

1. STATE OVERVIEW

The year 2003-04 saw two new policy documents for UP power reforms, namely, Power Policy 2003 and draft of Electricity Supply Code 2004.

The Power Policy 2003 document came out in December 2003. It has a consumer focus; aims to providing reliable, quality and affordable power for social upliftment and economic development; and increase the availability of power by encouraging generating capacity. Update 7 had given the key features of the policy.

The power policy makes the entry of private players in generation easy and on attractive terms, which includes leasing and sale of existing SEB plants in UP. The policy specifically talks of promoting plants based on natural gas and renewables, not coal, with regard to increasing generation capacity. Encouraging gas based plants is likely to facilitate entry of players like Reliance. However the policy does not talk of 'competitive bidding' in establishing private power plants (rather it talks of 'suitable bidding'). It mentions competitive bidding only when referring to selling of existing SEB generation plants in UP that are inefficient. However no biding process is required to lease out R&M, Operation and Maintenance Contracts of existing plants, to private companies.

Though the policy is somewhat detailed on generation, it is unclear on transmission and sketchy on distribution. The section on transmission encourages private party participation in transmission and promises same privileges to them as given to UPPCL, like ease of land acquisition, environment clearance etc. It also specifies that a transmission company cannot be a trader, generator or distributor of electricity. The logic for private participation is that as the generation capacity goes up in the state the existing transmission network will not be sufficient to take the load. As UPPCL, the current transmission company, does not have the money to upgrade and expand, private participation will be needed in this area. However, it is unclear whether private parties can make limited investment in UPPCL or the policy is talking of multi party presence in transmission. More so as the policy specifies that UPPCL will remain a government company and a State Transmission Utility (STU). Further, the policy is not clear on the relationship between transmission licensees and the STU. The section on distribution talks of its privatisation, in line with the EAct 2003, but does not give sufficient details.

With regard to rural electrification and supply, the policy acknowledges that there are some set of consumers who cannot afford non subsidised electricity and will have to be supported. This acknowledgement and acceptance of need for subsidy is contrary to the EAct 2003 policy of eliminating power subsidy. The policy encourages involvement of rural cooperatives, panchayats and NGOs but does not specify how this engineering/technically intensive activity will be done and managed by the cooperatives, panchayats or NGOs or the level of government support to them. However, it talks of government help with special financing schemes for rural electrification.

The policy also talks of energy conservation and demand side management, and employee interests. The policy is a good beginning but lots of details have yet to be worked out. It is too open ended right now especially with regard to transmission and rural electrification. Interestingly no one from UPERC was part of the committee which drafted this policy. The committee included politicians and some big industrial houses.

Despite a new electricity policy that allows take-over of power units by the private sector and interest shown by several companies to set up power units in the state, a clear picture on the Uttar Pradesh power front is yet to emerge. The renovation and modernisation plan for the Obra thermal power station has been shelved after its talks were in an advance stage with BHEL. On the other front, BHEL has started work to add new units to the 240 MW Paricha project. The project is expected to complete by mid-2005. Pricewaterhouse Coopers have been dropped as consultants for UP power reforms and have been asked to take part in a competitive bidding for hiring consultants for the reform process.

2. REGULATORY INTERVENTION

At present UPERC is functioning with only one member, Mr. Vijoy Kumar, who is the Chairman. The other two members have been selected but have not joined. Hence, UPERC has not met since last 4 months due to lack of quorum.

In keeping with the analysis of The Distribution Policy Committee and the Expert Committee on State-Specific Reforms of MoP, UPERC has acknowledged the failure of Single Buyer Model (SBM) of power reforms and recommended the Generation Companies and Distribution Companies to engage in sale and purchase of electricity independent of the Transmission Corporation (in Power Diary Jan–Mar 2003). The Transmission corporation should in future be only a transmitter and a passive receiver of wheeling charges, instead of being a buying and selling company also. The distribution companies will be allowed to procure power on their own from generators of their choice without the transmission company being in the picture. UPERC also formally acknowledges and would like to consider the recommendations made by Prof.S L Rao that improvement in competition in the supply market needs a clear distinction on distribution and transmission wires, and where local suppliers should be allowed to supply power in limited localities by paying a rent for use of distribution wires.

In 2002, UPERC had commissioned IIT Kanpur to conduct a study on tariff principles and to undertake comparison of different methods for KESA and propose a new transmission pricing scheme. The study submitted its report in early 2003. The report says that for KESA, megawatt mile method leads to a more rational and cost effective price, and this includes losses. It recommends using either postage stamp method or megawatt-mile method as these are more suited to existing conditions like lack of reliable data and limited area reach of KESA. It has also recently (Feb-March 2004) commissioned a study to gather all possible primary data on consumers and distribution networks in two areas of UP namely, Kanpur and Agra. The primary objective is to tap all technical and commercial losses. Citing lack of active public participation in the hearings, UPERC has taken steps to encourage public forums and groups to actively participate in this sector, includes bearing the transport/travel cost.

UPERC invited comments from the public on the draft of Electricity Supply Code 2004 (Code) (till May 2004). The draft talks of the following:

- 1. It specifies the relationship between a distribution licensee and consumer
- 2. It details the following procedures:
 - new connection; reduction and enhancement of load; reconnection, disconnection and restoring of supply;
 - tampering or damage to meters and lines; and consumer grievance redressal
 - billing; and payment of bills
 - dealing with customers; and payment of bills
 - standards of performance for the licensees

UPPCL filed its ARR for the year 2003-04. The salient features were:

- Proposed increase of Rs 145 crores in the tariff. UPPCL proposes to merge two slabs of agriculture tariff, namely, separate rates for 0-5 HP load and 5+ HP load, into one single tariff slab of Rs. 70 per HP per month.
- Proposal to withdraw the rebate applicable for timely payment of bill.
- Introduction of time of day tariff for large and heavy industry with night time rebate and peak hour surcharge.
- The cost of purchase of power from the state generation corporation will be Rs. 1.52 per unit for FY2004.
- The actual cost of power purchased from Central Generation Company, Tanda, in FY2003 was Rs. 2.02 per unit, while the cost of power purchased from State Thermal Generation Company was Rs. 1.48 per unit, State Hydro Generation Company was Rs. 0.50 per unit and Cogeneration was 2.24 per unit.

UPERC has approved the following for FY04:

- 1. No increase in tariff for rural agriculture pump sets, rural domestic light and fan, and rural commercial consumers.
- 2. Reduce T&D loss to 30.4 % (UPPCL proposed it at 30.6%).
- 3. GoUP subsidy remains same at 935 crores.
- 4. Timely payment rebate has been withdrawn.
- 5. Approved time of day tariff and related rebates.
- 6. Approved tariff increase is: 2.8% for domestic, 9.8% for public institutions, 5.6% for public lamps and 1.% for L&H power.
- 7. Asks UPPCL to follow merit order dispatch principle for rostering, namely, areas having low Technical and Commercial losses to get power for longer hours.
- 8. Has expressed its dissatisfaction over attempts by UPPCL to improve efficiency and reduce losses.

A welcome introduction to the new tariff order is the 'time of day' metering for large and heavy industries. The approximate difference in tariff between supply during restricted hours and non-restricted hours will be about 8.4% at 30% load factor. As regards NTPC owned plant, Tanda, the high per unit cost is a cause for concern.

3. STATE AND CENTRAL UTILITIES

The UP government set up a power trading company for purchasing electricity from various generating units. The company is set as per the Electricity Act 2003. Though initially it will be a state run company, this power trading company will later be converted into a joint sector firm, where the private sector will hold 51 per cent equity. The company is expected to start functioning in July 2004. Now onwards, the state power corporation will not be involved in the purchase of power and the new company will provide electricity to distribution companies for distribution in the state.

NTPC has called off plans to take over distribution in Kanpur citing lack of interest shown by the UP government. An MoU had been signed by the previous State Government and NTPC in 2002 and NTPC was to start its operation by October 2003, however, the new State Government halted the process in April 2004 and asked NTPC to reapply and take part in the open bidding process; and the MoU has been cancelled.

As regards the development of the third phase of Anpara (Anpara 'C'), the earlier state government had signed a loan agreement with the Japanese government for this purpose. The loan was at 4% interest rate and would have cover 80% of the total cost, which was highly competitive. The remaining 20% of the cost was to be borne by the State Government and the loan for this had been approved by the Power Finance Corporation (PFC) at 8% interest rate. However, the new government, in Feb 2004, cancelled the agreement with the Japanese government. It is citing the interest rate of 8% from PFC as too high for them to bear as one of the main reasons for stopping work at Anpara C. The new government has decided to privatise the project and the initial bidding process has begun.

UPPCL has been trying a financial turnaround after posting losses for the last four years. Its cash deficit was down from Rs. 1350 crores in 2000-01 to Rs. 450 crores in 2002-03. However, it is expressing its inability to turnaround this year due to government order of additional supply to rural areas (for 14 hours a day, from current 8 hours a day) which will cost additional Rs, 400-500 crores. UPPCL is also planning to supply power to NOIDA Power Company and KESCO, along with the four distribution companies separated out of UPPCL in 2003-04. There has been a consistent lowering of employee cost since FY2001. Currently it is 12% of the total operating cost and 1% of the revenue collected. There are 148 consumers per employee. Comparison of establishment cost across various states shows that the national average of establishment cost per unit of energy sold is 44.5 paisa per unit while that of UPPCL is 50.3 paisa per unit. In its presentation to the MOP, in Sept 2003, UPPCL stated that its overall collection efficiency was 81% and T&D losses were 34%.

The four distribution corporations (called divisions) started operation in June 2003. These four divisions have collectively increased their revenue collections from Rs. 3388 crores in 2002-03 to Rs. 3662.2 crores in 2003-04, with Meerut division showing the maximum improvement in performance.

4. PRIVATE GENERATION AND DISTRIBUTION

UP has potential of 1400 MW of power from bagasse (sugarcane residue). Currently it has started giving about 100 MW to the grid. The entire investment has been by private developers, with active support from UPERC and (Non-conventional Energy Development Agency (NEDA). Some of the points which facilitated this were:

- 1. Standardisation and simplification of the Power Purchase Agreement for co-generation
- 2. Finalisation of tariff through public meetings.
- 3. Power supply to 132 kV substation (instead of 11kV or 22kV substation) to ensure government supervision and hand holding (though UPPCL). 50% of the line cost borne by UPPCL and subsequent ownership of lines by UPPCL.
- 4. Arrangement with banks for loans to the private generators
- 5. Minimum wheeling charge

Reliance group has announced (December 2003) its plans to set up a 3500 MW gas based power project in Dadri, UP envisaging an investment of over Rs 100 billion. This would be the world's largest gas based power generation project at a single location and will come under a company called Reliance E-Generation Private Limited (REGL). Some of the features of this project are:

- Fuel for the same would be procured from the company's Dhirubhai gas fields in KG basin off the coast of Andhra Pradesh.
- The project would be set up in phases with the first stage, of 1200 MW, set for completion within 2 years, approximately by June 2006. The plant is expected to

generate power at a cost of Rs 2 per unit. This reveals a highly competitive price. The second and third phase will be completed by Jan 2007 and July 2007 respectively.

- Reliance has acquired 2500 acres of land for this project at the cost of Rs. 100 crore.
- The Reserve Bank of India has cleared the loan for this project.
- Reliance has committed to provide 1500 MW to UP and the rest of the power generated from this project is expected to be exported to Mumbai and New Delhi.

Jaiprakash Power Ventures is developing a hydro-electric project across river Alaknanda in Chamoli district, at a cost of over Rs 19 billion. To be commissioned in December 2006, the Vishnuprayag hydro- electric project will have an underground power station with an installed capacity of 400 MW. The project, on completion, will generate 2,060 million units of power with average power generation cost of Rs 2 per unit. Jaiprakash Power Ventures will develop the project on BOOT basis.

Noida distribution continues to be with NPCL. In January, NPCL had requested UPERC for extension to file the tariff application for the year 2004-5. This has been granted.

V MAHARASHTRA

SECTOR OVERVIEW

1. STATE

Maharashtra State Electricity Board (MSEB) the public sector utility, to generate, supply and distribute electricity in Maharashtra, came into existence on 20th June 1960. It soon acquired (after expiry of licenses) many small private power companies in the state. Since then, MSEB has monopoly over the generation, transmission, and distribution of electricity in the state except the Mumbai metropolitan region. Mumbai is served by three utilities, viz. Bombay Electricity Supply and Transport (BEST), Reliance Energy Ltd. (earlier known as BSES), and Tata Power Company (TPC). BEST is Mumbai Municipal Corporation's undertaking and has a license to distribute power in the South Mumbai. Reliance Energy Ltd (REL) is a public limited company, in which Reliance group has a shareholding of around 58%. REL distributes power to suburban area of Mumbai and also owns and operates a 500 MW coal thermal power plant at Dahanu (near Mumbai). TPC is a TATA group company supplying power to BEST and BSES from its 1,774 MW power plants. TPC also purchases power from MSEB to supplement its own generation for meeting Mumbai's demand. Apart from this, TPC's license also allows it to sell power directly to consumers in the areas licensed to BEST and BSES. But these provisions are under dispute and in a case filed by REL, the MERC has restrained TPC from supplying power to consumers with demand below 1 MW for the time being. After BSES's (REL's) Dahanu plant came online in 1995, TPC's capacity utilization fell. It was after that the TEC started actively seeking consumers from service areas of BEST and BSES. "Mula Pravara Electric Co-operative Society" is the only co-operative electricity distribution utility in the state. "Mula Pravara" serves nearly 200 villages in Ahmadnagar district. Thus, Maharashtra has a mix of different patterns of utility ownership and also retail competition in Mumbai area since four decades. Table 1 lists some salient features of these five utilities to indicate the relative scale of operation.

Sr.	Parameter	MSEB	TEC	BSES	BEST	Mula- Pravara
No						
1.	Installed Generation Capacity (MW)	9711 #	# 1,774	500	Nil	Nil
2.	No. of consumers	1.3 Cr.	300 lakh	20.6 lakh	8.4 lakh	1.3 lakh
3.	Sales (MU)	40,000	10,000	5,415	3,000	480
3.	Annual revenue (Cr.)	13,000	3000	2,158	1,400	45
4.	Service area (sq. km.)	3,08,000	438	384 7	8	1,880

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Notes:

1. Cr .= crores = 10 million, & Lakh = 100,000

2. Numbers given above are approximate

3. TPC sales includes sales to BSES and BEST

4. # Apart from this MSEB also has a share of around 2350 MW from central sector generation such as NTPC and Nuclear Power Corporation. There is around 700 MW of non-conventional capacity (wind and co-gen) in the state with energy from most of this being purchased by MSEB.

Remarkable growth in physical infrastructure

Since its creation in 1961, MSEB has made remarkable progress in terms of expanding the physical infrastructure. In terms of installed capacity and revenue, it is the largest electricity board in the country. MSEB achieved 100% village electrification (~40,000 villages) in 1989 and serves nearly 22 lakh agricultural consumers. In domestic, commercial, and industrial categories of consumers, around 65% consumption is in the urban areas. With T&D losses of around 38 %, similar to other states, huge T&D losses and theft of power is a major issue for MSEB also.

2. REFORM

The state government was forced to establish the Maharashtra Electricity Regulatory Commission (MERC) in 1999 by a High Court order on a case filled by an industry association. MERC was formed under the Central Electricity Regulatory Act 1998. Since then MERC has issued orders on several important matters, such as three tariff revision orders of MSEB, orders on purchase of power from non-conventional projects such as wind and co-generation, orders regarding dispute between TPC and REL regarding sharing of stand-by charges etc. Apart from this MERC has also issued important orders for disclosure of all contracts and agreements (e.g. financing, construction, O&M, fuel supply) relating to all IPPs in the state. Recently, MERC also undertook tariff revision of two private utilities (i.e. TPC and REL) for the first time since its inception, but the orders on these cases were released in June 2004. Hence this update does not cover details of the same. Compared to many other states, regulatory process in Maharashtra has witnessed significant and effective participation from consumer groups. This has resulted in setting up of some good precedence in terms of transparency and public participation. For example, MERC invites all four recognized consumer representatives for all hearings, including admissibility hearings and technical validation sessions.

Though there have been couple of serious attempts by the state government in the last five years to undertake unbundling of MSEB, it is still an integrated utility. Main reasons for this are strong opposition from employee unions and peculiar political situation (a coalition government and recent changes at the central level, which postponed the unbundling deadline pursuant to the E. Act 03). One important outcome of this process has been the adoption of 'Internal Reform' model by MSEB. In 2002, after a strong opposition to unbundling by MSEB unions, as a way forward, the state government, MSEB and unions adopted this 'internal reforms' model. This model is essentially aimed at improving the efficiency of MSEB with the cooperation of unions. The unions agreed to an incentive-disincentive mechanism linked to MSEB performance. Although, as a result of this, MSEB's working has improved in some areas, the overall effectiveness of this model has been limited due to several structural and process lacunas.

3. STATE UTILITY – MSEB

As mentioned earlier MSEB is the state utility supplying power to all of Maharashtra, except Mumbai. Compared to other SEB's in the country MSEB's financial as well as technical performance is relatively better. Key statistics of MSEB are given in Table 2 below.

Table 2: Key statistics of MSEB

Generation Capacity		In (MW)
	Total	12791
	Hydro	2430
	Thermal	6396
	Gas	912
Power Purchase Shares		MW
	NTPC	1938
	NPC	415
	Wind	400
	Co-gen	300
Consumer Mix	No. of consumers	Sales MU
Domestic	94 Lakh	8781
Commercial	9 Lakh	2264
Industry - LT	2 Lakh	3640
Industry - HT	8383	12861
Agricultural	23 Lakh	8369
Others (railways etc.)		3794
Cost Structure	Rs. Crore	
Generation	4104	
Power purchase	3132	
Employees cost	1655	
Administration & General Expenses	139	
Operation and Maintenance	737	
Depreciation	1578	
Interest cost	1126	
Lease rental	85	
Provision for doubtful debts	181]
Other expenses	206	
Total	12943]
Surplus	433]
Total	13376]
T & D losses	36 %]
Peak Demand (MSEB)	~ 11,500 MW	

Source: MERC Tariff Order dt. March 10, 2004

In the last few years MSEB has witnessed significant peak shortage. As per MSEB claims, currently the peak shortages are about 2000 MW, though there are lot of questions about the methodology adopted for projecting peak shortages. Apart from meeting improving demand – supply situation, reducing arrears and T&D losses are the two key challenges before the MSEB.

4. PRIVATE GENERATION : STATUS OF INDEPENDENT POWER PRODUCERS

During 1990's MSEB entered into power purchase agreements with three major IPPs. These are, 1. Enron's Dabhol 2284 MW LNG Project. 2. Reliance's 447 MW liquid fuel Patalganga Project and 3. Ispat group's Bhadrawati 1082 MW Coal project. Out of these, Enron's Dabhol project

was the most controversial project and earlier issues have tracked the developments regarding this project is detail. First phase of this project (740 MW) started generation in 1999 but the generation has stopped since May 2001, after MSEB rescinded the PPA on grounds of false declaration by the company. Since then a bitter tussle is going on between the project's promoters, foreign as well as Indian lenders of the project and state & central government. Recently, General Electric and Bachtel have purchased entire equity of now bankrupt Enron Corporation and they together hold about 80% of the equity. Though several rounds of negotiations and litigation have taken place, there is no solution in sight, as the key stakeholders, Indian and foreign lenders, GE & Bachtel and state and central government are unable to agree on sharing of losses (as to make the plant financially viable it is essential that costs are reduced significantly by writing off equity as well as debt). Incase of second IPP, Reliance project, the power purchase agreement between Reliance and MSEB was amended after establishment of MERC. Prayas realized this when the MERC ordered for disclosure of all contracts relating to IPPs in the state, and Prayas filed a petition before the MERC on this issues (as, as per the Act, all PPAs need to be approved by MERC). In response to this prayer, MERC declared the amendments to be of 'legally doubtful validity', implying that unless MSEB / Reliance approaches MERC for approval of amendments; the same cannot be legally valid. Since, the MERC order, Reliance has not approached MERC on this issue and the project has been shelved. MSEB's unwillingness to purchase additional power (in light of Enron project), developments in the fuel and electricity sector and the controversy surrounding Enron project could be some of the reasons for this.

The third IPP in the state has also been shelved. This 1082 MW Bhadrawati Coal project, is marred by several controversies mainly relating to fuel supply and cost. The project will use coal mined from a nearby captive mine to be owned and operated by a sister company. There were several allegations and court cases on the issue of coal cost. Similarly, it was suggested that the proposed project would pose threat to national security as the proposed captive mine was close to one ordnance depot. Earlier Electricite de France (EDF) withdrew from the project due to delays and due to the unresolved issues relating to coal supply, cost, and the escrow cover. After the report of Energy Review Committee (Godbole Committee), considering the changed demand-supply situation as well as learning from the Enron episode, the GoM has decided to keep the project on hold. Also, due to several changes and delays in finalising various contracts, it is expected that the PPA will have to be amended, which would require approval of MERC. In the nut shell, currently there are no active IPPs in the state, though the resolution of Enron project remains a key challenge and huge risk for the state finances.

REFORM UPDATES

1. STATE OVERVIEW

General

The national elections and the impending state elections had an overriding impact on the policy discussions in the state. On the backdrop of the serious drought in the state, the Congress and NCP coalition government in Maharashtra has attempted to keep the farmers happy while minimizing the load shedding in the urban areas. The partial waiver for arrears and reduced tariff for farmers and power loom owners have had serious implications for the sate treasury.

The tenure of the MSEB board got over in April 04. In a surprising move, the handover from ex board members was sought late on the night of the last day of their tenure. Then energy secretary was nominated as acting chairman of MSEB. The final appointment of chairman did not happen for several weeks after that.

MSEB unbundling

As per the provisions of the E Act, MSEB restructuring is to be completed by June 10, 2004. The GoM as well as MSEB appointed consultants (SBI Caps and PWC respectively) to suggest the reform model. The SBI Caps suggested formation of separate companies for generation, transmission and distribution. The SBI caps has stressed roping in central government, WB, ADB and the PFC to arrange for the transitional finance. For distribution, it has suggested three different, rather obvious, models: (a) keeping all distribution together, (b) separation of urban and rural areas distribution, (c) doing geographical division of MSEB distribution. Different mechanisms are also suggested to manage the subsidy burden in these situations. The pros and cons of these are unclear, as their report is not made public by the government.

The MSEB consultant suggested making four rural distribution companies and one urban distribution company; where by the urban company could compete with the threat of private distribution companies. But there was a debate on whether to have one urban company or to have two urban companies.

The GoM sought MERC's advice on reforms. The MERC has put up its advice on the net. Which suggests adopting a two-stage process, were all the distribution is kept as one unit in the first phase.

Seeing the opposition of the unions and Veej Sangharsh Sameetee (Power Struggle Committee) - a coalition of consumer organisations, NGOs and unions, the state government requested MoP to extend the 10^{th} June deadline by six months – until a few months after the sate elections. Unfortunately no detailed report of estimate of tariff impacts have been made public by either MSEB or government.

Other Proposals

For some time now, the TPC has been showing keen interest in taking up the distribution in urban areas in the state. In another proposal to the government, the TPC has proposed a franchisee model, where by it would to takes over the operations and maintenance of the distribution network in some areas for a fee. TPC will continue to buy power from the MSEB. It is proposed that MERC will fix the tariff at which power is bought from MSEB as well as sold to the customers.

2. REGULATORY INTERVENTION

A lot of activity happened in the context of MERC orders and formation of regulations related to E Act 2003. All the three major power utilities in Maharashtra applied in MERC for their tariff revision for the FY 2003-04 and the private utilities also filed ARR for the FY 2004-05.

2.1 Tariff orders

MSEB

After due process of public hearing the MERC published an operative tariff order on MSEB proposal on December 1, 2004. The new tariff was affected from the same date but the detailed order (with reasoning) was given by MERC much later, on March 1, 2004.

- MERC allowed only a tariff increase of only ~ 1.5% to MSEB
- MERC has disallowed the T&D losses above the normative loss of 26.9%. MSEB's loss level is 36.6%. This is one of the very strict orders on this aspect.
- Order allows MSEB to collect cash advance from consumers to cover the cost of increased power purchase due to higher T&D losses (nearly 10% more than normative). The advance

would be treated as Regularity liability charge (RLC). This is a new concept in regulatory process in India.

- The RLC charge of Rs. 0.50 per unit would be collected from bills of subsidizing categories (i.e. LT commercial, LT/HT industrial and Railways). The RLC amount of nearly Rs 900 Cr p.a. is an un-funded liability, and will be returned to the respective consumer categories in future through reduction in tariffs when T&D losses reduce to the normative level.
- The tariff of subsidizing categories has reduced by 4 to 6% despite payment of RLC. The agricultural tariff is more than 50% of average cost of supply. Figure below shows the steep reduction in cross-subsidy by MERC. State government has to offer large subsidy to agricultural consumers due to this.
- Commission plans to take quarterly review of MSEB's compliance with the directives



Figure 1: Steep reduction in cross-subsidy by MERC

TPC/ BSES (REL)

Despite formation in 1999, the MERC has not yet published a format for Annual Revenue Requirement (ARR) filling. This allowed utilities to escape regulatory review, if they did not expect a tariff increase. The two private utilities TPC and BSES (now Reliance Energy Ltd or REL) got the benefit of this.

Prayas attempted to force the MERC to take up the tariff review by filling a petition in August 2002. But in it's order dt. November 1, 2002, MERC decided to call for data of fuel cost and did not act on it. Finally, due to a the complicated fight between the two utilities and the order of Supreme Court directing MERC to review TPC tariff since 1998, the MERC was forced to direct the two utilities to file an ARR and proposed tariff. The ARR for FY 2003-04 were filled by the two utilities, starting in October 2003. As per the precedence the consumer representatives were part of technical validation process. During the technical validation in November, commission and consumers sought substantial additional data and MERC also asked the utilities to file ARR for FY 2004-05. MERC decided to consider the two ARR simultaneously.

The public hearings were held on March 18 and 22 for TPC and REL respectively. Despite Mumbai being active, the number of representations to MERC were very limited. The MERC is expected to give orders on these tariff petitions in June. These will be the first public review of the functioning of these utilities since their inception and also first order since inception of MERC.

TPC/REL stand-by charges

For protecting Mumbai from load shedding, MSEB gives a back-up supply to this island. The sharing of the charges to be paid to MSEB (Rs 396 Cr/yr since FY 01-02) has been a matter of bitter dispute between TPC and REL. The state government failed to resolve the dispute and that matter was finally handed over to MERC, after government gave it additional powers of dispute resolution (under ERC Act 1998). The MERC order on sharing of stand-by charges, were appealed by both utilities in HC and then in Supreme Court. The SC referred back the matter to MERC for reconsideration.

The MERC sought advice from CEA on the matter. The CEA gave its report where it suggested the allocation of stand-by charges on the basis of the peak load met through generation stations. The MERC gave an order on 31st May, largely based on the CEA report. This requires TPC to pay much higher share of stand-by cost. The MERC ordered TPC to pay about Rs 350 crore to REL.

Post E Act issues

The processes initiated due to E Act got momentum in this period. The regulations by MERC, and several petitions by the private utilities flooded the MERC, when it was trying to clean up the complicated old issues since 1999.

Regulations

In a very unusual act, the MERC took a meeting of the two private utilities and asked the utilities to hire a consultant and submit the draft regulations to be notified by MERC in fulfilment of E Act requirement. Consumers raised objection to this and suggested that the MERC should do regulations (by appointing its own consultant). The MERC responded to this by including the 4 recognised consumer representatives in the project coordination committee (PCC). The utilities objecting to this process, renamed the PCC as project consultation committee. The drafts of regulations approved by utilities came to PCC for discussion. If the differences remained these were pointed out to the MERC.

The PCC had over a dozen meetings in last few months and through this process drafts of several regulations were sent to MERC. By May 2004, the final regulations for Consumer Grievance Forum and Ombudsman were notified by MERC. Drafts of several other regulations such as Conduct of Business, and License Conditions have been circulated by MERC for comments.

Applications for grant of 2nd license for distribution

While the Electricity Bill, tabled in the legislature was converted into Act, the Ministry of power unilaterally did some major changes (without any basis of previous discussions of recommendations of the parliamentary standing committee). One such change was introduction of a concept of parallel distribution license (in the same area). It was argued, that if some SEB in backward area refuses to improve of un-bundle and another agency wants to set up distribution in that area, it should be allowed. There is no precedence in the world where wires business is not considered as a natural monopoly.

But soon after the notification of E Act, the Reliance Energy Ltd applied for 2nd distribution license in five urban areas of MSEB (namely south Mumbai and Navi Mumbai, Nagpur, Pune, Aurangabad and Nashik). These small geographic areas represent nearly a third of MSEB revenue! Clearly this was way different than the said thinking of MoP. Prayas objections to the application by REL can be seen at http://prayaspune.org/energy/M28_BSES_2Lic.pdf

TPC followed the suit and applied for similar six areas of MSEB. The REL also applied for 2nd license for South Bombay, the richest part in the state, being supplied by the municipal undertaking - BEST. To follow the suit, later even MSEB applied for a 2nd license in the creamy area within REL's Mumabi distribution license area.

It became clear that cherry picking would not be one-way process, and would lead to a bitter battle. Similar process happened in several states including the Delhi metropolitan area. The MERC as well as other SERCs have yet not given decision on any of these applications. Several contentious issues including the mechanism to deal with sunk costs of wires, ensuring level playing field, and deciding tariff principles remain unresolved.

Competition in Mumbai

The traditional way of opening power sector for retail competition is to allow distribution open access and to separate the electricity supply from wires business. On a petition filled by consumer group (Mumbai Grahak Panchayat), seeking competition in Mumbai, the MERC has decided to commission a study to find most suitable way to introduce competition, practicality and implications of such a move.

Transmission open access request by REL

The REL owns a 500 MW plant at Dahanu near Mumbai and it supplements its power requirement y purchasing power TPC. The TPC power is expensive mainly due to two reasons: (a) being in Mumbai they have strict environmental restriction and have to burn (low sulphur) oil instead of coal, (b) TPC costs and operations have not been regulated by MERC. The REL has not signed a PPA for bulk power purchase from TPC, despite initial intentions to do so. In a bid to reduce cost of power purchase, the REL sought open access to purchase around 800 MW of power from out of the state. REL invited quotations for power purchase and applied for grant of open access on MSEB and TPC transmission network. On 30th Jan 2004, MERC allowed REL, under Section 35 of E Act 2003, to use TPC, MSEB intervening transmission facilities to he extent of surplus transmission capacity. But MSEB argued that they did not have any spare transmission capacity to offer to REL, while TPC argued that REL was requesting distribution (and not transmission) open access from TPC. The dispute on spare transmission capacity went back to MERC. The MERC has constituted a committee to resolve this. This committee under Western Regional Electricity Board, has representation of all utilities. The exact terms of reference for the committee are yet to be decided.

3. STATE & CENTRAL UTILITIES

Internal reforms of MSEB:

Over a year ago, the MSEB unions opposed the un-bundling and threatened to go on strike. The unions also offered to lend sizable amount of money from their retirement benefit fund (which is separately managed). The unions, management agreed a plan for internal reforms wherein the unions signed a performance contract with management, with provisions of penalty for not achieving the performance. Nearly an year after this the MSEB has reported reduction in T&D losses and increase in generation due to the internal reforms.

The state government announced subsidy to reduce the tariff of agricultural and power loom consumers. The agricultural tariff was reduced from Rs 1.8 /unit (set by MERC) to Rs 0.50 /unit and Rs 750/Hp/yr. Government also took the responsibility to pay half of the arrears of the agricultural consumers if the farmers cleared the remaining half of the arrears in a time bound manner. The MSEB collected about Rs 700 Crore under this scheme. The tariff of power loom

consumers was set equal to the LT industry by the MERC. This was reduced to Rs 1/unit by the government. In addition to this the government reduced the electricity bill of farmers in the area affected by the drought.

MSEB Generation Expansion

MSEB declared its intent to invest money for constructing two thermal power plants of 250 MW. Both these projects would be extension at existing plat sites. The proposed cost of the plants is over Rs 5 Cr/MW. But the MSEB has not taken MERC's approval for this investment.

MSEB's new captive power policy

In response to two separate petitions filed by Ballarpur Industries (Bilt) and Vidarbha Industries Association (VIA) in December '03, the MERC stayed the revised captive power policy of MSEB on 3^{rd} March. The petitioners claimed that the policy was illegal, as per E Act 2003.

4. PRIVATE SECTOR GENERATION

TPC plans for generation

The TPC has announced it plans to set up large coal based power plants in Maharashtra. TPC has acquired permission near Bhivpuri at Vile and has secured several necessary permissions to build a 500 MW plant. The prospective buyers of the plant are not yet declared.

REL Dahanu plant (pollution)

The REL (earlier BSES) coal plant of 500 MW is in the environmentally sensitive Dahanu area. The permission received by BSES, for the plant construction was with a condition that it would establish a flue gas desulphurisation plant (FGD) to restrict sulphur dioxide emissions from Dahanu plant. This issue has been a matter of lot of debate and litigation. The plant has been in operation since 1996 but it still operates without a FDG. Recently, in March 2004, The Maharashtra Pollution Control Board (MPCB) gave permission to REL to operate the plant for next five-years without FDG. But the Dahanu authority has given the permission to operate it for the next one year, to install FDG in six months, and submit quarterly progress reports to the authority.

Gas pipe line – GAIL etc. (Uran and other industries)

The GAIL has announced that it will extend its pipe line in the key industrial areas like Pune in year 2005. This is expected to give a boost to the small captive generation by industries. The Uran CCGT plant (912 MW) is also expected to get additional gas in year 2005. This would substantially increase the PLF of Uran plant.

REFERENCES

- 1. Infraline Email news service, January 2004 to May 2004
- 2. TERI Newswire: Fortnightly News abstracts on economy, energy and environment, TERI, New Delhi, Volume 10, Numbers 1-10 (January 2004 to May 2004)
- 3. Power News: Weekly News updates on Power, Power Line, New Delhi, January 2004 to June 2004
- 4. Several News Paper reports and Discussions with people working in the sector.
- 5. Web site of Ministry of Power: www.powermin.nic.in
- Web site of Central Electricity Regulatory Commission:www.cercind.org
 Web site of Central Electricity Authority: www.cea.nic.in
- 8. Website of OERC: www.orierc.org
- 9. Website of APGENCO: www.apgenco.com
- 10. Website of APTRANSCO: www.aptranscorp.com
- 11. Website of APERC: www.ercap.org
- 12. Website of UPERC: www.uperc.org
- 13. Website of MERC: www.mercindia.com
- 14. Website of World Bank: www.worldbank.org.in
- 15. India Power Sector Reforms Update, Issues 1,2,3,4,5,6,7 (October 2001, Jan 2002, May 2002, September 2002, February 2003, September 2003, December 2003) Prayas, Pune. (Available at www.prayaspune.org)
- 16. The Electricity Act, 2003

GLOSSARY OF TERMS

ABT	Availability Based Tariff
ADB	Asian Development Bank
AP	(The Indian state of) Andhra Pradesh
APCPDCL	Central Distribution Company of Andhra Pradesh
APEPDCL	Eastern Distribution Company of Andhra Pradesh
APNPDCL	Northern Distribution Company of Andhra Pradesh
APSPDCL	Southern Distribution Company of Andhra Pradesh
APERC	Andhra Pradesh Electricity Regulatory Commission
APDRP	Accelerated Power Development Programme
APSEB	Andhra Pradesh State Electricity Board
ARR	Annual Revenue Requirement
BST	Bulk Supply Tariff
CCGT	Combined Cycle Gas Turbine (based power plant)
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CESCO	Central Electricity Supply Company of Orissa Ltd.
CPP	Captive Power Project
CRISIL	Credit Rating Information Service of India Limited
Crore	1,00,00,000
CSIs	Civil Society Institutions
DFID	Department for International Development (of UK, called ODA before)
DISTCOM/	Distribution Company
DISCOM	
DSM	Demand Side Management

EHV	Extra High Voltage
ERC Act	Electricity Regulatory Commissions Act (1998)
FEMA	Foreign Exchange Management Act
Financial Year	Indian Financial Year - 1 st April to 31 st March. Typically represented as FY
	98-99 etc.
FIPB	Foreign Investment Promotion Board
GENCO	Generation Company
GoI	Government of India
GoAP	Government of Andhra Pradesh
GoO	Government of Orissa
GoUP	Government of Uttar Pradesh
GRIDCO	Grid Corporation
HP	Horse Power (1 HP = 746 Watts)
HT	High Tension (or High Voltage)
HVDC	High Voltage Direct Current
Hz	Hertz
ICRA	Investment information and Credit Rating Agency of India
IDBI	Industrial Development Bank of India
IDFC	Infrastructure Development Finance Company Ltd
IPPs	Independent (Private) Power Producers
IPS	Irrigation Pump Sets
IRP	Integrated Resource Plan (usually implying a least-cost plan that takes an
	integrated view toward all energy options)
kCal	Kilo Calories
ko	Kilograms
kV	Kilo Volt
kVA	Kilo Volt Ampere
kW	Kilo Watt
kWh	Kilo Watt Hour
LNG	Liquefied Natural Gas
LT	Low Tension (or Low Voltage)
MDBs	Multilateral Development Banks (such as the WB and ADB)
MkCal	Million Kilo Calories
MoU	Memoranda of Understanding
MP	(The Indian state of Madhya Pradesh
MU	Million Units (million kWh)
MW	Mega Watts
NGOs	Non-Government Organisations
NHPC	National Hydro Power Cornoration
NPC	Nuclear Power Corporation
NTPC	National Thermal Power Corporation
NESCO	North-Eastern Electricity Supply Company of Orissa I td
ODA	Overseas Development Agency UK (now called DEID)
OFCE	Overseas Economic Corporation Fund of Japan
ONGC	Oil and Natural Gas Corporation
O&M	Operation & Maintenance
OSEB	Orissa State Electricity Board
PFC	Power Finance Corporation (a GoLowned financing agency for the power
	sector)
PLF	Plant Load Factor (also called Capacity Utilisation Factor)
PSIRU	Public Services International Research Unit

PTC	Central Power Trading Corporation
R&M	Repair & Maintenance
RBI	Reserve Bank of India
RC	Regulatory Commission
REC	Rural Electrification Corporation, New Delhi
Rs	Rupees (Indian currency)
RST	Retail Supply Tariff
SAR	Staff Appraisal Report (the project appraisal document from the WB)
SEBs	State Electricity Boards (vertical monopoly power utility owned by the state government)
SERC	State Electricity Regulatory Commission
SOUTHCO	Southern Electricity Supply Company of Orissa Ltd.
T&D	Transmission and Distribution
TEC	Techno Economic Clearance
TOD	Time-Of-Day
TRANSCO	Transmission Corporation
UP	(The Indian state of) Uttar Pradesh
UPPCL	Uttar Pradesh Power Corporation Limited
UPSEB	UP State Electricity Board
WB	The World Bank group
WESCO	Western Electricity Supply Company of Orissa Ltd.